Fractal Design

Painter 5

User Guide
for Macintosh® and Windows™

Notice
Before using this software or reading this user guide, make sure you have read, understood and agreed to the license contained in the back of the Painter 5 User Guide.

Credits
Fractal Design Painter® 5 was created by Mark Zimmer, Tom Hedges, John Derry, Priscilla Shih, Christina Hall, Scott Cooper, Erik Johnson and Vahe Avedissian; Product Management by Jon Bass.

Quality Assurance testing by Michael Cinque, Stanley Vealé, Adam Croston, Phil Horne, Steve Rathmann and Lorraine Wood.

The Painter 5 User Guide was written by Lionel Kirsher; edited by Mary Zimmer and Kim Ness; project management by Stephanie Workman and Mary Zimmer; art directed by John Derry and Stephanie Workman; illustrated by Brent Houston and Brian Moose, assisted by Lionel Kirsher, Arena Reed, Ketzia Schoneberg, Carolyn Skrzydlewski, Valerie Fisher, Laura Rinaldi and Arin Wiscomb; information design by Michael Everitt, assisted by Gale Curtis; production by Judy Severance and Kim Ness; prepress production by Rich O'Rielly, Rafael Rodriguez and Patrick Divine; review and validation by Priscilla Shih, Stanley Vealé, Erik Johnson, Jon Bass and Christina Hall.

Cover artwork by Mark Zimmer and John Derry. Section dividers illustrated by Brian Moose, Brent Houston, Michael Everitt, Arena Reed, Ketzia Schoneberg, Carolyn Skrzydlewski, Valerie Fisher, Nirah Johnson and Arin Wiscomb.

A big thank you to our friends at PhotoDisc, The Leader in Digital Stock Photography, who so graciously allowed us to use their terrific photos.

The User Guide was imaged by Pacific Digital Image, San Francisco, CA, and printed by Citation Press, Santa Clara, CA.

Includes

Kodak *ds*
digital science™

Color Management Software

FRACTAL DESIGN CORPORATION

Contents

Appendix B:
Photoshop Compatibility . . . 373

Index 375

Fractal Design License
Agreement 399

Fractal Design Painter
Troubleshooting Worksheet 400

Painter 5 User's Guide List of
References (LOR) i

Painter 5 User's Guide Index of
References (IOR) xii

Welcome to Painter

Fractal Design Painter® is the world's leading paint program for graphic designers. With Painter, you can simulate the tools and textures of Natural-Media®, from felt pens, charcoal, and colored pencils to watercolor and oils.

Painter 5 introduces the next generation of Natural-Media with an extensible, open architecture that goes beyond the traditional to create astounding new looks. Paint with texture, noise, fire, glow; remove scratches or clone images in magical ways. With a myriad of new brushes, Painter 5 gives you the ability to express your creativity in any way you can imagine.

As image-editing software, Painter provides many powerful options that let you sharpen, soften, and distort scanned photographs, clone with perspective, or make your image appear as if it were viewed through textured glass. Now many of your favorite effects are available in brushes.

Painter was the first image-editing program to offer multiple floating selections. Painter 5 delivers Dynamic Plug-in Floaters. Unlike traditional image layers that let you collage static image elements, Dynamic Plug-in Floaters perform image processing effects (like burning and tearing) that update automatically. They can also create new objects like a liquid metal painting layer. Painter's amazing Dynamic Floaters can be moved changed and reapplied without altering the original source material.
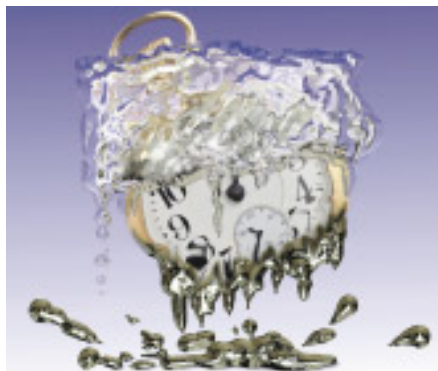
The Liquid Metal Plug-in Floater lets you paint with either metal or liquid.

Because no two artists work in the same way, Painter 5 lets you customize your work space to suit your own personal style. Brushes, Art Materials and menu items can be torn-off and placed on custom palettes. Build palettes that hold just the tools you use most frequently, or create custom palettes for a particular project. With custom palettes you'll work more comfortably and efficiently.

With all the new creative technology, Painter 5 fits right into the design process. Features like tear-off tools and custom palettes help you work efficiently. Industry standard selection tools and robust file support make it easy to move between programs. Color management by Kodak provides output results you can bank on. And slick tools for Internet publishing create hot looks fast.

What's New in Painter 5

Painter 5 has many new tools, features and improvements. For those upgrading, the following overview will give Painter 4 artists a head start on locating, learning, and taking advantage of these additions.

Expandable Plug-in Brushes

Painter 5's cool new Plug-in Brushes deliver astonishing new brush strokes, like **Fire**, **Blur**, **Twirl**, **Hue** and **Layer**—which lets you paint on a transparent floater.

To learn about Plug-in Brushes, see

To learn about painting on a transparent floater, see

To learn about the behavior of the new plug-in brush variants, see

Dynamic Plug-in Floaters

Painter 5's new Plug-in Floaters create dynamic image effects in a floating object. You'll find Plug-in Floaters that create dynamic Burn, Tear and Bevel effects on floating images. You'll also find a

Kaleidoscope, Glass Distortion, and the impressive Impasto, which lets you paint with textured brush strokes.

To learn about Plug-in Floaters, see Chapter 12, "Plug-in Floaters."

New Model for Selections and Masking

Painter 5 has a brand new model for selections and masking. This model follows what you're probably familiar with from other programs, so it shouldn't take long to get up to speed. You'll find the new structure to be more powerful and easier to use. Among the major changes are the consolidation of the canvas mask to a selection layer, a new Select menu, and the replacement of the **Objects: Path List palette** with an **Objects: Mask List palette**. You'll want to use the **Mask List** palette to achieve what Painter 4 did with **Mask Edit** mode.

Painter 5 also has a new **Magic Wand** tool that's much easier to use.

To learn about the program structure for selections and masks and the new tools, see Chapter 9, "Selections and Masks."

New Effects

Painter 5 adds compelling image effects, like Camera Motion Blur, Depth of Field and Zoom Blur in "Focus Effects" on page 279.

Distinctive new Esoterica effects include Custom Tile, Maze, Place Elements and Pop Art Fill in "Esoterica Effects" on page 284.

New Multi-Point Cloning

Painter 5 extends your cloning power with the power to transform. Rotate, scale, shear, and use perspective while you paint. You've got to check this out. Multi-point cloning is so powerful, we called the brush Super Cloners!

See "Advanced Cloning" on page 87 for a detailed description of multi-point cloning.

Custom Palettes and Layouts

Painter 5 lets you build your own custom palettes of tools, materials, and menu commands. Boost your productivity with immediate access to the features you use most. For more information, refer to "Creating Custom Palettes and Adding Items" on page 14.

You can also customize the **Controls palette: Brush tool** for individual variants. You can add almost any brush control feature to the palette so it's immediately available. For more information, refer to "Customizing the Controls Palette" on page 73.

Internet Support

Painter 5 works together with your www browser to give you better access to Fractal Design On-line. You can launch your browser from inside Painter 5 and get program help, learn what's new, and download new materials from Fractal Design. See setting preferences "Internet Preferences" on page 39.

And More

- You'll also find Painter 5 has added color management support with an Output Preview option. See "Using Output Preview" on page 343.

- Now you can save frame stacks as GIF animations for www display. See "Exporting Animated GIFs" on page 317.

- Painter 5 has a new Crop tool. See "The Crop Tool" on page 3.

These are some of the topics you'll want to review in this User Guide. You will also find many of these features described in the Painter 5 Tutorial.

Before You Begin

Please take a moment to complete your Painter 5 registration.

Registration entitles you to:

- Technical support

- Software updates

- Special pricing on upgrades

- Galleria, the Fractal Design catalog

- Special pricing on Fractal Design product promotions.

The Painter 5 CD-ROM Contents

At Fractal Design, we think of Painter as a design environment. In their studios, artists keep a variety of tools they use in their work—oils, pastels, different brushes, inks, paper and canvas. As they purchase new media or tools, they are able to employ new and different techniques in their artwork. Painter works in a similar fashion.

The Painter installer provides all the software tools you need to get started in your electronic studio. But once you get into Painter, you'll begin to want more "stuff." That's what the extra content on this CD-ROM is for.

The Painter 5 CD-ROM includes inspirational artwork from the winners of the Fractal Design art contest, an incredible collection of seamless patterns, funky brushes, new Image Hose nozzles, and a variety of Painter libraries that add functionality to your new copy of Painter 5. These libraries include paper textures, brush looks, portfolios, color sets and interfaces. The Painter 5 CD-ROM also includes photographs from PhotoDisc™, the leader in digital stock photography, some fun digital movies, plus much, much more.

Minimum System Requirements

To run Painter 5, you will need:

Macintosh

- Power Macintosh (68K not supported)

- System 7.5 or later

- 12 MB of application RAM (20+ MB recommended)

- 20 MB of hard disk space for installation

- CD-ROM drive

Windows

- Windows 95 or Windows NT 4.0 (Windows 3.1 not supported)

- 486DX, Pentium or faster processor

- 16 MB memory (32 MB for Windows NT)

- SVGA Video

- CD-ROM drive

Painter, like all image-editing and paint applications, enjoys lots of RAM, fast processors and speedy hard drives.

To assure that you are making best use of the memory you have available, follow the procedure for Setting Memory, later in this section.

Installing Painter 5

Fractal Design Painter is designed to be simple and straightforward to install. Complete the following steps to install Painter from the Painter 5 CD-ROM.

Macintosh

To install Painter 5, Macintosh:

1 Insert the Painter 5 CD-ROM into your computer.

2 Double-click the **Painter 5 Installer** application. This brings up the installer splash screen. Click **Continue** to continue the installation.

3 The README file for Painter 5 appears. You may read this information now or print it out. The README file is also saved on your hard disk when you install Painter 5. Click **Continue** to proceed.

4 A dialog appears in which you may select your installation options. Click **Install** to choose the **Easy Install** option, which will install everything including Painter 5, all supporting files and QuickTime™. If you wish only to install selected options, select **Custom Install** from the installation pop-up.

The **Custom Install** brings up a list of the custom installation options. Select the items to install by clicking the check-box next to each component. Click **Install** to install these items.

5 Follow the on-screen instructions to complete the installation procedure.

Older version of some INITs, CDEVs and drivers may be incompatible with Painter. If you have trouble running Painter, you might try using an INIT manager to restart your computer with all extensions turned off, with the exception of QuickTime and QuickTime Powerplug. If the trouble disappears, it means one of your extensions is incompatible with Painter 5.

Windows

To install Painter 5, Windows:

1 Insert the Painter 5 CD-ROM into your computer.

2 In Windows 95/NT, click the **Start** button, select **Run…**

3 Type the location of your CD-ROM drive followed by the word SETUP in the appropriate box in the Run dialog. For example, if your CD-ROM drive is drive D, type **D:\SETUP** in the command line.

4 The Painter 5 info screen appears. Click **Next** to continue to the next screen.

5 A dialog appears in which you may select your installation options. Click **Typical** to install the complete Painter 5 program and all supporting files. Click **Compact** to install the minimum file set needed to run Painter 5. Click **Custom** to install only selected options.

6 Follow the on-screen instructions to complete the installation procedure.

Starting Painter

Macintosh

Open the Painter 5 folder and double-click on the Painter 5 icon.

Windows

Click the **Start** button and selection **Programs▶ Fractal Design▶ Painter 5.**

Personalizing Your Software

The first time that you run Painter 5, you will be asked to enter your name and your Painter serial number. Your serial number can be found on the READ ME FIRST card in your Painter can, or on the Painter 5 CD-ROM jacket.

If you have upgraded from a previous version of Painter, you must use your original Painter serial number to personalize Painter 5. Your Painter serial number can always be found on the Painter

splash screen, which can be accessed by starting Painter and choosing "About Painter…" from the Apple menu (Macintosh) or from the Help menu (Windows). Painter 1 & 2 owners can also find a copy of their serial number in the back of their original User Guide. Painter 3 and 4 owners can find the serial number on the READ ME FIRST card that came with their original product.

Setting Memory and Printing Options

Macintosh

By default, Painter is set to use the smallest amount of memory that it can to run. If you have more memory in your system, you can significantly improve the performance of Painter 5 (particularly with large image files) by increasing the memory partition size.

To change Painter's memory partition, first determine how much memory you have available. If Painter is running, quit Painter, then switch to the Finder and choose About This Macintosh… from the Apple menu. You should set Painter's memory size to a number that is less than the Largest Unused Block size that is available when you have all the applications loaded that you normally use when you run Painter. Write this number down and subtract about 300 K from it (to allow room

for QuickTime). If you add new fonts or INITs to your system, this number may change.

To set Macintosh memory:

1 Find the **Painter** application icon in the Finder.

2 Click on the icon to highlight it, and then choose Finder's `File menu` `Get Info`.

3 Click in the **Preferred Size** field and enter this number.

4 Click in the Close box in the upper-left corner of this dialog to store this information back into the application.

Windows

Painter 5 has a preferences dialog that helps you optimize Painter's use of memory, printing speed and display quality. Choose `Edit menu` `Preferences` `Windows` to display memory and printing options.

Physical Memory Usage

For best performance, choose, **Maximum Memory** for Painter and run Painter with no other programs running in the background. Choosing **Half Memory** for Painter will allow Painter to run more efficiently with other Windows applications running at the same time.

Printing Options

Free Memory for Painter will increase printing speed by writing the active image to disk, increasing the amount of memory available for the print manager and the printer driver.

No Print Banding disables print banding for devices that support it. Disabling print banding may help some PostScript printers, but will hurt the performance of some bitmap printers, such as the Hewlett-Packard DeskJet printers. Most dot matrix printers will be faster with No Print Banding left unchecked in the dialog. If you experience problems printing in landscape orientation, you may have to turn off print banding in this dialog.

Display Options

If your video display driver is set to 16-bit colors, you may experience some color irregularities on your screen when using Painter. Checking **No Device Dependent Bitmaps** will correct this problem with most 16-bit color video displays. If you are not using 16-bit colors, this checkbox will have no effect on your system.

About Your User Guide

The Painter 5 User Guide has been organized into colored sections to orient you to the world of Painter. Each feature is assigned a country and these countries are color coded to the section they belong to. Each chapter opener shows you where you

are in the world. In the upper right corner, a simplified map shows you what other countries are related to this topic.

The first section, in orange, is an introduction. The second section, in red, describes painting with the brushes and customization. The third section, in fuschia, explains how to take advantage of Painter's special brushes. The fourth section, in purple, demonstrates Painter's many art materials. The fifth section, in indigo, describes Painter's new selections and masking features. The sixth section, in blue, contains information about floating objects. The seventh section, in light blue, explains Painter's image effects and movies features. The eighth section, in sea green contains information about Net Painter, productivity and output features. The Table of Contents, Welcome and Reference sections are not part of Painter's world; these reference sections are colored in light green.

When a referral appears, directing you to another chapter in the book, it is shown in the color of the particular section it belongs to.

Conventions

There are several conventions used to identify paths to certain tools and controls. The convention to a menu follows the rule of the `menu name` `menu item`. The convention to a palette follows the rule of the `palette name: subpalette name or`

palette item. The convention to a palette menu follows the rule of **palette name: palette menu▸ menu item**. The special rule for the **Controls** palette is **Controls Palette: particular tool**.

Modifier Keys

When a modifier key differs between the Macintosh and Windows platform, the Macintosh modifier is listed first followed by a slash and the Windows modifier key. **Option**/**Alt** means Macintosh users press the **Option** key and Windows users press the **Alt** key.

Getting Help

Painter offers a few ways to get help. From within Painter, you can access Painter's on-line help. You may also connect to the Fractal Design Web site. If you are connected to the internet, Painter can launch your Browser and automatically connect to Fractal Design's Technical Support Web pages.

Connecting to Our Web Site

Painter offers two ways to access the Fractal Design Web site.

To find out new information about Fractal Design products:

Select **Fractal Design On-line** from the **Apple** menu (Macintosh) or from the **Help** menu (Windows).

To go directly to Fractal Design Technical Support:

Select **On-line Support** from the **Help** menu.

On-Line Help

Detailed on-line help can be accessed from within Painter, using the Help menu. The help file contains a wealth of information from the Painter User Guide. With the Painter Help system, you can do keyword searches, and set bookmarks.

Macintosh

To use Painter's Help on the Macintosh:

1 Choose **Painter Help** from the **Help** menu (right-hand side of the menu bar) to display the help dialog.

2 Use the **Contents** button to view the table of contents, the first page of the file. Use the underlined hypertext to jump to a topic.

3 Use the **Go Back** button to retrace your steps. Use the **History** button to return to any previously-viewed screen.

4 The **Search** button lets you search by keyword or topic.

5 Drag a sticky note from the pad onto a specific page. You can type your own note on the sticky note.

Windows

To use Painter's Help in Windows 95:

1 Choose **Help Topics** from the Help menu to call up the Help program.

2 Use the **Contents** tab to view the table of contents. Select a "book" icon and then click **Open** to see the topics available. To view a topic, select it and click **Display**.

3 Use the **Help Topics** button to return to the table of contents. Use the **Back** button to retrace your steps.

4 The **Index** tab lets you search by keyword or topic.

Tool Tips

Tool Tips are displayed by default whenever you rest your cursor over an interface element. If you would like to turn them off, choose **Hide Tool Tips** from the **Help** menu.

Getting Technical Support

You will find the answers to most of your questions within the pages of this User Guide. If you need further assistance, you may contact Fractal Design's Technical Support in any of the following ways:

Phone: 408 430-4200 between the hours of 8am and 5pm, Pacific Standard Time

FAX: 408 438-9672

See the Troubleshooting Worksheet in the back of this User Guide.

Internet: To go directly to Fractal Design's Technical Support Web pages, select **On-line Support** from the **Help** menu.

Mail: Technical Support
c/o Fractal Design Corporation
P.O. Box 66959
Scotts Valley, CA 95067

Who is Fractal Design

Fractal Design is a major force in multi-platform graphic software, developing and marketing next generation products that unite traditional art and design techniques with digital technology. Fractal Design products are engineered to facilitate and extend the range of creativity for all design professionals and graphic hobbyists working on desktop computers.

Fractal Design's focus is maintained by three product values:

- Faithfully replicate Natural-Media® and real world looks in the digital medium.

- Facilitate and extend the range of creativity by allowing artists to do things they couldn't do before.

- Capture human expression and allow the artist's perspective and intent to show through.

For More Information

For more information about Fractal Design products, see our World Wide Web site on the Internet:

www: http://www.fractal.com/

Tools palette

To load new brush libraries click icons on the Shortcut to New Brushes Custom palette

Press to pop-up additional tools

Modify tool behavior using Control Palettes

Brushes palette

Tear off Art Material palettes

Brushes palette menu:
- ✓Pencils
- Eraser
- Water
- Chalk
- Charcoal
- Pens
- Image Hose
- Felt Pens
- Crayons
- Airbrush
- Liquid
- Brush
- Artists
- Cloners
- Water Color
- Load Library...

Tools palette (title): Tools

Controls :Brush — Size 1.6, Opacity 58%, Grain 44%, Draw Style ⦿Freehand ○Straight Lines

Shortcut to New Brushes

Brushes :Pencils — Brush Variant Control Nozzle Stroke — Pencils / 2B Pencil

Art Materials :Color — Color Paper Grad Pattern — ☐Clone Color

Art Materials :Pattern — Checkers — 128 Rows, 128 Columns — Pattern Type ⦿Rectangular ○Horizontal ○Vertical — Offset 0% — Scale 100%

Art Materials :Pattern menu:
- Capture Pattern...
- Define Pattern
- Make Fractal Pattern...
- Add Image To Library...
- Check Out Pattern
- Pattern Mover...

Pattern Mover — Change Name... — Delete — Current Pattern: — Painter Patterns — Close — Open... — New... — Quit

---

1

Painter's Interface

Tools and Palettes

Painter's interface is organized across a series of main menus and a set of floating palettes. Several features are also available in the frame of the document window.

In this chapter, you'll learn about the major features of the interface. You'll learn the names, basic functions and main controls for each of Painter's tools.

You'll learn about Painter's palettes—how to switch between subpalettes, open drawers, choose items and other common functions.

You'll also learn about libraries—collections of materials you can load into a palette drawer.

The Palettes

Painter has six main floating palettes. The **Tools** palette, **Brushes** palette, **Art Materials** palette, **Objects** palette, **Controls** palette and the **Color Set** palette. Each of these palettes is listed on the Window menu.
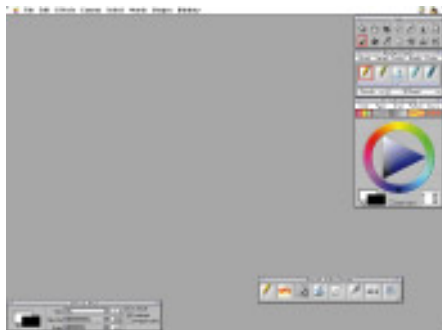
When you launch Painter, *the four main palettes are displayed by default—Tools, Brushes, Art Materials (Color) and Controls.*

The **Art Materials** and **Objects** palettes have subpalettes. You'll learn more about working with these in "Setting Palette Layout" on page 16. Painter has quite a few other palettes that you'll use less frequently.

You can use the Window menu or keyboard shortcuts to show/hide the main palettes:

Command-1/Ctrl+1	Tools
Command-2/Ctrl+2	Brushes
Command-3/Ctrl+3	Art Materials
Command-4/Ctrl+4	Objects
Command-5/Ctrl+5	Controls
Command-6/Ctrl+6	Color Set

The Tools Palette

Painter puts a variety of tools at your fingertips. In the **Tools** palette, you can find tools for mark making, filling with color, viewing and navigation, shape drawing and a variety of selection tools. If the **Tools** palette is not displayed on your screen, you can display it by choosing **Window menu▶ Tools**.

Some tools of similar function share a space on the **Tools** palette. The icon for only one of these tools will be visible at a time.

Any tool icon that has a triangle in the bottom right corner has one or more tool icons beneath it.

To select one of the other tools, press and hold on the icon that is visible. The tool icons "pop-up" under your cursor, so you can choose the tool you want.
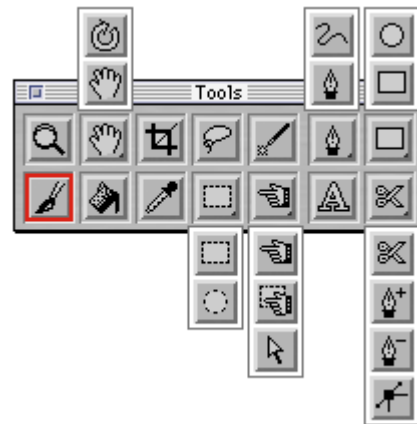
Some tools share a space on the Tools palette. Pop-up the icon to chose the tool.

A second palette, the **Controls** palette, contains options for the selected tool. The **Controls** palette updates as you select different tools to reveal the selected tool's options. If the **Controls** palette is not displayed on your screen, you can display it by choosing **Window menu▶ Controls**.

As each tool is described in the following paragraphs, you may want to select the tool and experiment with the Controls palette options.

Navigation and Utility Tools

The Magnifier Tool

The **Magnifier** tool allows you to magnify areas of an image when you are performing detailed work, or reduce them to get an overall view of an image. To zoom out, hold down the **Option**/**Alt** key and click.

You can access the **Magnifier** tool while any other tool is selected. Press **Command-Spacebar**/**Ctrl+Spacebar** and click to zoom in or **Command-Option-Spacebar**/ **Ctrl+Alt+Spacebar** to zoom out.

Double-click the Magnifier tool to set the zoom level to 100%.

You can also use the **Controls** palette to set the zoom level.
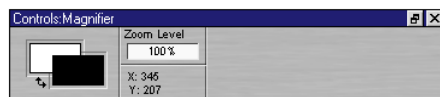
The Controls palette: Magnifier tool lets you set the zoom level.

The Grabber Tool

The **Grabber** tool gives you a quick way to scroll an image. You may also set the zoom level on the **Controls** palette when the Grabber tool is selected.

You can access the **Grabber** tool from any tool by holding down the **Spacebar**.

Double-click the Grabber tool to size your window to fit the screen.

The Controls palette: Grabber tool lets you set the zoom level.

The Rotate Page Tool

The **Rotate Page** tool lets you rotate an image window to accommodate the way you draw naturally. Click once with the **Rotate Page** tool to return to normal orientation.

Holding down the **Shift** key while rotating, constrains the rotation in 90° increments.

You may also set the zoom level on the **Controls** palette when the Rotate Page tool is selected.

The Controls palette: Rotate Page tool displays the rotation angle.

The Crop Tool

The **Crop** tool lets you remove unwanted edges from the image. Drag in the image to describe the rectangular area you want to keep. You can adjust the rectangle by dragging a corner or any of its edges. Use **Shift-drag** to constrain the selection to a square.

The **Controls** palette shows technical information on the size and location of the cropping rectangle. You can use the **Aspect Ratio** option to constrain the rectangle to a set aspect ratio. When you're ready to execute the crop, click inside the rectangle.
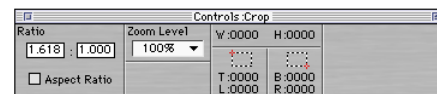
The Controls palette: Crop tool lets you set the constraining aspect ratio.

Tools that Work with Color

The Brush Tool

The **Brush** tool is used to paint strokes on the canvas or a floater. You can set opacity, grain, and drawing style (**Freehand** or **Straight Lines**) in the **Controls** palette.

In Straight Lines mode, hold the **Option-Shift**/**Alt+Shift** keys to constrain lines to 0, 45 and 90˚ angles.

The **Brush** tool represents a category of marking tools. Within the Brush category are pencils, pens, chalk, an airbrush, oil paints, water colors and more. You'll choose specific brushes from the **Brushes** palette. Double-click the Brush tool to open the Brushes palette. For more information on the Brush tool, refer to Chapter 3, "Painting."

The **Controls** palette can be use to set the brush size, opacity and the grain.
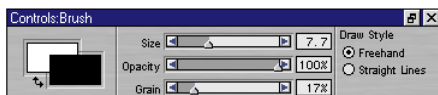
The Controls palette: Brush tool lets you set the brush size, opacity and grain.

The Paint Bucket Tool

The **Paint Bucket** tool lets you fill an area. The **Controls** palette shows choices for what area to fill and what to fill it with. The **Tolerance** and color **Feather** sliders let you control the extent of fill and opacity in neighboring areas. You may also choose to anti-alias your fill.

Drag with the **Paint Bucket** tool to constrain the fill to a rectangle.

Double-click the **Paint Bucket** tool to specify what color in the image to lock-out of your fill. For more information on the Paint Bucket tool, refer to and .
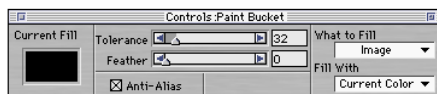
The Controls palette: Paint Bucket tool lets you set what to fill and what to fill with.

The Dropper Tool

The **Dropper** tool lets you pick up a color from an existing image for use elsewhere. The **Controls** palette shows you values for the color. When you select a color with the **Dropper** tool, that color becomes the current color on the **Color** palette.

You can access the **Dropper** tool from almost any other tool by pressing the **Command**/**Ctrl** key.
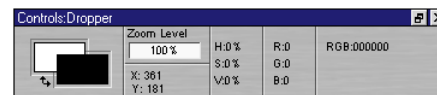
The Controls palette: Dropper tool displays the currently selected color.

The Selection Tools

The Rectangular Selection Tool

The **Rectangular Selection** tool allows you to create rectangular selections.

The Oval Selection Tool

The **Oval Selection** tool allows you to create oval selections.

When you create a selection, the coordinates are displayed in the **Controls** palette. Hold the **Shift** key and drag to create perfect squares and circles.
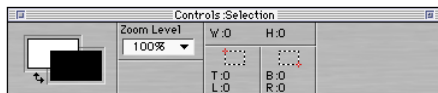
The Controls palette: Oval Selection tool displays the size of the oval selection.

The Lasso Tool

The **Lasso** tool lets you draw a freehand selection. When you let up, Painter closes the path and makes it the selection.

The Controls palette: Lasso tool lets you set the zoom level.

You can add to or subtract from a selection using the **Rectangle**, **Oval**, or **Lasso** selection tools. Use the **Shift** key to add to selection. Press **Command**/**Ctrl** to subtract from selection.

The Magic Wand Tool

The **Magic Wand** tool lets you click or drag in the image to select an area of similar color. In the **Controls** palette, the **Tolerance** and color **Feather** sliders control the extent and feathering of the selection into adjacent colors. The **Controls** palette lets you choose whether the Magic Wand creates a **Selection** or **User Mask**. You may also set the **Anti-alias** option.

The Controls palette: Magic Wand tool lets you set the tolerance, feather, and destination.

The Adjuster Tools

The Adjuster Tool

The **Adjuster** tool allows you to select, move and manipulate floaters and shapes. The **Controls** palette lets you change opacity and choose compositing methods.
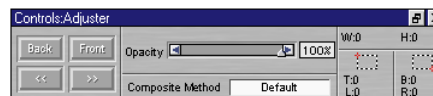
The Controls palette: Adjuster tool lets you set opacity and compositing methods.

The Selection Adjuster Tool

The **Selection Adjuster** tool lets you select, move, and manipulate selections created with the **Rectangular**, **Oval** and **Lasso** selection tools and those converted from Shapes.

The Controls palette: Selection Adjuster tool displays the size of the selection area.

The Shape Selection Tool

The **Shape Selection** tool is for editing Bézier curves (Shape paths). The **Shape Selection** tool allows you to select and move anchor points and adjust their control handles.

The Controls palette: Shape Selection tool displays the Zoom Level and current colors.

The Shape Tools

All shapes are created with Bézier curves. Once created, Shapes are displayed in the **Objects: Floater List palette**.

The Text Tool

The **Text** tool creates text shapes. Use the **Controls** palette to choose a font, point size and set tracking.

The Controls palette: Text tool lets you set the font, point size and tracking.

The Shape Design Tools

The **Pen** tool and the **Quick Curve** tool are used to draw shapes.

The Pen Tool

The **Pen** tool lets you create straight lines and curves in shape objects. Click and click-drag to create polygonal objects.

The Quick Curve Tool

The **Quick Curve** tool lets you create shape paths by drawing freehand curves.

In the **Controls** palette, the Close button joins the endpoints of the shape path. You may also choose to convert it to a selection.

The Controls palette: Shape Design tools lets you close the endpoint of the path.

The Shape Objects Tools

The **Shapes Objects** tools create rectangular or oval shapes.

The Rectangular Shape Tool

The **Rectangular Shape** tool allows you to create rectangular shape objects.

The Oval Shape Tool

The **Oval Shape** tool allows you to create oval shape objects.

Press the **Shift** key to constrain to perfect squares or circles.

When you create a shape, the coordinates are displayed in the **Controls** palette.

The Controls palette: Shape Objects tools displays the size of the oval.

The Shape Edit Tools

The **Shape Edit** tools allow you to manipulate existing shapes.

The Controls palette: Shape Edit tools lets you set the zoom level.

The Scissors Tool

The **Scissors** tool allows you to cut an open or closed segment. If the segment is closed, once you click on a line or point to cut the path, the path becomes open.

The Add Point Tool

The **Add Point** tool allows you to create a new anchor point. To add a point, click on a line segment.

The Remove Point Tool

The **Remove Point** tool allows you to remove an anchor point from a shape path. Click on a point to remove it.

The Convert Point Tool

The **Convert Point** tool allows you to convert between smooth and corner anchor points. Click and drag on a point to convert it.

Using Palettes and Getting into Drawers

Rearranging Palettes

You can drag a palette to any location that's convenient for your work. You can also stack palettes together to save space. When palettes are moved in close proximity, they will snap together.

Painter saves your palette arrangement, (including locked items) so that it appears as you left it the next time you start the program.

Note: For more control over palette arrangement, refer to .

Showing and Hiding Palettes

You can hide a single palette by clicking the close box. You can display a palette by choosing its name from the Window menu or using the key combination shown on the Window menu.

To hide all the palettes, choose **Window menu▸ Hide Palettes** or press **Command-H/Ctrl+H**. Choose **Window menu▸ Show Palettes** or press **Command-H/Ctrl+H** again to redisplay all the palettes that were on the screen.

Set up your palettes so you can find and identify controls more effectively. Make sure that open palettes don't overlap other palettes you need. For example, the **Color** palette should never covered by another expanded palette.

Subpalettes

Both the **Art Materials** and **Objects** palettes have subpalettes. The subpalettes are divisions of the main palette. Color, Paper, Grad, Pattern and Weave are the Art Materials subpalettes.
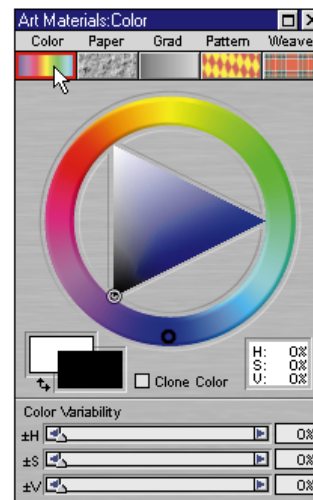
Click the icon for the subpalette you want to use.

Only one subpalette is displayed in the main palette at a time.

To switch between subpalettes: Click the icon for the subpalette you want. The chosen subpalette fills the main palette.
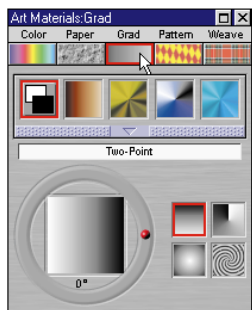
Click the icon to view another subpalette.

Collapsing and Expanding

Both the **Art Materials** and the **Objects** palettes have two states—collapsed to save space and expanded to give you access to their materials.

To collapse the palette: Click the icon for the current palette.

To expand the palette: Click the icon for the current palette.

To toggle the state of the palette, click the same icon again.

Tearing Off Palettes

There are times when you'll want to work with subpalettes that usually aren't available at the same time. For example, you might want to work simultaneously with the **Color** and **Paper** subpalettes.

To tear off a palette: Drag the icon off the main palette. The palette pops open where you drop it.

When you no longer need the palette, just click the close box.
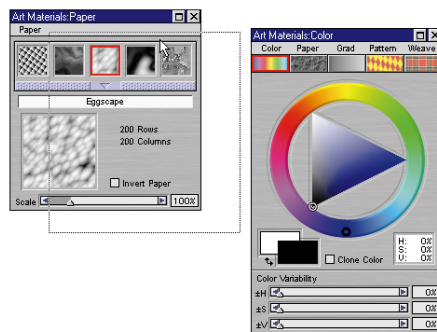
Drag a palette off the main palette to view subpalettes side-by-side. A dotted rectangle shows where the palette will appear when you let up on your mouse or stylus.

You can't tear off the current palette because one palette must remain (displayed) in the main palette. If you want to tear off the current palette, select a different palette first.

Viewing Additional Palette Controls

Many of Painter's palettes have additional controls that can be displayed for use or hidden to save space. If you have opened a subpalette, you can expand it by clicking the grow box. For example, the **Color** palette can be expanded to display the **Color Variability** sliders. Click the grow box again to hide them.
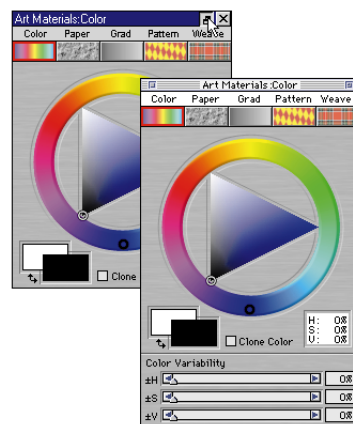
Click in the grow box to expand the palette.

More options and controls are found in the palette menus. In previous versions of Painter, some of these controls were buttons on the palettes. If you wish to convert these menu items into palette buttons, refer to "Creating Custom Palettes and Adding Items" on page 14.
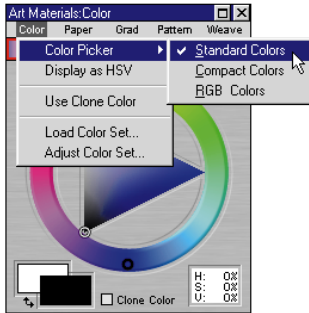
Pull down menus at the top of palettes offer additional options.

Using Items in Palettes

Several palettes use icons to represent the items they contain. The **Brushes**, **Paper**, **Grads**, **Patterns**, **Weaves**, **Nozzles, Floaters** and **Selection Portfolios** and **Script** palettes fall into this category. In addition to the icons, a Library pop-up menu lists the items in the palette, including those inside the drawer.

The last item in the Library pop-up is titled **Load Library**. This item lets you retrieve a new collection of items to fill the palette. Using libraries is covered in "Libraries and Movers" on page 10.

You can select an item by clicking its icon or by choosing its name from the Library pop-up. A red border appears on the icon for the selected item.

Click an item to select it.

Using Palette Drawers

You can open the drawer of a main palette or subpalette to see the other items inside the drawer. The pushbar indicates which palettes or subpalettes have drawers.

Storing items in closed drawers gives you more screen space. You will keep items on the drawer front that you use most often and retrieve other items when you need them. For example, you would keep your favorite paper textures on the front of the **Paper** drawer. You can open the drawer to retrieve a paper texture you use rarely.

To retrieve items from inside a drawer, open the drawer by clicking the pushbar. (A down arrow on the pushbar means the drawer can be opened). You can click

anywhere on the pushbar to open and close a drawer. There are two options for retrieving items from drawers.
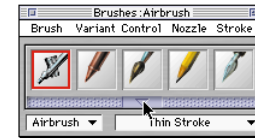
Clicking the pushbar opens the drawer.

To take items out of a drawer by clicking:

Open the drawer and click the item you want to use.

The item will move to the front of the drawer, outlined in red to show that it is selected. Painter automatically puts it in the place of the least recently used item.

Items that are already on the front of the drawer are ghosted inside the drawer. When you put an item away, it goes back to the same location so that you can always find it easily.

To take items out of a drawer by dragging:

Once the drawer is open, you can drag items out of the drawer to a specific position on the drawer front.

If you want to rearrange an icon's position on the drawer front, first it must return to the inside of the drawer. Replace it with another icon to move it inside the drawer. Then you can drag it from the drawer into the desired position on the drawer front.

Locking Items on the Drawer Front

You can arrange the items you use most frequently on the drawer front and lock them in place to make your own standard tool set. When an item is locked, Painter will not put another item in its place, even when the locked item is the least recently used. You will want to lock your favorite tools to the front of the drawer so they are always there when you need them.
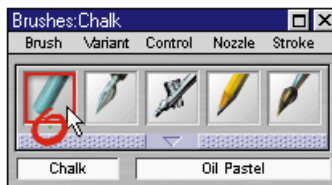
Hold down on an icon until a small green light appears signifying that the icon is locked on the drawer front.

To lock items in place:

1 Drag each item out of the drawer to where you want it on the drawer front.

2 Click and hold on its icon until a tiny green light appears under the icon. When you let go, the light stays on to show that the item is locked.

The item stays locked until you unlock it by holding down the icon again until the green light goes off.

Painter lets you lock all but one item on any drawer front (one item must remain unlocked to allow a space for any new item you might select).

Libraries and Movers

What are Libraries

A library is a saved collection of similar tools that can be loaded into a palette. For example, Painter's built-in brushes (and their variants) are contained in the default brushes library, which is loaded when you launch Painter. You'll find more brush libraries in the Painter folder. As you customize brushes and other resources, you can save them into you own libraries.

Libraries are available for paper textures, patterns, gradations, weaves, brushes, brush looks, nozzles, floaters, selections, lighting, and scripts. You may have any number of libraries, but only one (of each type) will be open at a time. When you want other tools, you can load the alternate libraries.

Libraries allow you to extend Painter's tools and resources, without overloading the palette drawers.

The methods for working with all libraries are the same. You can create new libraries, add resources, and move items between libraries.

It's a good idea to limit the number of resources in a library. This makes it easier to find a particular tool and helps Painter manage memory.

Brushes are loaded into memory when you launch Painter, so adding brushes to the default brush library increases Painter's need for RAM. If you are working close to the memory threshold, you'll want to organize new brushes into secondary libraries. When you want a different brush set, switch libraries. This will help Painter be more efficient with memory.

Adding Resources to the Current Library

As you are working with Painter and create new resources, you can save them to the current library. The command for adding a resource depends on its type. In some cases, you click a Save button. In others, you choose a menu command. And in the case of floaters, you drag them from the image into the library palette.

The method of adding a particular resource to the library is described in the section on customizing that resource.

Loading Alternate Libraries

When you want to use the resources of a different library, you can load it.

To switch libraries:

1 Display the palette for the resource you want to work with, for example, Patterns.

2 Choose **[Patterns]** **Library** **pop-up**▶ **Load** **Library**. Painter opens the **Load Library** dialog.
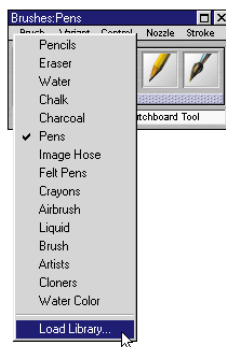
To load a new library, choose Load Library from the list of resources for the current library.

3 Use the directory window on the left to locate and select a saved library. On Macintosh, the panel to the right displays the icons for the contents of the selected library.

4 Select a library, then click **Open** or **OK**. Painter loads the resources from that library into the palette.

When you save a resource, Painter puts it in the current library. If this is not where you want it, you should switch libraries before saving the resource. You can move items between libraries, but switching libraries before saving the resource will spare you that step.

Browse the Web to Download Libraries

The **Browse Web** button in the Load Library dialog lets you launch your Web browser and search for libraries at Fractal Design's Web site

The browser makes it easy to download the resource over the internet and load it into Painter.

Using your browser, you can download a particular Painter resource by clicking its link. Your browser handles the transfer of the file to your local disk.

When a Painter resource finishes copying to your disk, your browser should hand it over to Painter—if necessary, launching the program. Painter loads the resource automatically. You can choose and use it right away.

Some resource files may be compressed. Compressed files are smaller and, therefore, transfer faster over the network. Your browser should deliver these compressed files to your decompression utility, which expand them to their natural state (as Painter resource files). In this case, Painter won't load the resources automatically. The files sit where the decompression utility put them until you load them manually.

Customizing Libraries

The tools for creating libraries and managing their contents are contained in the Movers. A Mover is provided on the palette menu for each resource supported by libraries—papers, patterns, gradations, weaves, brushes, brush looks, nozzles, paths, floaters and scripts. The Lighting

The Mover for the Apply Lighting Effect is available with **Command-Shift-L/Ctrl+Shift+L**.

To open the Brush Mover, for example, choose **Brushes palette: Brush menu▶ Brush Mover**.

The features of working with Movers are described below. When you have finished working in the mover, click **Quit**.
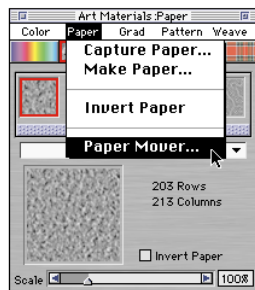
Use the Paper Mover command to customize your paper libraries. Each resource type has a mover. Most movers are located under a palette menu.

Creating a New Library

To create a new library:

1 Open the Mover for the resource type you want.

2 Click **New**. Painter prompts you to name the new library.

3 Enter a descriptive name and click **Save** or **OK**.

It's a good idea to save libraries in the same place. This makes them easy to locate and load when you want them.

The new library's name appears on the right-hand side of the Mover window. The area above the name is blank because this new library is empty. To put things in it, you can move them from other libraries.

Moving Items Between Libraries

Movers copy resources from the library open on one side of the window to the library open on the other side.

When you open a Mover, the resources of the current library are listed on the left. Often, this is the library you'll want to move from. If not, you can open a different library as the source. Click **Close** to close this library. Then click **Open** and select a different library file.

The destination library must be open on the other side. If you just created a new library, it will be open. If not, you may open an existing library. Click **Open** and select a library file.

When the source library is open on one side and the destination library is open on the other, you are ready to move resources.

To copy an item between libraries:

Drag the item you want to move from the source to the destination library.

Use the Mover dialog to move items between libraries.

Modifying a Library

If you want to delete a resource from a library, you may—but be careful. If you remove one of Painter's default brushes by mistake, the only way to retrieve it is to reinstall Painter. When you reinstall Painter, you'll lose any of the custom resources you've created and saved into the default libraries. To avoid losing libraries at installation, move the libraries to a different location.

To delete an item from a library:

1 Open the Mover for the resource category you want to modify.

2 Select the item you want delete.

3 Press the **Delete** button in the Mover dialog.

Note: With additions and deletions, over time library file sizes are compounded. For best results, save new items to new libraries.

Renaming Items

To change the name of an item:

1 Open the Mover for the resource category you want to modify.

2 Double-click the icon of the item. (You may also click once to select the item, then click **Change Name**.)

3 In the Change Name dialog, enter the new name and click **OK**.

Changing Brush Icons

Working with brushes, you have the additional option of replacing the icon used on the **Brushes** palette.

To change a brush icon:

1 Create artwork for the brush icon. Use the **Rectangular Selection** tool to select the image.

2 Open the **Brush Mover**.

3 Select the brush icon whose picture you want to change.

4 Click **Change Picture**. Painter shows the change that you are proposing.

5 If you're sure you want to change the picture, click **OK**.

Deleting a Library

To delete an entire library, delete the file from the Desktop (Macintosh), or Windows® 95 Explorer (Windows). In Windows 95, you may also drag the file to the Recycle Bin. Be careful not to delete Painter's default libraries. Painter needs them to start up.

Customizing the Interface

Painter's menus and palettes organize features logically and for convenient access. But everyone has a different working style, and the default interface might not be ideal for your specific needs.
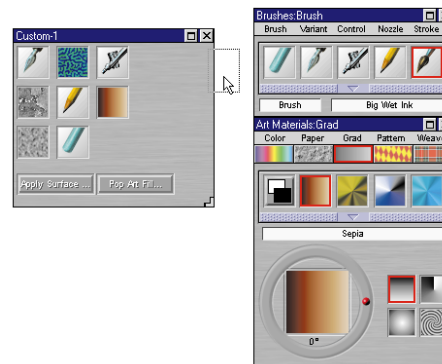
Custom palettes help you organize material for specific needs.

To give everyone the freedom to work in their own style, Painter provides tear-off tools and menu commands. You can create your own custom palettes that contain exactly the features you want. On the custom palette, the features are immediately available. You can choose them with a single click.

You can put any art material, brush variant, brush look, script, plug-in floater or menu command on a custom palette.

You might want to create special palettes for a particular project or method of working that you use frequently. You can create a whole series of palettes and switch between them as you change projects or work methods.

You might create a watercolor palette with the brush variants you use often and your favorite paper textures.

You can create as many custom palettes as you like. Painter saves them from session to session, so it's easy to get back to work.

Tools from the main **Tools** palette are not permitted on custom palettes.

The item that appears on the custom palette is a reference (alias) to the original. This means that if you change the original-for example, modifying and saving a brush variant-the custom palette button loads the new version. On the other hand, if you delete the original, Painter won't be able to load it.

Creating Custom Palettes and Adding Items

Tearing Off to Create a New Palette

If the item you want is represented in a palette with an icon, you can create a new palette by dragging the icon out of the palette. This works for art materials (**Paper Textures**, **Gradations**, **Patterns** and **Weaves**), brush variants, nozzles, brush looks and scripts.

To create a new custom palette by dragging an icon:

1 Drag the icon out of its home palette. For a brush variant, choose the variant, then drag the brush icon.
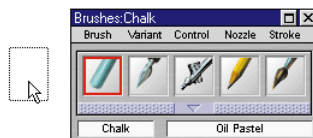
Drag a tool out of a palette to create a custom palette.

2 When you release, Painter creates the custom palette. It contains an icon for the item you dragged out.

Brush variants use the brush icon. If you have several variants of the same brush in a palette, they will all have the same icon. You might not remember which icon is for which brush. You can use the Tool Tips feature to find out the variant name. Enable Tool Tips by choosing **Help menu▸ Show Tool Tips**. All you have to do is move your mouse over a feature and the tip will appear.

Tool Tips help by identifying an item by name.

Adding to a Custom Palette

You'll want to add several items to each palette you create.

To add items to a custom palette:

1 You may want to drag the bottom right corner of the palette to make more room.

Note: If an icon is dropped on top of an existing icon, the palette will expand to the right automatically.

2 Locate the next item you wish to add.

3 Drag its icon to the location you want in the custom palette. You might want to arrange the icons vertically or horizontally, so you can keep the palette across the edge of your screen.

You can drag an item from one custom palette to another.

To rearrange the layout in a custom palette:

Hold down **Control-Shift**/**Ctrl+Shift** and drag the icon or button where you want it.

To delete an item from a custom palette:

Hold down **Control-Shift-Option**/ **Control+Shift+Alt** and click the icon or button you want to delete.

Placing Menu Commands on a Palette

You can add a button for any of Painter's menu commands to a custom palette. You may add commands from the main menus or from the palette menus.

To place menu commands in a custom palette:

1 Choose **Window menu▸ Custom Palettes▸ Add Command**. Painter displays a dialog that lets you choose

whether you want to create a new custom palette or add the menu item to an existing custom palette.

If you want to start a new custom palette, select **New**.

2 If you want to add to an existing custom palette, choose the name of the Custom palette from the **Add to** pop-up.

3 Choose the menu item you want. The dialog displays the command as **Menu Item**.
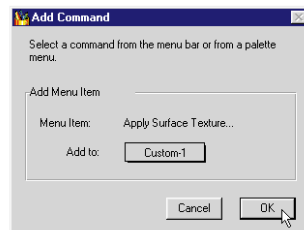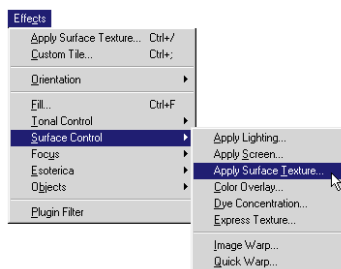
4 Click **OK** to close the **Add Command** dialog.

The custom palette now contains a button for the chosen menu command.
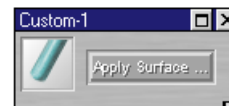
Using Custom Palettes

Custom palettes behave very much like Painter's standard palettes. You can move them around by dragging the title bar. You can resize them, but not smaller than the contents require. You can hide them by clicking the close box.

You may create as many custom palettes as you like. However, you probably won't want to use them all at once. You can close a palette to get it out of the way.

To show a hidden custom palette:

Choose **Window menu▸ Custom Palette▸ your palette name**.

Managing Custom Palettes

Painter names custom palettes arbitrarily. You'll probably want to rename the palettes you create.

Painter keeps your custom palettes from one session to the next. If you like creating custom palettes, the list might get unwieldy. You might want to clean house by removing obsolete custom palettes or those you don't use very often.

You can also save a custom palette to a file. If you save it to a file, you can remove it from Painter (when you clean house), then load it again at a later date.

The **Custom Palette Organizer** is the tool for managing your custom palettes.
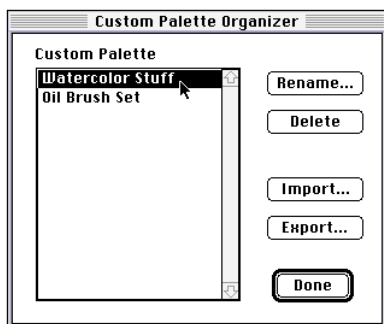
The Custom Palette Organizer can be used to organize your custom palettes.

To use the Organizer:

1 Choose **Window menu▸ Custom Palettes▸ Organizer**.

2 Use the Organizer to rename, save (export), load (import), and delete custom palettes. Each operation is described below.

3 When you are finished with the organizer, click **Done**.

To rename a custom palette:

1 From the list, select the palette you want, then click **Rename**.

2 Painter prompts you for the new name. Enter a name and click **OK**.

To remove a custom palette:

From the list, select the palette you want, then click **Delete**.

To save a custom palette:

1 From the list, select the palette you want, then click **Export**.

2 Painter displays a **Save** dialog so you can name the file and choose a location. It's a good idea to keep all your saved palettes in the same place.

To load a custom palette:

1 From the list, select the palette you want, then click **Import**.

2 Painter displays an **Open** dialog so you can choose the file where the custom palette is saved.

Painter comes with several saved palettes. You might want to load some of these.

Setting Palette Layout

When you quit Painter, the program saves the palette arrangement. The next time you run the program, Painter restores the palettes as they were.

You can open and close palettes individually. You can also control the display of the palette layout with **Window menu▸ Hide/Show Palettes**.

Painter offers some supporting features that can help with palette display.

Arranging Palettes

If you get the palettes arranged in a way that's convenient for your working style, you can save the layout. This will make it easy to return to this particular layout.

You may save several different layouts.

To save a layout:

1 Arrange your palettes the way you want them saved.

2 Choose **Window menu▸ Arrange Palettes▸ Save Layout**.

3 Painter prompts you to name the new palette layout. Enter a name and click **OK**.

To use a saved layout:

Choose **Window menu▶ Arrange Palettes▶ name of layout**. Painter restores the saved palette layout.

For example, **Window menu▶ Arrange Palettes▶ Default** immediately returns the palettes to the default palette layout.

To delete a saved layout:

You might decide you want to get rid of a saved palette layout,

1 Choose **Window menu▶ Arrange Palettes▶ Delete Layout**.

Painter opens a dialog listing all saved layouts.

2 From the list, select the layout you want to get rid of. Click **Delete**.

1

Floater

Floater Mask

Shapes

Selection

Canvas

Tracing Paper

Grid

Output Preview

Move images around the screen with the Grabber tool

Rotate the image for easier painting with the Rotate Page tool

Press the i for document info

Drawing Mode pop-up

CALIFORNIA US 66

LET'S GO!

Painter Basics @ 100%

Let's Go!

Rotate

Brushes • Cloning • Image Hose • Mosaics • Art Materials • Canvas • Output • Internet • Movies • Effects • Floaters • Shapes • Masks • Selections

2

Painter Basics

Working in Painter

In Painter, you work in a document, which is displayed in the document window. The document window offers navigation and guide features that will help you work.

As you develop imagery, you'll save your document to a file. Painter's native file format is RIFF (RIF in Windows), but the program supports numerous other formats for saving and opening files and offers other methods of import and export.

Every artist works in a unique way, and every computer system has its own configuration of memory, disks, printers and accessories. Painter Preferences let you customize the program for your own work style and optimum performance on your particular system.

What's in this chapter:

- Creating a new document—size, resolution and paper color.

- Navigating in a document—zooming, panning and rotating the window.

- Using special references provided by the document window—rulers, guides and the grid overlay.

- Saving files in RIFF and other formats— PICT, TIFF, JPEG, GIF, BMP, PCX, TGA, Photoshop.

- Opening existing files.

  Painter also helps you develop animation and effects in video. For information on opening motion graphics files— QuickTime, AVI and numbered frames, refer to "Opening an Existing Movie" on page 301. For information on saving, refer to "Saving and Exporting Painter Movies" on page 312.

- Setting your program preferences— including the default scratch disk, stylus pressure sensitivity, additional raster plug-ins and integration with your Web browser.

Creating a New Document

When you create a new document, you set the picture width and height, as well as the resolution, paper color, and picture type (Image or Movie). The resolution you choose will depend mainly on your output device.

Create a new document by choosing **File menu▸ New**. The **New Picture** dialog appears.

Canvas Size

The Canvas Size shows how much RAM the document requires. The saved size of the document is roughly one-half to one-fourth of this number, depending on the number of colors used. A document with fewer colors or more white space can compress more than a document filled with many colors.
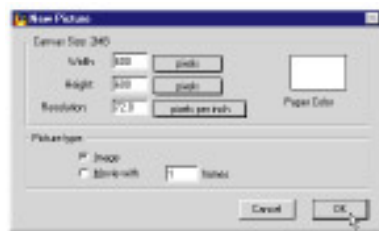
Use the New Picture dialog to set your image size, paper color, resolution and picture type.

Setting Width and Height

When you begin a new document, the width field is highlighted in the dialog. You can use the **Tab** key to move from field to field.

Choosing a Unit of Measurement

The default settings are in pixels. You can change the measuring units by using the pop-up menu. Choose from pixels, inches, centimeters, points, picas and columns. Columns are two-inch columns, and you can indicate how many columns wide and tall you'd like your image to be.

To set the width and height for a new document, enter a value for **Width** and a value for **Height** in the dialog.

Setting Resolution

Resolution, in general, refers to the number of dots per inch (dpi) that make up an image. In Painter, dpi is referred to as pixels per inch (ppi).When you enter a value for **Resolution,** there are three kinds of resolution to consider:

- The monitor's resolution, measured in pixels. Painter is preset to 72 pixels per inch. The resolution of your monitor may be different.

- The document's resolution. You can assign the resolution when an image is scanned or when one is created in Painter.

- The output device's resolution, measured in dpi, and, in the case of halftones, lines per inch (lpi). Output-device resolutions vary depending on the press and paper you're printing on. Generally, a photograph to be printed on glossy magazine stock will be output at a crisp 150 lpi, and at 85 lpi for more porous, and therefore more forgiving, newspaper stock.

In the New Picture dialog, setting the document's pixels per inch is the same as setting its dpi. The default resolution setting of 72 pixels per inch means that your document's dpi will also be 72. The image on-screen at 100% is the size it will be when it's output. On most printers, 72 dpi renders a coarse image, so you may want to choose a higher resolution value.

If you are using a personal laser printer, set your document size in inches, centimeters, points or picas at the dpi specific to your printer. Your file will be output correctly, at the best resolution for your laser printer and at the proper size.

If you are using a commercial printer or a more sophisticated output device, the dimensions should always be set to the actual size it will appear in the printed piece. For the resolution, a good rule of thumb is to set your document's pixels per inch to twice the desired lpi. So when lpi is 150, the pixels per inch should be twice that, or 300; if the lpi is 85, the pixels per

inch should be 170. It's a good idea to check with your service bureau if you have questions about output-device resolution.

Resolution and Screen Appearance

Because Painter opens and displays an image at 72dpi, a 300dpi image will be displayed at four times its actual size. Each dot in the Painter image will occupy one pixel on your display. The display pixels are four times the size of your image's pixels. Put another way, at 300 pixels per inch, your document will be approximately a quarter of its on-screen size when printed. In this example, if you want to view the image at actual size, set the zoom level to 25%.

Keep in mind, if you leave the dimensions in pixels, and then change the pixels per inch (resolution), the actual printed size will be affected by the change. If you set your document size in inches, centimeters, points or picas and change resolution, the dimensions will not be affected by the change.

100% view displays the image at 72dpi. For example, if your document was created at 300dpi, it will display four times larger. In this example, to view the document at actual size, zoom out to 25%.

Setting Paper Color

You can choose the background paper color when you create a new document. This color will appear when you delete a filled area or use the eraser to remove color.

To set paper color when you create a new file:

1 Select **File menu▸ New**.

2 Click the **Paper Color** color chip. The system color picker appears.

3 Choose a color and click **OK**.

To change an existing paper color:

At some point in the course of a project, you may decide to change the paper color.

1 Select the color you want as the primary color.

2 Select **Canvas menu▸ Set Paper Color**. The paper color set to the current color.

3 To see the change, you will need to delete areas of the image or use the eraser brush to erase areas (do not use a bleach variant).
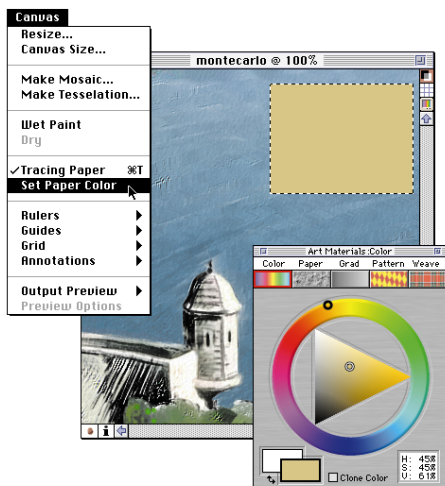
If you change the existing paper color, you will need to delete an area to view the change.

Paper color does not have anything to do with the Primary and Secondary Color rectangles on the **Color** palette. Painter's paper color can be compared to Photoshop's background color.

Opening Existing Documents

Painter will open files saved in any one of the following formats:

- RIFF. Fractal Design's own native format (RIF)

- TIFF (TIF)

- PICT (PCT)

- Photoshop formats (PSD). Painter converts layers to floaters and alpha channels to masks. For more information on Photoshop compatibility, refer to Appendix B, "Photoshop Compatibility."

- Bitmap (BMP)

- PC Paintbrush (PCX)

- Targa (TGA)

- GIF. Painter does not convert GIF animations to frame stacks.

- JPEG (JPG)

- Frame stacks (FRM). Painter animation files.

- Pyramid Images (PYR). Pyramid files are a multi-resolution file format useful in working on large images. They are usually used to record scripts at a lower resolution, then play them back at a higher resolution.

- Painter also opens QuickTime, Video for Windows (AVI) and numbered files. For more information, refer to "Opening an Existing Movie" on page 301 or "Importing Numbered Files as Movies" on page 315.

You can open documents from other graphics applications and use Painter to add brush strokes, tints, or paper textures. Or, you can clone these documents and re-create them in a different medium.

Painter can read files created with other programs only when they are saved in the RGB color format. If you try to open a file that was saved in another color format, an alert dialog tells you the file must be in RGB.

To open an existing document:

1 Choose **File menu▶ Open**. A standard **Open** dialog appears.

2 Locate the file you wish to open. If it was saved in Painter, the right-hand side of the dialog shows a thumbnail of the document.

For every document, regardless of the program in which it was created, Painter lists the file's dimensions, how much space it takes up in memory, and its file format.

Clicking the **Browse** button displays a dialog that shows thumbnails, dimensions, and file types for all the documents in the folder.

3 From the **Open** dialog or the **Browse** dialog, open the document by double-clicking the file name, or selecting the file name and clicking **Open**.

Browse in the Open dialog shows a thumbnail of images saved in Painter, and lists dimensions in pixels, size and its file format.

Scanning/Acquiring

You can use the **File menu▸ Acquire** to bring images into Painter by way of plug-in devices, for example a scanner. Painter's Illustrator EPS file import module is also located here.

Navigating Your Document

You can navigate through a document or image by changing the level of magnification (zooming in or out), scrolling to a different part of the image, or rotating

the page. By navigation, we mean moving around a document, changing views, or moving the page.

Zoom to Fit Screen

By default Painter opens a document at 100% view, but you can change the view to suit your needs. Choose **Window menu▸ Zoom to Fit Screen** and Painter will generate a view of the entire image to fit the size of your monitor.

You may also double-click the **Grabber** tool to zoom to fit screen.

Zooming In and Out

Zoom in and out with the **Magnifier** tool or by choosing a zoom level on the **Controls palette: Magnifier tool**.

To zoom in:

1 Click the **Magnifier** tool icon on the **Tools** palette. The cursor changes to a magnifier. The plus sign (+) on the magnifier indicates that you are increasing magnification—zooming in. The **Zoom Level** pop-up menu on the **Controls palette: Magnifier tool** shows the levels of magnification that increase each time you click with the magnifier.

Click with the Magnifier tool to view an image close-up.

2 Click the image. With each click, the image grows by the selected zoom level. The percentage that the document is magnified appears in the image window title bar next to the document name.

To zoom out:

1 Hold down the **Option**/**Ctrl+Alt** keys. The plus sign (+) on the **Magnifier** tool turns to a minus sign (-).

2 While holding down the **Option**/**Ctrl+Alt** keys, click the image. It shrinks by the selected zoom level.

To change the zoom level:

1 Click the **Zoom Level** pop-up menu on the **Controls palette: Magnifier tool**.

2 Choose the zoom factor you need. You can see anywhere from 8.3% to 1200% of your image in Painter.

You can use the **Magnifier** tool while another tool is selected. Hold down **Command-Spacebar/Ctrl+Spacebar** to zoom in and **Option-Command-Spacebar/Ctrl+Alt+Spacebar** to zoom out.

To magnify a specific area:

Click the **Magnifier** tool icon on the **Tools** palette. Move the cursor to the drawing window and drag a rectangle around the area you want to magnify.

The area inside the rectangle is magnified to the closest magnification level that fills the screen.

Double-click the **Magnifier** tool to set the zoom level to 100%.

Using the Grabber Tool

The **Grabber** tool gives you a quick way to scroll an image.

To scroll by using the Grabber tool:

1 Click the **Grabber** tool on the **Tools** palette. The cursor changes to the **Grabber** tool and the `Controls palette: Grabber tool` shows the zoom level. (You can change the zoom level from the **Controls** palette.)

2 Drag inside the image to pan or move your image.

Shortcuts: To center an image with the **Grabber** tool selected, click once in the image window. To use the **Grabber** tool while another tool is selected, hold down the **Spacebar**.

Rotating an Image

You can rotate an image on the screen to accommodate the way your arm, wrist, and hand draw naturally.

To rotate an image:

1 Choose the **Rotate Page** tool. (It's under the **Grabber** icon on the **Tools** palette.)

The cursor changes to a hand with a pointing finger and rotate page controls appear on the **Controls** palette.

2 Drag in the image to rotate the page. The arrow shows the angle. To constrain rotation to 90° angles, hold down the **Shift** key while rotating the page. The new rotation angle appears on the `Controls palette: Rotate Page tool`.

3 To return the image window to its normal position, select the **Rotate Page** tool and click once in the image window.

Shortcut: Hold down the **Option-Spacebar/Spacebar+Alt** keys to temporarily choose the Rotate Page tool. Continue to hold it down as you rotate the page with your stylus or mouse. To return the page to its original position, hold down the **Option-Spacebar/Spacebar+Alt** keys and click once in the image window. To constrain page rotation to 90° angles, hold down the **Option-Shift-Spacebar/Spacebar+Alt+Shift** keys while rotating the page.
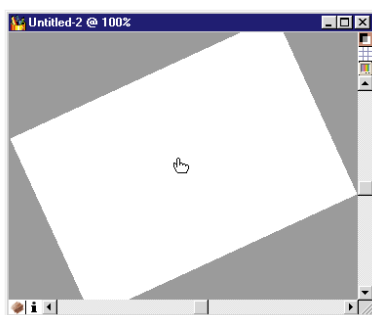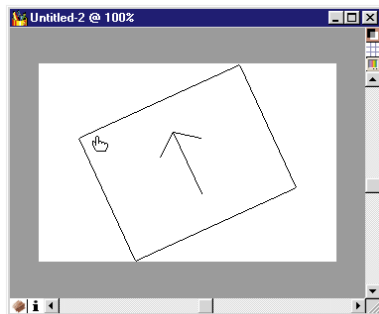
Rotate the page to accommodate the way you naturally draw.

Using Full-Screen Mode

Painter allows you to display your document window without scroll bars on a solid color background. You can set the color of the background in the Interface Preferences.
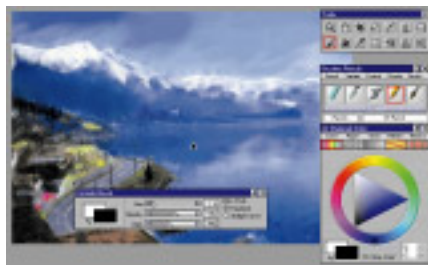
Full Screen Mode allows you to view your image without scroll bars.

To turn full-screen mode on and off:

1 Press **Command–M/Ctrl+M**. The image is centered on the screen without scroll bars.

2 Press **Command–M/Ctrl+M** again to return to its previous state, or choose **Window menu▸ Screen Mode Toggle**.

All Painter features (except the information button on the scroll bar) work when in the full–screen mode.

You can position the image window anywhere on–screen by holding down the **Spacebar** and dragging with your mouse or stylus.

Image Size Information

You can use the *i* (the international symbol for information) near the bottom left–hand corner of the image window to check image size.

To check image size and orientation:

1 Move the pointer to the *i* icon in the lower-left corner of the image window and hold down the mouse button.

The width, height, and resolution of the image is displayed.

The window also shows how your image fits on the page. Page size and orientation (landscape or portrait) are based on those designated in the **Page Setup** dialog. The non-printing area around the edge of the page is grayed.

If you change your image's resolution or dimensions by choosing **Canvas menu▸ Resize**, you can use the information window to see how the changes affect the way the image fits on the page.

2 Release the mouse button to close the information window.
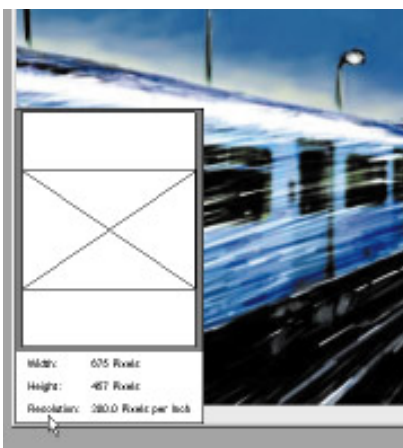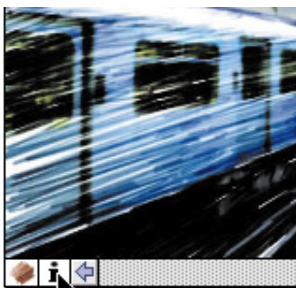
The image size pop-up contains your image's dimensions, resolution and file size. It also shows how your image fits on the currently selected printer paper size and orientation.

Changing Canvas Size

If you want the same image at a different scale, use **Canvas menu▶ Resize**. If you want more canvas to paint on, use **Canvas menu▶ Canvas Size**. If you want to crop the image, use the **Crop** tool.

To resize the canvas:

1 Choose **Canvas menu▶ Resize**.

Painter displays the **Resize** dialog. The dialog shows the current and new size, in terms of width, height and resolution.

2 Enter a new value for **width**, **height** or **resolution**. For more information on these values, refer to "Creating a New Document" on page 20.

3 The **Constrain File Size** option lets you choose how to deal with dimensions versus resolution.

When **Constrain File Size** is enabled, you can change the measurements (inches or centimeters) and pixels-per-inch together. The pixel count remains the same.

When **Constrain File Size** is disabled, you can change the measure (inches or centimeters) independently of the pixels-per-inch, and vice versa. The number of pixels in the image changes.

If you choose **Pixels** or **Percent** as the unit and enter a value, Painter automatically disables the **Constrain** option.

4 When you've set your new size, click **OK**

To change canvas size:

1 Choose **Canvas menu▶ Canvas Size**.

Painter displays the **Canvas Size** dialog, which has text fields to set the size adjustment for the top, left, bottom and right of the canvas.

2 In the **Adjust Size** fields, enter the number of pixels you want to add to that side of the canvas.

You can enter negative values to reduce the canvas size.

3 Click **OK**. Painter adds the canvas area you specified.

To crop the canvas:

1 Display the image at a scale where you can see all of it.

2 Choose the **Crop** tool.

3 Drag in the image to describe the rectangular area you want to keep. You can adjust the rectangle by dragging a corner or any of its edges.

If you want to constrain the cropping rectangle to a certain aspect ratio: in the **Controls** palette, enter values for the width and height aspect you want. Enable the **Aspect Ratio** check box.

The **Controls palette: Crop tool** shows the size and location of the cropping rectangle.

4 When you're ready to execute the crop, click inside the rectangle.

Productivity Features

Rulers

For assistance in laying out your images, Painter provides rulers and guides.

To display the rulers:

Choose **Canvas menu► Rulers► Show Rulers**.

To hide the rulers:

Choose **Canvas menu► Rulers► Hide Rulers**.

Ruler Options

To set the ruler units:

1 Choose **Canvas menu► Rulers► Ruler Options**. You may also hold down the **Option**/**Alt** key and click in the ruler to bring up the **Ruler Options** dialog.
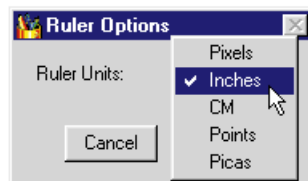
Use the Ruler Options dialog to set the ruler units.

2 Use the pop-up to choose the units you want: **Pixels**, **Inches**, **Centimeters**, **Points**, or **Picas**.

3 Click **OK**.

Snap to Ticks

Each mark in the ruler is called a tick. If you want the guides you create to land precisely on the tick marks, choose **Canvas menu► Rulers► Snap to Ruler Ticks**.

Changing the Origin

Normally, the origin (0, 0) is in the top left corner. Sometimes you might want to choose a different origin to assist in measuring between points.

To change the origin:

1 Drag from the box where the horizontal and vertical rulers meet down and right to the point in the document you want as the origin.

2 When you release the mouse button, the ruler will update to describe this point as the zero.

This applies to the ruler only—not to floater placement or other location features.

To restore the top, left corner as zero, double–click the box where the horizontal and vertical rulers meet.

Guides

Guides are non–printing lines that help you align objects, like shapes and floaters.

To create guides:

1 Show the rulers (**Canvas menu► Rulers► Show Rulers**). You must display the rulers to create guides.

2 Click in either the horizontal or vertical ruler to create a guide at that point. If you drag, instead of clicking, you can drag the guide to any point on the ruler.

After creating a guide, you can move it (by its triangular marker) to any point on the ruler.

Click on the ruler to create a guide.
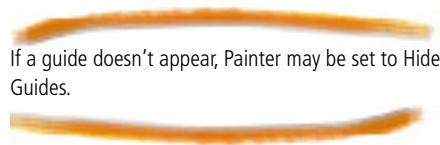
If a guide doesn't appear, Painter may be set to Hide Guides.

To remove a guide, drag its marker off the edge of the document.

Guide Options

Each guide has an options dialog that lets you move it to a particular point and change its color.

Double-click a guide marker. If you haven't created a guide, double-click anywhere in the ruler. Painter displays the **Guide Options** dialog.
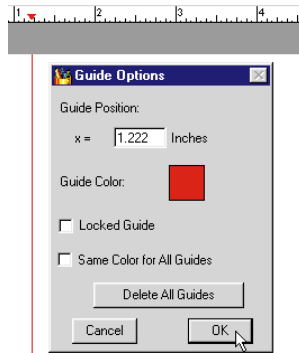
Use the Guide Options dialog to assign colors to guides.

The **Guide Position** value shows the current position of this guide. You can set the guide to a specific position by entering a value in the **Guide Position** field. The units are specified in the **Ruler Options** dialog.

By default, guides are created in black. You can change the guide's color by clicking the color chip and using the color picker to choose a color.

If you want all guides the same color, the **Same color for all guides** option should be enabled. Choosing this option will make all existing guides the current color. If this option is un-checked, you can create

guides of different colors. This might help if you have several guides near each other and want a reminder for which is which.

If you want to lock this guide, enable the **Locked Guide** option. This makes the guide "un-draggable". You'll need to open the guide's options dialog again to unlock it.

You can clear all guides by clicking the **Delete All Guides** button.

Hiding and Showing Guides

To display the guides: choose **Canvas menu▸ Guides▸ Show Guides**.

To hide the guides: choose **Canvas menu▸ Guides▸ Hide Guides**.

Snap to Guides

If you want drag and click operations to snap to the guides, choose **Canvas menu▸ Guides▸ Snap to Guides**.

This feature is enabled when the menu item has a check beside it. Choose it again to disable the feature.

The "snapping" occurs when the cursor (or edge) is within 6 pixels of the guide.

The following operations respect Snap to Guides:

- Dragging with the **Rectangular** and **Oval Selection** tools.
- Dragging with the **Crop** tool.
- Drawing straight lines with the **Brush** tool.

- Clicks made with the **Pen** tool.

- Clicking with the **Text** tool to create a text entry point.

- Clicking and dragging with the **Paint Bucket** tool and **Magnifier** tool.

- Dragging floaters, shapes, and selections. The edges of the floater rectangle and the selection rectangle for the shapes and selections snap to the guides. The cursor—wherever it might be in the object—also snaps to the guide.

- Dragging the handles of reference floaters, shapes, and selections to transform them.

- Dragging with the **Selection Adjuster** or **Adjuster** tool to create a selection marquee.

Using the Grid Overlay

Painter has a grid layer to help guide you when laying down brush strokes or creating shapes. To activate the grid, choose **Canvas menu▸ Grid▸ Show Grid**, or click the View Grid button on the right side of your image window. Your image now has a non-printing grid.

When you paint or draw with the grid turned on, you'll see your brush strokes at 50% opacity. When you turn off the grid, the strokes will be at 100% opacity. To have 100% opacity when the grid is turned on, choose the **Transparent Background** option under Grid options.

Snap to Grid

If you want drag and click operations to snap to the grid overlay, choose **Canvas menu▸ Grid▸ Snap to Grid**.

Grid Options

You can set up the grid by choosing **Canvas menu▸ Grid▸ Grid Options**.

Use the Grid Options dialog to set grid transparency.

You can tab between the following fields:

Grid Type

Choose a command from the pop-up menu to determine whether your grid will be rectangular, have just vertical or horizontal lines, or be made up of small dots.

Horizontal Spacing

Horizontal Spacing sets the distance between horizontal lines. The unit of measure can be in pixels, inches, centimeters, points, picas, columns, or percent. Each column is equivalent to

two-inches. Percent refers to the percentage of the image's width/height. For example, if you choose 10% for width and height in a 100 X 120 pixel image, the grid lines will appear every 10 pixels going across (vertical lines) and every 12 pixels going down (horizontal).
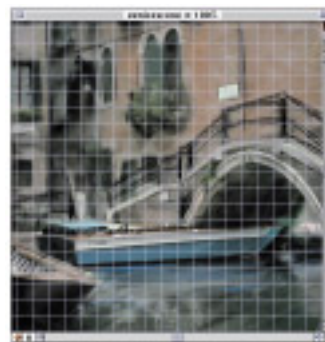
The Grid Overlay can be used as a guide.

Vertical Spacing

Vertical Spacing sets the distance between vertical lines.

Line Thickness

Line Thickness sets the width of grid lines.

Grid Color

Click the color square to change the color of the grid lines. Choose a color in the color picker, then click **OK**. The default color is a light blue.

Background

Click the color square to change the grid's background color. Choose a color in the color picker, then click **OK**. The default color is white.

Transparent Background

Click **Transparent Background** if you want the grid to be transparent so that your image will appear at 100% opacity when the grid is turned on.

If you want to use grid paper in a canvas image—not as a transparent overlay—use **Effects menu▸ Esoterica▸ Grid Paper**.

Drag and Drop Features

For both Macintosh and Windows, you can copy floating objects between Painter's documents by dragging from one window to the other. The object keeps its properties in the destination, i.e., shapes beget shapes and plug–in floaters beget plug–in floaters.

You can drag a selection directly. Painter floats it automatically.

Dragging Between Programs

Painter supports drag and drop between applications on Macintosh only. This can be a quick, convenient way to acquire or export imagery.

Note: Not all programs support drag and drop.

Dragging into Painter

Raster imagery you drag into a Painter document window becomes an image floater. You can drag a PICT file from the Finder to a Painter document. The PICT becomes an image floater.

You can drag files from Photoshop 4 directly into Painter and vice versa.

Dragging out of Painter

You can also drag floaters and shapes out of Painter—to another application or to the Finder. The exported imagery is in PICT format, supported by most applications. Painter will automatically rasterize a shape or plug–in floater (at its current settings) to become a PICT when you drag out one of these objects.

When you drag to your Desktop, Painter creates a PICT Clipping file.

Saving Documents

To name and save a document, choose **File menu▸ Save As**.
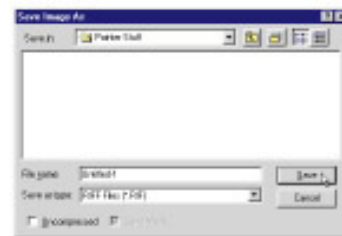
Use the Save As dialog to save Painter files to a variety of formats.

Use the pop–up menu for **Type** (Macintosh) or **Save As Type** (Win 95) to save your document in any of the formats Painter supports.

RIFF Format

When you work in Painter, you should always save in RIFF format. You can "Save As" finished work in other formats.

RIFF is Painter's native format, which retains special information on your document. A RIFF will maintain floating objects so you can return to the file to rearrange floaters and shapes. As long as you have a RIFF file of a Mosaic, you can

continue to edit, resize and render tiles at a higher resolution. A RIFF file will maintain the dynamic nature of plug-in floaters, so you can return to a file and adjust the settings.

RIFF lets you compress files and save disk space with a lossless compression method.

Select the RIFF format. Leave the **Uncompressed** option disabled if you want to minimize file size on your hard disk.

GIF File Format

Painter allows you to save documents in GIF file format. GIF is an 8 bit (or less) file format commonly used to display graphics on the Internet's World Wide Web (WWW).

When you save a file as a GIF, you can choose from 4 up to 256 colors. You can choose how your colors will be displayed and what part of your image will be transparent.

You will pick an Imaging Method to determine how your 24-bit Painter document will be converted to the limited number of colors that GIF uses. If you choose **Quantize to Nearest Color**, Painter will look at each pixel and will pick the nearest color. If you choose **Dither Colors**, Painter will apply a pattern to the colors

chosen to generate a more accurate, less banded result. Use the **Preview Data** button to see how the GIF file will look.

You can use the Preview button to preview your GIF options.

If you want your image to have transparency, click the checkbox for **Output Transparency**. Most programs that display GIF files support transparency, but for those that don't, you should specify the color of the "transparent" area. If your image will be displayed on the World Wide Web, click the radio button for **Background is WWW Gray**. You can also choose to use the background color of your WWW page by clicking the radio button for **Background is BG Color**.

For programs that support transparency, your selection (loaded mask) will determine which areas are transparent and which are not. The **Threshold** slider determines what selection (loaded mask) value becomes transparent. Use the **Preview Data** button to see how the **Threshold** slider is affecting the transparency of your image. Transparency is displayed in the preview window by a rectangular lattice. You may toggle

between the Preview window and your Save As GIF options to get exactly what you want.

For information on creating masks, refer to Chapter 9, "Selections and Masks."

Enable the checkbox for **Interlace GIF File** if your image will be displayed on a WWW page.

JPEG File Format

Painter supports the Joint–Photographic–Experts–Group (JPEG) file format. Because of its small file size and high quality, JPEG is commonly used to transmit files via modem. Unlike GIF, JPEG displays a full range of colors.
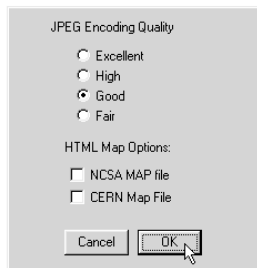
The JPEG dialog appears when saving an image to the JPEG format.

JPEG allows you to compress your file on a scale of Fair to Excellent, where quality is directly proportional to file size. These quality settings will let you achieve compression ratios of less than 10–to–1, to greater than 100–to–1. JPEG is a "lossy" file format, meaning that a decompressed JPEG file will not be pixel–for–pixel identical to the original. However, because the JPEG algorithm takes into account the sensitivity of the eye to different colors, the higher quality settings should achieve visually satisfying results.

You can assign URLs to floaters and placed images and then save the file in GIF or JPEG format to produce an image map. For more information, refer to the end of Chapter 11, "Floaters."

To save a file as a JPEG, choose **File menu▸ Save As** and select JPEG from the list of file types. Click the **Save** or **OK** button and the **JPEG Encoding Quality** dialog appears. **Excellent** will compress the least but will retain the most data. **Fair** will compress the most but will lose the most data.

It is best not to de–compress and re–compress a file multiple times. Although JPEG can compress and discard data that is not visible or obvious, the degradation of the data can affect the condition of your file. When a file has lost a significant amount of data, blocky patterns may appear in areas of the image. If you try to use Painter's Apply Surface Texture feature on a JPEG file, you may find it will accent the blocky patterns.

Photoshop File Format

Painter can save files in Photoshop formats (2.0 or later). Painter's Shapes are rasterized, floaters become layers and masks are placed in channels for optimum compatibility. For more information, refer to Appendix B, "Photoshop Compatibility."

Saving in EPS

Painter's EPS files conform to the Desktop Color Separation 2.0 format (EPS–DCS 5–file format). Although Painter saves files in EPS–DCS, it can't read EPS–DCS. If you plan to save an image in EPS–DCS, it's a good idea to save it in another format first so you will have a copy of it that you can reopen in Painter.

When you save an image as EPS-DCS when Output Preview is turned on, Painter uses the loaded ICC profile to prepare the separation files. For more information on Output Preview and color management, refer to Chapter 17, "Printing."

Although you can save your images as 5–file CMYK EPS separations, Painter can't open or edit CMYK files.

When you save a file in EPS–DCS, Painter opens the **EPS Options** dialog.
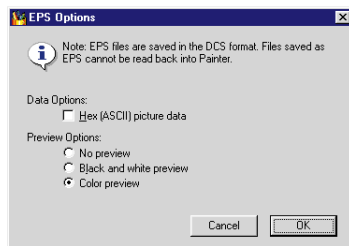
The EPS Options dialog appears when saving an image to the EPS format.

Hex (ASCII) Picture Data

This is just another way of storing PostScript information. Some page design programs require that this option be checked. The file sizes will be approximately twice as large when saved with this option.

Preview Options

The radio buttons under **Preview Options** tell Painter whether to save preview data and in what format. **No preview**, **Black and white preview**, or **Color preview**.

If you have an older laser printer, you may have to use the black and white preview to print these files on your laser printer. Although the preview or display is black and white, the color information remains intact.

Closing Files and Quitting

You can close the foremost document by clicking its close box, choosing **File menu▶ Close** or using the keyboard shortcut (**Command-W**/**Ctrl+W**).

If you have any unsaved changes, a dialog asks if you want to save changes. Click **Yes** to save your changes or **No** to discard them.

Exit Painter by choosing **File menu▶ Quit or Exit**.

Plug-ins

Painter supports plug–in architecture for Effects (Photoshop–compatible filters), plug–in brushes, plug–in floaters, Output Preview, and Acquire and Export modules. Fractal Design and other software developers may create plug–ins that you can add to Painter, extending its capabilities.

Such plug–in modules are available from standard locations on Painter's menus and palettes. However, the actual operation of these plug–ins is determined by the plug–in developer. You should refer to the documentation that comes with your plug–in modules for instructions on how they work.

If you are interested in developing Effects plug-in modules, Plug-in Brushes or Plug-in Floaters, visit the Fractal Design Web site for more information.

Filter Plug-ins

Filter plug-ins appear below Painter's built-in Effects in the Effects menu. These Filter plug-ins usually offer specialized effects for raster images. Plug-in filters operate the same way that Painter's Effects operate. If you have an active selection, the filter is applied to the selection. If you have no selection, the filter is applied to the entire image. If you have a floater selected, the filter is applied to the floater.

Raster plug-ins may be stored anywhere on your drive; however, you must identify the location to Painter before you can use them. For information on locating your filter plug-ins directory for Painter, refer to "Other Raster Plug-ins" on page 37.

Fractal Design has made a conscientious effort to maintain compatibility with as many third-party filters as possible. Some filters, however, may run in Photoshop, but not in Painter. Check with the filter developer for compatibility issues between their product and Painter. Please note that Painter is an RGB-based program: it cannot run filters that are specific to CMYK or Grayscale modes.

Plug-in Brushes

Plug-in brushes extend the power of Painter's **Brush** tool into new areas. Any new plug-in brushes you get should be placed in the **Plug-in Brushes** folder in the **Painter** folder.

You'll find detailed information on plug-in brushes in "Expandable Plug-in Brushes" on page 51.

Plug-in Floaters

Plug-in floaters create new, dynamic floating effects. Any new plug-in floaters you get should be placed in the **Other Plug-ins** folder in the **Painter** folder.

You'll find detailed information on plug-in floaters in Chapter 12, "Plug-in Floaters."

Acquire Plug-ins

Acquire plug-ins are available through the **File menu▶ Acquire** submenu. Acquire modules are usually to support external capture devices (scanners and frame-grabbers) or file formats that are not built into Painter. Painter's import feature for Adobe Illustrator files is an Acquire module that converts Adobe Illustrator EPS objects into Shapes. For more information on Shapes, refer to Chapter 10, "Shapes."

Export Plug-ins

Export modules are used to export image information, or to support special output devices. Many photo-realistic dye-sublimation printers include export modules because they provide better control over output quality than the standard print interface. Export modules are available through the **File menu▶ Export** submenu. If no Export modules are available, this menu will be grayed-out. In addition, the Export interface provides access to Painter's export to Adobe Illustrator file capabilities, which saves files in Adobe Illustrator format for import into most vector programs.

Setting Painter Preferences

Painter has several different preference dialogs: General, Brush Tracking, Function Keys, Interface, Other Raster Plug-ins, Windows, Undo, Shapes, and Internet.

Use the General Preferences dialog to customize your Painter application.

General Preferences

To display the general Painter preferences dialog, choose **Edit menu▶ Preferences▶ General**.

Cursor Setup

Painter gives you many choices for the appearance of your cursor. To choose whether the cursor will be a triangle or a single pixel, check the radio button next to **Drawing Cursor**. To determine the direction the cursor will point (depending on your design and whether you're left- or right-handed), click the appropriate button

in the circle above **Orientation**. To select a cursor color that will contrast with your working area and will therefore be clearly visible, click the appropriate rectangle above **Color**.

Setting the Default Libraries

Painter provides several libraries that contain many different brushes, paper grains, selections, floaters, and color sets, and you can create your own. By typing a file name in the text box next to **Brushes, Papers, Selections, Floaters, and Color Set**, you can designate which libraries will appear in drawers when you open Painter.

Choosing a Default Scratch Disk

To select the disk volume that Painter will put its temporary file on and will virtualize to, choose the volume name from the **Temp File Volume** pop-up menu.

Auto-Save Scripts

While you create an image, Painter automatically saves your commands in a new script. The scripts are saved in the **Objects palette: Script**. The **Auto-Save Scripts** preference governs how long scripts are saved before they are deleted.

Floater Pre-Feather

The Floater Pre-Feather box determines how much you can feather a floater. The default setting is 16 pixels. You can change this default to any number up to 50. The change takes effect the next time you launch Painter.

Cloning Preference

When you clone an image, Painter uses the color information from the original as you fill in your clone. If you would like Painter to display what part of the original you're cloning, check the box next to **Indicate clone source with cross hairs while cloning**.

Draw Zoomed-out Views Using Area-Averaging

When looking at an image at less than 100% view, screen draw is faster if you leave this option unchecked, and slower but more accurate if checked.

Display warning when Drawing Outside Selection

Checking this box enables the warning that appears when you draw outside a selection. The warning will not appear if this box is unchecked.

Show Commit Dialog when Converting to a Floater

Enable this checkbox if you want to reinstate the Commit dialog after you have selected the **Don't Ask Again** button in the **Commit** dialog.

Function Keys

Painter lets you assign commands to your keyboard function keys (the F-keys). This saves you time by giving you immediate keyboard access to your favorite commands. Using the **Shift** key with the function keys lets you double the number of commands you can use.

Note: Some keyboards don't have function keys.

To assign commands to function keys:

1 Choose **Edit menu▶ Preferences▶ Function Keys**.

2 Choose the Function key you want to use from the pop-up.

3 If you want to use the **Shift** key in combination, enable the **Shift** checkbox.

4 Current Function shows the command now assigned to this key.

5 Choose the command you want—either from a main menu or a palette menu. New Function shows the command you've chosen.

6 Click **Set** to assign this command to the selected key.

7 Repeat steps two through six for each key you want to set. When you're finished, click **Done**.

Brush Tracking—Setting Pressure Sensitivity

When you draw with traditional media, the amount of pressure you use with a tool determines how dense and how wide your strokes are. Using a pressure-sensitive stylus with Painter gives you this same kind of control. Each artist has a different strength or pressure level in a stroke. The **Brush Tracking** preference lets you adjust Painter to match your stroke strength. This is particularly useful for artists with a light touch. If a light stroke leaves no color on the canvas, you should use Brush Tracking to increase sensitivity.

You might also change brush tracking between phases of a project. You could use a light touch when sketching with a pencil brush variant, then set tracking for more pressure when you switch to an oil paint variant.

1 Display the **Brush Tracking** dialog, choose `Edit menu▶ Preferences▶ Brush Tracking`.

2 Drag in the scratch pad in a "normal" stroke. Use the pressure and speed you prefer when drawing or painting. For specific adjustments, you can move the sliders. When you're done, click **OK**.


Use the Brush Tracking dialog to customize how Painter responds to your stylus pressure and speed.

Brush tracking is not saved between sessions. You should set Brush Tracking each time you use Painter.

Interface

We've chosen colors and textures for the palettes that we think are aesthetically pleasing and very legible. However, you may want to experiment with your own palette colors and textures.

To change the appearance of Painter's interface, choose `Edit menu▶ Preferences▶ Interface`. The **Interface Preferences** dialog appears.
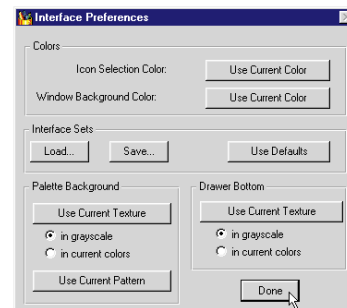
Use the Interface Preferences dialog to change the appearance of the Painter interface.

1 Using the **Color** palette or **Dropper** tool, choose the color you wish to use.

2 Click the **Use Current Color** button under **Icon Selection Color**. The selection box changes to the currently selected color. This color is used until you change it again.

1 Set the current color using the **Color** palette or **Dropper** tool.

2 If you want to view the effect of your change, set Painter to full-screen mode by pressing **Command-M/Ctrl+M**. For more information, refer to Chapter 2, "Painter Basics." The default background color is grey.

3 Open the **Interface Preferences** dialog. Click the **Use Current Color** button under Window Background Color: The background is filled with the current color.

1 Choose the paper texture you wish to use.

2 If you want colorful palettes, choose primary and secondary colors. Subtle, shades work well. Dark ones can make the palette text unreadable.

3 Choose **Edit menu▶ Preferences▶ Interface**. In the **Interface Preferences** dialog, under **Palette Background**, click **in grayscale** if you wish the texture to be rendered in grayscale; click **in current colors** if you wish the texture to be rendered in the current primary and secondary colors.

4 Click the **Use Current Texture** button.

When **In Current Colors** is selected in the interface preferences, Painter uses the primary and secondary colors from the **Art Materials**: **Color palette** to customize interface elements. Experiment with two colors for interesting effects.

To use the current pattern as the palette background:

1 Choose a pattern in the **Art Materials: Pattern palette**.

2 Return to the Interface preferences dialog and click the **Use Current Pattern** button.

Your palette background changes to the current pattern.

To change the drawer bottom:

Use the buttons under **Drawer Bottom**, following the steps given for changing palette background.

You may save your interface preferences by clicking the **Save** button in the bottom right of the **Interface Preferences** dialog. A directory box appears asking you to name the interface. Give it a descriptive name and click **Save**.

To load a saved interface set:

1 Click the **Load** button.

2 Choose the interface set from the directory box that appears.

3 Click **Open** to load the interface set.

To return to Painter's default interface:

1 Click the **Use Defaults** button at the bottom of the palette.

2 Click **Done**. Painter reverts to the default interface.

Other Raster Plug-ins

Before Painter can display your raster plug-ins (Photoshop-compatible filters) in the Effects menu, you must indicate where your plug-ins are located on your hard drive. Painter will load plug-ins from the selected directory and its sub-directories.

To locate the plug-ins folder on the Macintosh:

1 Choose **Edit menu▶ Preferences▶ Other Raster Plug-ins**. Browse to select the folder containing your plug-ins.

**2** Click **OK**. Restart Painter to activate this feature.

1 Choose **Edit menu▸ Preferences▸ Plug-ins**. Browse to select the directory containing your plug-ins.

2 Click **OK**. Restart Painter to activate this feature.

Undo—Setting Multiple Levels

Multiple Undo allows you to undo and redo up to 32 levels of changes. The number of undo levels is set in "Undo Preferences," found under **Edit menu▸ Preferences▸ Undo**. Five levels are set as a default.

Undo levels apply across open documents. With five levels set, if you have two documents open and you have "undone" three operations on the first document, you can only undo two operations on the second.

Multiple Undo can use a significant amount of disk space. If you perform multiple operations on the entire image, the whole image must be saved for each undo step. Thus, be very judicious with the number of Undo levels you choose to save.
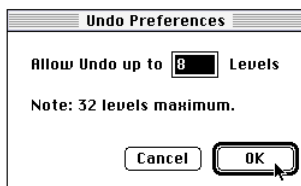
Use the Undo Preferences dialog to select the number of undo levels.

Changing Shape Preferences

You can set the default fill and stroke in the **Shape Preferences** dialog. These settings are used for new shapes you create.

If you enable Big Handles, the Bézier curve control handles will appear larger. You may find it easier to work with them in the larger size.

You can also specify colors for the wing color, point color and outline color.

1 Choose **Edit menu▸ Preferences▸ Shapes**. The **Shape Preferences** dialog appears.

2 Select your preferences. You have the following options:

Drawing Options Controls how Painter displays shapes as you create them (On Draw) and when a shape path is closed (On Close).
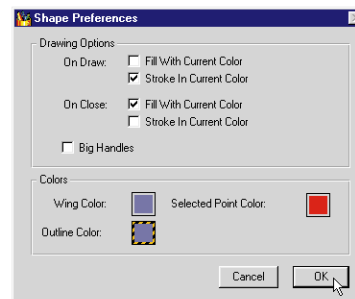
Use the Shape Preferences dialog to set default attributes for shapes.

The default setting is **Stroke On Draw** and **Fill On Close**. If you prefer a different method, enable the check boxes for the options you want.

Big Handles Controls the size of the anchor points and direction wing handles. This can make them easier to grab and drag. If you want big points, enable this option.

Outline Color Controls the color for the shape outline paths. Double-click on the on the color chip to change the color.

Selected Point Color Controls the color for selected anchor points (unselected anchor points appear "hollow"). Double-click on the on the color chip to change the color.

Wing Color Controls the color for the control wings and handles. Double-click on the on the color chip to change the color.

3 Click **OK**.

Internet Preferences

Painter 5 works closely with your WWW browser to help you take advantage of Fractal Design resources on the Internet. Whether you use Netscape, Internet Explorer or another browser, you can launch your browser from within Painter.

The browser will take you directly to the Fractal Design Web site, where you can get information and download new resource files. This streamlines your access to program help, technical support, additional art materials, libraries and the latest news from Fractal Design.

The level of memory in your system may limit your ability to run Painter and your browser application at the same time. For more information, refer to "Physical Memory Usage" on page 40.

The Painter 5 installer should be able to locate and link to your browser automatically. In some cases, though, you will need to manually select the browser. For example, you'd need to do this if you have more than one browser.

Painter enables you to go directly to the Fractal Design Web site and download resource libraries.

To select your WWW browser:

1 Choose **Edit menu▶ Preferences▶ Internet**.

2 In the dialog, click **Set Default Browser**. Locate and select your preferred browser.

3 Click **Open**.

When you choose **Load Library** from any of the **Library** pop-ups, the **Open** dialog has a **Browse Web** button. When you click **Browse Web**, Painter will launch your browser and take you to the URL set in the **Internet Preferences** dialog. By default the **Browse Web** button will take you to Fractal Design's Web site, where you can download new libraries and resources.

This default URL is http://www.fractal.com/products/painter/library/

If you would like to set a different URL for the Browse Web feature, you may do so in the Internet Preferences dialog.

To change the default URL:

1 Type a new URL in the **Default Library Browsing URL** field.

2 When you're done setting internet preferences, click **OK**.

Configuring Your Browser to Recognize Painter Resources

Your browser must be set to recognize Painter files and instructed what to do with them.

This is something you'll do in your browser. Consult your browser documentation for more information. Additional information is available in a Read Me file and at the Fractal Design Web site.

Painter offers two more ways to access the Fractal Design Web site. To find out new information about Fractal Design products, select **Fractal Design On-line** from the **Apple** menu (Macintosh) or from the **Help** menu (Windows). To go directly to Fractal Design Technical Support, select **On-line Support** from the **Help** menu.
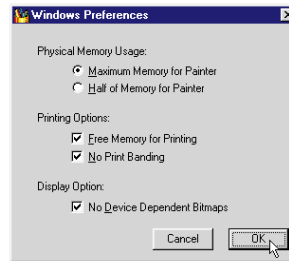
Setting Windows Preferences

Computers running Windows have some additional options.

Choose `Edit menu▶ Preferences▶ Windows` to display memory and printing options for Windows computers.

Physical Memory Usage

For best performance, choose **Maximum Memory for Painter** and run Painter with no other programs running in the background. Choosing **Half Memory for**

Painter will allow Painter to run more efficiently with other Windows applications running at the same time.

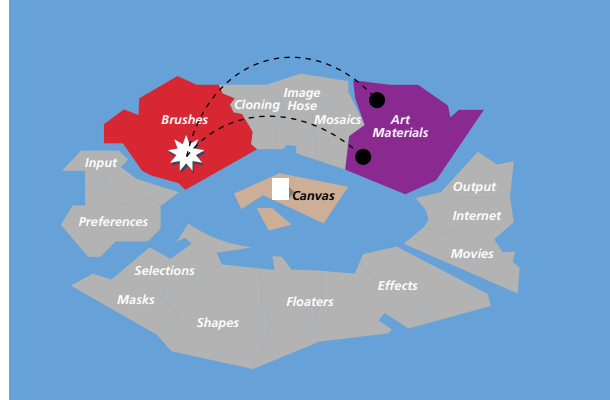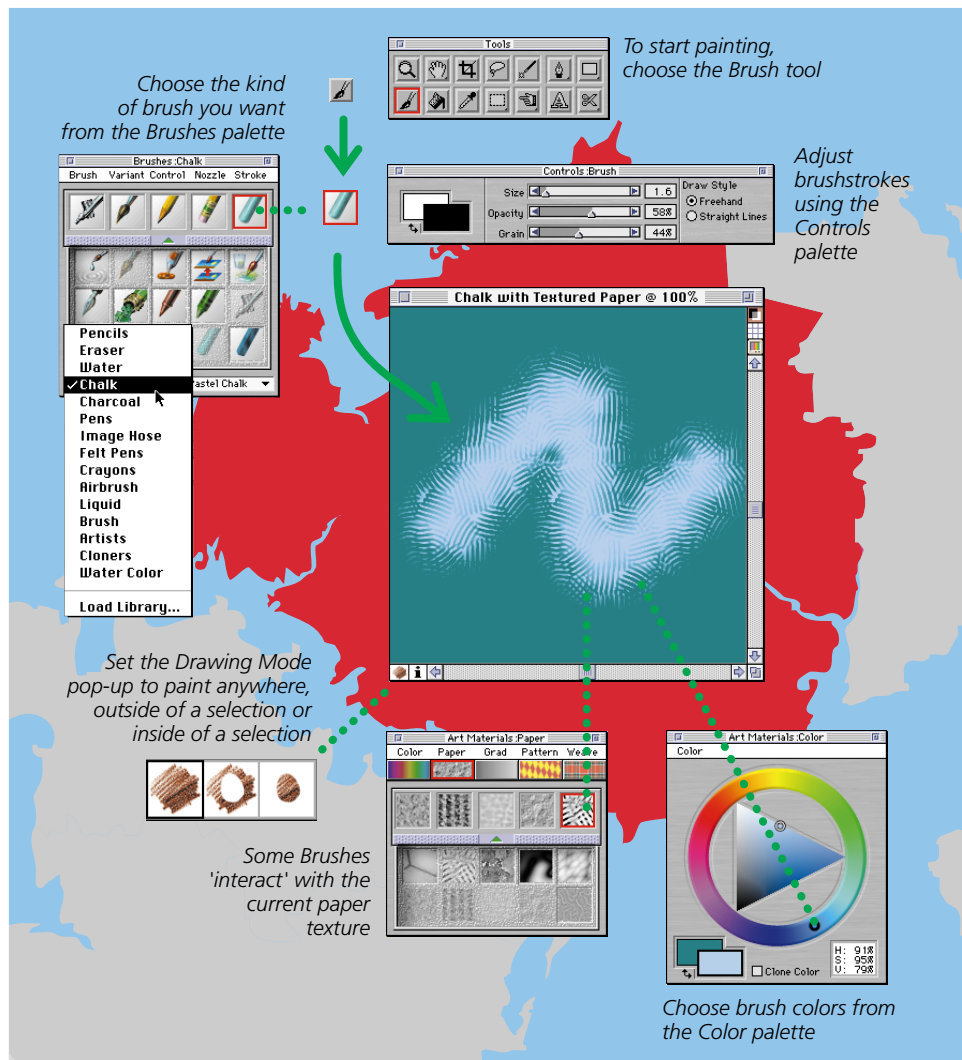*Use the Windows Preferences dialog to set preferences specific to Windows computers.*

Printing Options

Free Memory for Printing will increase printing speed by writing the active image to disk, increasing the amount of memory available for the print manager and the printer driver.

No Print Banding disables print banding for devices that support it. Disabling print banding may help some PostScript printers, but will hurt the performance of some bitmap printers, such as the Hewlett-Packard DeskJet printers. Most dot matrix printers will be faster with **No Print Banding** left unchecked in the dialog. If you experience problems printing in landscape orientation, you may have to turn off banding by checking the radio button in the dialog.

Display Option

If your video display driver is set to 16-bit colors, you may experience some color irregularities on your screen when using Painter. Checking **No Device Dependent Bitmaps** will correct this problem with most 16-bit color video displays. If you are not using 16-bit colors, this checkbox will have no effect on your system.

To start painting, choose the Brush tool

Choose the kind of brush you want from the Brushes palette

Adjust brushstrokes using the Controls palette

Set the Drawing Mode pop-up to paint anywhere, outside of a selection or inside of a selection

Some Brushes 'interact' with the current paper texture

Choose brush colors from the Color palette

Tools

Controls :Brush
Size 1.6
Opacity 58%
Grain 44%
Draw Style
Freehand
Straight Lines

Brushes :Chalk
Brush Variant Control Nozzle Stroke
Pastel Chalk

Pencils
Eraser
Water
✓Chalk
Charcoal
Pens
Image Hose
Felt Pens
Crayons
Airbrush
Liquid
Brush
Artists
Cloners
Water Color

Load Library...

Chalk with Textured Paper @ 100%

Art Materials :Paper
Color Paper Grad Pattern Weave

Art Materials :Color
Color
H: 91%
S: 95%
V: 79%
Clone Color

Image Hose
Cloning Mosaics
Brushes Art Materials
Input Canvas
Preferences Output
Internet
Movies
Selections Effects
Masks Floaters
Shapes

3

Painting

Painting with Painter's Brushes

Painter lets you draw and paint just like you do in the real world. You'll use the **Brush** tool to make marks in your document. An infinite variety of marks is possible. The result of any single stroke will depend on the specific brush you're using, the current paper texture, color and other choices you make.

Painter provides a drawer full of different brushes, each with its own characteristics. Many of the brushes are digital equivalents to the traditional media you're familiar with. Using these brushes, you'll create images that look like they were hand painted on real canvas or textured paper.

Many of Painter's brushes respond to the additional control provided by a stylus and graphics tablet. Brush strokes fade in and out, change width, or penetrate based on the pressure of the stylus.

This chapter is an introduction to the **Brush** tool and painting including information about plug-in brushes. You'll find more information about the default brush variants in Appendix A, "Painter Brush Variants." The many controls and features for customizing brushes are in "Customizing the Controls Palette" on page 73.

To start painting:

1 Choose the **Brush** tool from the **Tools** palette.

2 In the **Brushes** palette choose a brush, then choose one of its variants from the **Variant** pop-up.

3 Choose a color to paint with from the **Color** palette (when you first launch Painter, the default color is black).

4 Choose a texture from the **Paper** palette.

5 Adjust sliders for brush **Size**, color **Opacity** and penetration into the paper **Grain** on the `Controls palette`: `Brush tool`.

6 Mark in the document window.

The following sections provide details on each of these steps.

Choosing a Brush and Variant

The **Brush** tool represents a category of marking tools. The **Brushes** palette lets you choose different types of brushes—Pencils, Chalk, Crayons, Oils, Airbrush... The **Brushes** palette also lets you choose different varieties (called variants) of each brush. For example, the **Pencils** brush offers the following variants: **Colored Pencils**, **Thick & Thin Pencils**, a **2B Pencil**, a **Sharp Pencil**, a **500 lb. Pencil**, and a **Single Pixel Scribbler**.

You can show the **Brushes** palette in any one of three ways: select `Window menu▸ Show Brushes`, press **Command-2/Ctrl+2**, or double-click the **Brush** tool in the **Tools** palette.

To select a brush from the **Brushes** palette, click the icon for the brush you want. You may have to open the palette drawer to find a particular brush. You may also choose a brush from the **Brushes** pop-up menu.

Most of Painter's brushes apply color to the image. Some of the brushes, however, make changes to the pixels already in the
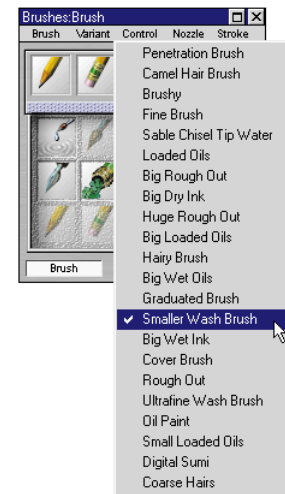
After you select the Brush tool, choose a brush and a variant from the Brushes palette.

image. If you use one of these brushes in a blank area of the canvas, you might not see a change. If one brush doesn't produce the results you'd like, try a different one. You'll learn more about brushes and their methods in "Learning about Brushes— Starting with Method" on page 48.

The Cloner Brushes are special. You'll find more information about them in Chapter 5, "Cloning and Tracing."

The Image Hose brush is unique—it lets you paint with images instead of brush dabs. You'll learn all about the Image Hose in Chapter 7, "The Image Hose."

Painter's built-in brush variants are so cool that many artists will use them with only the basic adjustments—size, opacity, and the amount of grain. If you want to create your own, custom variants, Painter offers a number of controls that let you modify the brush effect. To retain these specific adjustments for future use, you'll need to save the variant. "Customizing Painter's Brushes" on page 55 provides detailed information about customizing brushes and saving variants.

Choosing Colors

Before painting, you'll want to choose a color. Usually, you'll pick colors from the **Art Materials**: **Color palette**. You could also sample colors from an existing image using the **Dropper** tool.
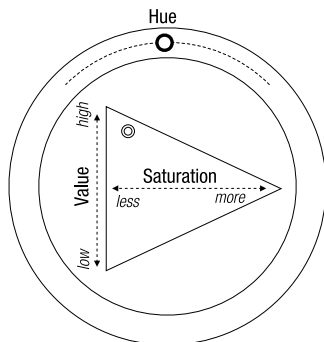
Drag in the ring to select a hue. Drag in the triangle to pick the color.

When you choose a color from the Color palette, the color you select appears in the front overlapping rectangle. This is the Primary Color. The back rectangle shows the Secondary Color, which is used to create two-color brush strokes and two-point gradations.

To choose the secondary color, click the back rectangle, then select a color.

If you have colors in the image already, you can pick one by clicking on it with the **Dropper** tool. The **Command**/Ctrl key toggles the **Brush** tool to the **Dropper** tool, so you can easily sample a color.

Selecting a color on the **Color** palette is just the beginning of working with color in Painter. Painter offers a powerful range of color features, including random color variability and color sets. For more information, refer to "Working with Colors: The Color Palette" on page 127.

Two-color Brush Strokes

Usually you work with only the primary color, the front rectangle of the two overlapping rectangles in the **Color** palette. Using one color produces a solid brush stroke.

By selecting a secondary color, you can determine the colors for a two-color brush stroke.

Multicolored brush strokes are created using Color Variability. For more information, refer to "Setting Color Variability" on page 129.

The settings for the brush on the **Brushes palette**: **Control menu▸ Sliders palette** determine how Painter decides when to use one color or the other. For information on this palette, refer to "Sliders Palette" on page 71.
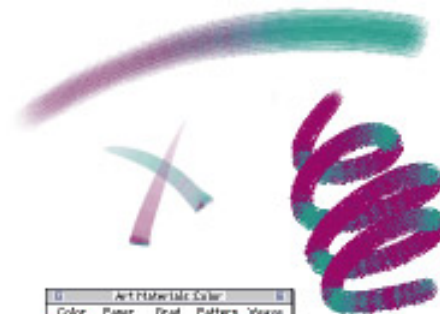
Set the primary and secondary colors to use two colors at once.

To set up a two-color brush stroke:

1 Choose the **Brush** tool from the **Tools** palette.

2 Select the **Graduated Brush** variant of the **Brush** in the **Brushes** palette, or choose another mark-making brush variant.

3 Click the front rectangle on the **Color** palette to select it.

4 Select a color on the **Color** palette or from a color set. The front rectangle shows your selection.

5 Click the back rectangle and select a secondary color.

6 Click the front rectangle again to make it active. This keeps the primary rectangle selected for the next time you pick a color.

7 Before you make a stroke, choose **Brushes palette**: **Control menu▸ Sliders**. Painter displays the **Sliders** palette.

8 Set the **Color** slider to **Direction**.

9 In your document, paint an "X." Notice that the primary color is used in one mark and the secondary color is used in the other. Draw some loops and circles to see the transitions.
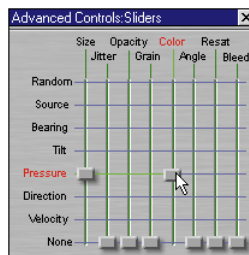
The sliders help you to set up a two color brush stroke.

You might want to try a different setting for the **Color** slider. Try **Pressure** instead of **Direction**.

For more information, refer to the **Sliders** palette discussion in "Sliders Palette" on page 71.

Choosing Paper Texture

In the natural world, a marking tool has different effects on surfaces of different texture. Painter allows you to control the texture of the canvas to achieve the results you'd expect from natural media on a given surface—pencil on watercolor paper, felt pens on cotton paper, chalk on the sidewalk, etc.

Of course some brushes, like the Airbrush, don't reveal paper texture in their strokes. This follows the behavior of the natural tools. In Painter, brushes that react with paper texture have a "grainy method." You'll learn more about controlling grain

interaction in "The Water Color Brush Variants" on page 51 and brush methods in "The Methods" on page 49.

Choose a paper texture on the **Art Materials**: **Paper palette**. Painter uses the current selected texture, so you can make a few strokes, then change the paper and make a few more strokes with different results.

*Most of Painter's brushes interact with the current paper texture.*

For complete information on using Paper texture and the **Art Materials: Paper palette**, refer to "Using Texture: The Paper Palette" on page 140.

If you have a stylus and tablet, you can adjust grain by changing the stroke of the stylus on the pressure sensitive tablet. In most cases, a light stroke colors only the peaks and ridges of the grain. A heavy

stroke fills color deep into the pockets and valleys. You can also use the **Grain** slider on the **Controls palette: Brush tool**.

Setting Basic Brush Controls

Basic brush controls for **Size, Opacity** and **Grain** are found on the **Controls** palette.
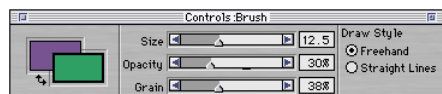
The Size, Opacity and Grain sliders are found on the Controls palette: Brush tool.

The **Controls palette**: **Brush tool** may contain other sliders, depending on the current variant. You'll learn about these and other advanced controls in "Brush Control Palettes" on page 56.

Changes you make in variant size, opacity, grain, etc. are temporary unless you deliberately save them. For complete information on customizing and saving your brushes, refer to "Customizing the Controls Palette" on page 73.

Size

The **Size** slider controls the size of the brush dab. The text field lets you enter a specific size (in pixels).

Some brushes must be "built" after you resize them. Choose **Brushes palette: Brush menu▸ Build Brush**. You can also

press **Command-B**/**Ctrl+B (**or click the **Build** button on the **Size** palette) to build the brush. If you try to paint with an "un-built" brush, Painter will alert you. For more information on building the brush, see "Building the Brush" on page 57.

To use the resizing shortcut:

1 Hold down the **Command-Option**/ **Ctrl+Alt** keys.

2 In the image window, click and drag. A circle that represents the brush size appears beneath the cursor. When you've dragged the circle to the size you want, release the button.

3 You may need to build the brush now.

The best method to set brush size is to use the keyboard shortcut.

Painter offers other features for resizing and shaping brushes. For more information, refer to "Size Palette" on page 57.

Opacity

The **Opacity** slider controls the degree a stroke "covers" or "builds up" on the underlying colors. You can also enter an Opacity percentage in the text field.

When **Opacity** is at maximum, the color is solid, completely covering, or building up, on the underlying colors.

With **Opacity** low, the color is thin. You'll be able to see through to the underlying colors.

Use the Opacity slider to adjust buildup and cover strength.

One brush method, Grainy Edge Flat Cover, does not change in opacity. It is the nature of any brush with this method not to respond to adjustments you make in the Opacity slider.

Grain

The **Grain** slider controls how much color penetrates into the paper texture. You can enter a percentage for specific grain penetration. Lower settings show more of the grain.

Moving the **Grain** slider to the right intensifies penetration of the color. This allows less texture to show through.

Moving the slider to the left reduces the stroke's penetration, which reveals more texture.

Use the Grain slider to control how brush strokes react with the paper grain.

Marking the Canvas

You'll mark the canvas by dragging freehand in the document window with the **Brush** tool. Each drag is considered a stroke. Painter also lets you create straight line strokes by clicking.

Painter offers a number of other brush stroke features that help you get the results you want as easily as possible.

Freehand vs. Straight Lines Drawing

With Painter, you can draw freehand, or with straight lines. Radio buttons on the **Controls palette**: **Brush tool** let you choose the mode you want.

Freehand allows you to drag in any motion or direction you like. The stroke follows your drag path.

Straight Lines mode connects each point you click with a line. Instead of clicking, you can drag to place the point exactly where you want it. You can close the polygon (connected to the origin) by pressing the **Return**/**Enter** key. If you end Straight-Lines drawing, click the **Freehand** button to return to freehand drawing. You may toggle between the Draw Styles as you paint.
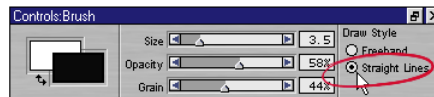
Use the Controls palette: Brush tool to choose the Freehand or Straight Lines Draw Style.
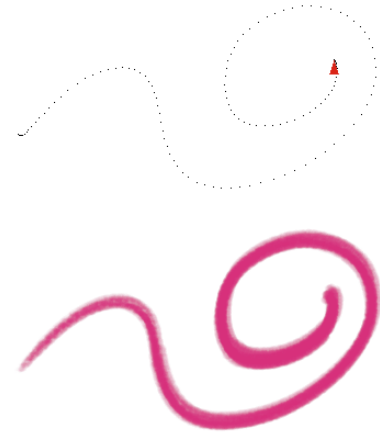
Drag in an image to create strokes using the Freehand Draw Style.

With some brushes, you see a dotted line before the mark appears. This dotted line appears when you use complex brushes. For example, the **Van Gogh** brush and the **Hairy Brush** must be precomputed, which delays the stroke's appearance on the screen. For best results, apply these brushes in short strokes. Wait for each stroke to appear before you start the next one.
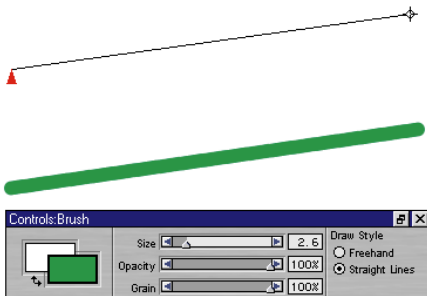
Click to create the first point. Click or drag to create a stroke using the Straight Lines Draw Style.

Keyboard Shortcuts

Key | **Description**

b   Choose Freehand mode.

v   Choose Straight Lines mode.

Working in Straight Line mode, typing "v" will end the current polygon so you can begin a new one.

Constraining Stroke Angle

In either drawing mode, to constrain your strokes to 45° increments, hold down the **Option-Shift**/**Alt+Shift** keys as you drag or click.

In Straight Line mode, lines automatically are constrained to a grid if the **Snap to Grid** option is turned on. Snap to Grid is found under the **Canvas menu▸ Grid submenu**.

Undo stroke

If you make a stroke you don't like, choose **Edit menu▸ Undo** and Painter removes it. Repeat the command to remove the previous stroke. You can set the level of undos as a preference, for more information, refer to "Undo—Setting Multiple Levels" on page 38.

Fade stroke

If you apply a stroke, but want it less opaque, choose **Edit menu▸ Fade**. Set the fade amount for the opacity you want as shown in the preview.

Stylus versus Mouse

Many of Painter's brushes respond to the pressure information provided by a drawing stylus. Greater pressure can increase the width of a brush stroke, the penetration of color, or the degree of some other effect, depending on the variant.

Many stylus and graphics drawing tablets provide 256 levels of pressure information. The mouse has no pressure information. The mouse is either "on"—button down, or "off"—button up.

If you are using a mouse with Painter, you can compensate for the lack of pressure information by adjusting the **Size**, **Opacity** and **Grain** sliders on the **Controls palette: Brush tool**. For example, moving the **Opacity** or **Grain** slider to the left can give the same results as pressing lightly with a stylus.

Painter 5 offers new brushes specifically designed for using a mouse. Load the **Mouse** brush library located in the **New Brushes** folder.

If you have a mouse, you can use the **Brushes palette**: **Control menu▸ Sliders palette** to compensate for the lack of pressure information. Instead of using pressure to determine size or color, you could use direction. For more information, refer to "Sliders Palette" on page 71.

Recording and Playing Back Strokes

Painter will repeat any stroke you record, anywhere you click. This is a great way to create a series of identical strokes, for example, in hatching.

To record a stroke:

Choose **Brushes palette**: **Stroke menu▸ Record Stroke**. Your next brush stroke you make is now saved in memory.

To play back a stroke:

1 Choose **Brushes palette**: **Stroke menu▸ Playback Stroke**.

2 Click in the image where you want Painter to repeat the stroke. Painter centers the stroke on the point you click. You can repeat the stroke as many times as you like.

To turn off playback:

Choose **Brushes palette**: **Stroke menu▸ Playback Stroke** again.

You can record a stroke and play it back within a selection.

Another way to use a recorded stroke is with Auto Playback. Auto Playback repeats the recorded stroke at random positions on the page. Select **Brushes palette**: **Stroke menu▸ Auto Playback**. Painter continues repeating the stroke until you click the mouse to stop it.

Where You Can Paint—the Canvas, a Floater or a User Mask

Most of the time you'll want your brush strokes applied to the canvas. But you can also paint into an image floater. When a floater is selected (highlighted in the Floater List), that floater is the target for your brush strokes. For more information, refer to "The Floater List" on page 202.

If you try to paint on a floating object that's not an image floater (Shape, Plug-in Floater or Reference Floater], Painter immediately converts the object to an image floater so it can accept your brush strokes.

There's one other possible destination for your brush strokes—a user mask. When a user mask is selected (highlighted in the Mask List), that mask is the target for your brush strokes. For more information, refer to "Working with Masks" on page 170.

In all cases, your brush strokes go to the selected target, so make sure of the destination before starting to paint.

Learning about Brushes— Starting with Method

Painter has so many different brushes that searching out the right one can be a daunting task. You can expedite the search by learning more about the brushes— specifically, what makes them different from each other.

The **Method** defines the most basic level of brush behavior. A brush method is the foundation on which all other brush variables build. Painter provides eight Methods—Buildup, Cover, Eraser, Drip, Mask, Cloning, Wet, and Plug-in.

Because of Painter's new masking capabilities, the Mask method is no longer required. The Mask method is provided for compatibility with Painter 4 brushes. In Painter 5, all Mask methods will be mapped to the Cover method.

Each method may have several versions, called **method subcategories**. The subcategories further refine the brush behavior. The following terms are used in describing most of the variations:

- Soft methods produce smooth, anti-aliased strokes.

- Flat methods produce strokes with hard, "pixellated" edges.

- Hard methods provide brush strokes with semi-anti-aliased edges

In a few instances, you'll see the words "edge" and "variable" in a method subcategory. "Edge" means strokes are thick and sticky looking. "Variable" means a brush stroke starts off a bit more transparent.

Last, there's "grainy." It means the brush reacts to the paper grain.

Method and method subcategories are set from the pop-ups in the expanded Brushes palette. You can think of the method and method subcategories as attributes of the stroke's appearance. Putting together the

method categories and their variations results in the specific brush method (that may be assigned to a given brush). For instance, **Grainy Hard Cover** means that brush strokes interact with paper grain and have semi-anti-aliased strokes that hide underlying ones. **Grainy Hard Cover** is the default method for **Chalk** and **Charcoal**.

To display the method and subcategory, click the **Brushes** palette grow box. You can hide the pop-ups by clicking the grow box again.
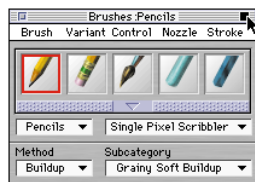
The Method and Subcategory pop-ups show the method of the current brush.

The Methods

Buildup

The **Buildup** methods produce brush strokes that build toward black as you overlay them. A real-world example of buildup is the felt pen: Scribble on the page with blue, then scribble on top of that with green, then red... The scribbled area keeps getting darker—approaching black. Even if you were to apply a bright color like yellow, you couldn't lighten the scribble, it would stay dark; this is buildup. Crayons and Felt Pens are buildup brushes.

Cover

The **Cover** methods produce brush strokes that cover underlying strokes. An example of "cover" is oil paint. No matter what colors you paint, you can always apply a layer of paint that completely hides what's underneath. Even with a black background, a thick layer of yellow will be pure yellow. Chalk and Airbrush are examples of Cover brushes.

Eraser

The **Eraser** methods either erase, lighten, darken, or smear the underlying colors. The Eraser variants, Dodge and Burn all use the Eraser method.

Drip

The **Drip** methods interact with the underlying colors to distort the image. The Liquid brush variants use the Drip method. The **Grain** slider controls the strength of distortion a **Liquid** brush exerts on an image.
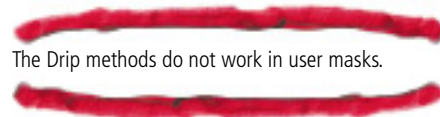
The Drip methods do not work in user masks.
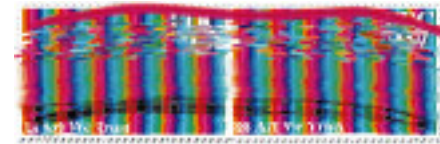
Cloning

The **Cloning** methods take imagery from a clone source and re-create it in another location, often rendering it in a Natural-Media style. Cloning is covered in detail in Chapter 5, "Cloning and Tracing."
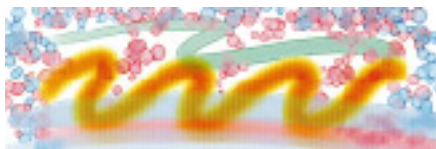
Wet

The **Wet** methods work in the wet layer to produce water color effects. Using the Water Color brushes and working in the Wet method is described in "Water Color" on page 50.

Plug-in

Plug-in is a special method. It defines no specific brush behavior itself, but is an avenue to a wide range of behaviors. The specific behavior is determined in the method subcategory. You'll find more information on Plug-in brushes in "Expandable Plug-in Brushes" on page 51.

Changing Methods

Because the method sets a brush variant's most basic behavior, you can alter a variant's behavior by changing its method.

Lets say you want a Charcoal-looking stroke, but instead of hiding underlying strokes, you want brush strokes to build to black. You can get this effect by changing the method to **Buildup**.

Or perhaps you want the **Scratchboard Rake** variant of the **Pens** brush to smear underlying colors. You can change its method from **Cover** to **Drip**.

Some brush effects are closely dependent on their own methods. The results from some brushes may differ.

The brush stroke on top was created using Grainy Hard Buildup. The stroke on bottom was created using Soft Variable Buildup.

Water Color

The **Water Color** brush variants produce natural looking watercolor effects.

The Wet Layer

Water Color brushes are different from the other brushes. **Water Color** brushes paint into the "wet layer," which has special properties that enable the colors brushed into it to flow and mix.

The wet layer floats over the image. This separation of layers enables effects and techniques that wouldn't otherwise be possible. You can edit the watercolors, including erasing and blurring, without changing anything in the image layer. For example, you can draw pencil outlines in the image layer, then overlay watercolor shading without smudging the pencil lines.

When you want the Wet layer to merge with the canvas, choose **Canvas menu ▶ Dry**.

You can't edit the wet layer with image-layer tools. If you're using the **Eraser** brush and it has no effect on a brush stroke, that stroke may be in the wet layer. Use the **Wet Eraser** instead.

You can't use the **Selection** tools to select and delete an area in the wet layer.

You can't use the **Dropper** tool to sample colors from the wet layer.

Diffusion

Diffusion creates wonderful, soft, feathery edges on the strokes of some water color variants. In terms of natural water colors, wet paper produces more diffuse strokes.

After applying water color strokes—but before drying—you can increase the diffusion of your strokes.
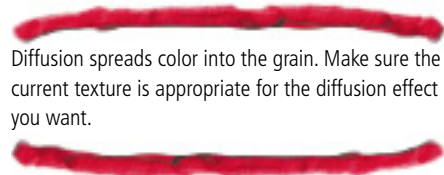
Diffusion spreads color into the grain. Make sure the current texture is appropriate for the diffusion effect you want.

To increase diffusion on water color strokes:

1 Apply one or more strokes with a water color brush variant.

2 If you would like to restrict the diffusion to a region, make a selection with any selection tool, for example the **Lasso** or the **Rectangular Selection** tool. The diffusion effect will apply only within the selection.

3 Press **Shift-D** or adjust the slider on the **Water** palette.

4 Repeat the command until the strokes show the level of diffusion you want.

A water color stroke before and after diffusion.

The Water Color Brush Variants

All of the **Water Color** variants, except Wet Eraser, interact with the canvas texture. The **Grain** slider works differently with the Water Color brushes than with the other brushes. With **Water Color** variants, moving the slider to the right makes the texture more pronounced. Moving the slider to the left reduces the grain interaction.

Stylus pressure affects the width of the brush stroke for all of the **Water Color** brush variants (except **Wet Eraser**). Increased pressure widens a brush stroke; less pressure narrows a stroke.

Expandable Plug-in Brushes

Painter's Natural-Media engine now has an extensible, open architecture for creating and adding new brushes. The architecture is called the **Plug-in Brush**. Painter ships with a variety of great new Plug-in Brushes. This extensibility allows you to add new exciting brushes by copying files to your Painter folder. The next time you launch Painter, the program loads the new brushes and you can paint with them.

The Plug-in Brush is a breakthrough in technology. The design enables new brush behaviors, never before possible, like painting on a transparent floater with color and into the mask simultaneously.

The power and behavior of future brushes is limited only by imagination. Visit the Fractal Design Web site occasionally to learn what's available.

Fractal Design encourages third-parties to develop Plug-in Brushes. If you're interested in creating new Plug-in Brushes for Painter, visit the Fractal Design Web site for more information.
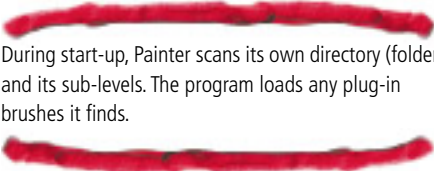
Plug-in Brushes can deliver extraordinary effects and diverse painting styles. Painter 5 comes with dozens of cool Plug-in Brushes.

Each Plug-in Brush is unique.

All of the Plug-in Brush variants that come with Painter 5 are in alternate libraries. The brush files for F/X, Gooey, Layer, Mouse, New Paint Tools, Photo, and Super Cloners variants are found in the **New Brushes** folder in the **Painter 5** folder. You can quickly load the New Brushes by clicking an icon on the **Shortcut to New Brushes**

Custom palette. You may also load one of these libraries by choosing **Brushes palette: Library pop-up▸ Load Library**. Use the Open dialog to locate and open the library you want. If you want to customize your access to the New Brushes, place the brush variants on custom palettes.

During start-up, Painter scans its own directory (folder) and its sub-levels. The program loads any plug-in brushes it finds.
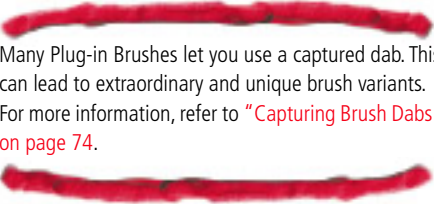
Some Plug-in Brushes may have a specific set of controls. These controls will be accessible through the **Brushes palette: Control menu▸**. The nature of the controls depend on the actual Plug-in Brush.

Plug-in Brushes fall into two categories: those that define a new method subcategory and those that define a new stroke type.

Remember that the variants you find under the Plug-in Brushes are just the start. You can customize the effect from any of these brushes by moving sliders and changing options in the **Controls** palette —Size, Spacing, Rake, etc. You can experiment to discover brush effects you like.

Add Grain Brush
Blur Brush
Bulge Brush
Comb Brush
Confusion Brush
Deep Well Brush
Diffuse Motion Blur Brush
Diffuse Pull Brush
Glow Brush
Graphic Print Brush
Horizontal Crease Brush
Hue Add Brush
Hue Brush
Hue Sat Brush
✓Left Twirl Brush
Liquid Brush
Overlay Brush
Pinch Brush
Relief Brush
Right Twirl Brush
Sat Add Brush
Scratch Remover Brush
Sharpen Brush
Simple Diffuse Brush
Transparent Layer Brush
Val Add Brush
Val Add Sat Sub Brush
Vertical Crease Brush

The subcategories you find under the Plug-in Method are just the start. You can give any brush Plug-in behavior by choosing a Plug-in Method and Method subcategory.

Many Plug-in Brushes let you use a captured dab. This can lead to extraordinary and unique brush variants. For more information, refer to "Capturing Brush Dabs" on page 74.

Using Plug-in Methods with Other Brushes

Remember that you can change the behavior of any brush by changing its method. You can take advantage of this by giving one of the traditional brushes a Plug-in method.

You can choose any of Painter's traditional brush variants (for example, the **Impressionist** variant of the **Artists** brush) then set its Method to Plug-in and choose one of the available method subcategories—Left Twirl, for example. This gives you a brush with the dab and stroke of the **Impressionist** that performs left-handed twirls. This is only one example; the possible combinations are only limited by your imagination.

You can give any built-in brush Plug-in power by changing its method.

Painting on a Transparent Floater with the Layer Brush

The **Layer** brush uses a Plug-in brush method subcategory that lets you paint on a transparent floater. With the **Layer** brush, you're able to look right through the floater to the background imagery, but each brush stroke appears in the floater. You can paint over the canvas image without "damaging" it.

The **Layer** brush works by adding color to the floater image while simultaneously adding to the floater's mask to make the stroke visible.

You can customize almost any brush to paint into a transparent floater by changing its method to Plug-in and its subcategory to Transparent Layer Brush.

To paint on a transparent floater:

1 Choose **Objects palette**: **Floater menu▸ Transparent Layer**. Painter creates a new transparent floater that's equal to the canvas size.

You can find out more about floaters in Chapter 11, "Floaters."

2 Choose one of the Layer brush variants and start painting. To find the **Layer** brush, click the **Layer** brush icon from the Shortcut to **New Brushes Custom** palette or load the **Layer** brush library from the **New Brushes** folder.

The transparent floater must be selected (highlighted in the Floater List) to paint into it.

Create your own brush variants by starting with a built-in variant

Method and subcategory affect how a brush behaves

Brushes :Chalk
Brush Variant Control Nozzle Stroke

Chalk ▼   Artist Pastel Chalk ▼
Method   Subcategory
Cover ▼   Grainy Hard Cover ▼

Buildup
✓ Cover
Eraser
Drip
Mask (Cover)
Cloning
Wet
Plug-in

Tear off individual brushes to create a custom brush palette

Custom-4

For quick access to basic brush controls, use the Controls palette

Brushes :Chalk
Brush Variant Control Nozzle Stroke

Size...
Spacing...
Random...

Bristle...
Cloning...
Rake...
Well...
Water...

Sliders...

Custom Controls...

Plugin Options...

Chalk ▼
Method
Cover ▼

Adjust the characteristics of a brush stroke to suit your needs

Controls :Brush
Size   10 . 1   Draw Style
Opacity   100%   ◉ Freehand
Grain   23%   ○ Straight Lines

Customize Controls Palette
Select the brush controls for the current variant:
Category: Spacing ▼

Create your own extensions to the Controls palette

Collapse or extend the Palette

Controls :Brush
Size   10 . 1   Draw Style   Bristles   10
Opacity   100%   ◉ Freehand
Grain   23%   ○ Straight Lines   □ Random Brush Stroke Grain

Brushes
Image
Cloning Hose   Mosaics
Art
Materials
Input
Canvas
Output
Preferences
Internet
Movies
Selections   Effects
Masks   Shapes   Floaters

4

Advanced Painting

Customizing Painter's Brushes

All of Painter's brushes are adjustable in a myriad of ways. In fact, the default variants in the **Brushes** palette are just saved settings from Painter's vast collection of brush controls.

While these default brushes do excellent work, you'll probably want to adapt them to a particular need or refine them to your

own style. You can change brush size, shape, angle, how color flows from it, and much, much more. This chapter describes the many features for customizing Painter's brushes.

Changes you make to brush variants, including the basic controls like size and opacity, apply only as long as that variant is selected—they disappear as soon as you switch to another variant. This ensures that the brushes are "clean" every time you reach for them. *If you want to keep the changes, you must save them*. Painter allows you to save customized brushes as the default variants, as new brush variants, or as Brush Looks.

Caution: Adding variants to a library increases memory requirements. The size limit for a brush library is 15MB. For efficiency, and to avoid problems, save your custom brushes to secondary brush libraries. It's easy to load alternate libraries, so your favorite brushes are always nearby.

Brush Control Palettes

The **Brushes palette: Control menu** provides a selection of palettes that can be used to customize brush variants depending on their method. These palettes are referred to as **Brush Control** palettes.

Brush Controls are found in the Controls menu.

For example the **Water** palette works exclusively with the **Water Color** brush. You can also add brush controls to the **Controls palette: Brush tool** for any brush variant. This allows you to create a custom set of controls for that brush. For more information on adding controls to the Controls palette, refer to "Customizing the Controls Palette" on page 73.

The **Size** and **Bristle** palettes control the size and shape of the "dabs." Although brush strokes appear as a continuous

swatch of color, they are actually created by laying down a series of closely spaced individual dabs.

The **Spacing** and **Rake** palettes control the way the dabs are repeated in the stroke.

The **Cloner** palette has special controls for brushes of the cloning method.

The **Well** palette controls the medium (usually color) that flows from the brush.

The **Random** palette has one control for the stroke and several for the medium.

The **Water** palette has special controls for brushes of the wet method (water color).

The **Sliders** palette can be used in many ways to affect the dab, stroke, and medium.

Remember that the most basic setting for a brush variant is its **Method**. Some palettes and controls don't apply in some variant methods. Certain other brush dab and stroke settings preclude other controls. In most cases, controls that don't apply for the current method are grayed out.

Methods and Method subcategories are selected from the bottom of the expanded **Brushes** palette. The pop-up menus display the options available for the selected brush.

The brush method is the foundation of brush behavior. Modifying a variant by changing its method is covered in "Changing Methods" on page 50.

The Brush Look Designer can be a big help when you customize brushes. For more information, refer to "Using the Brush Look Designer" on page 76. With the Brush Look Designer, customizing a brush is interactive—put a stroke on the scratchpad, and watch it change as you adjust any of the brush controls. It provides immediate feedback on the effects of your changes.

Building the Brush

When you make changes to the dab—choosing a different brush tip or resizing a dab type—Painter must compile the changes, a process called "building."

The **Size** palette has a **Build** button. You can also build a brush with **Command-B/ Ctrl+B**. If you try to paint with a brush that hasn't been built, Painter informs you and gives you a chance to build it.

You might want Painter to take care of brush building automatically. Choose **Brushes palette: Brush menu▶ Auto Build Brush**. When this option is enabled, Painter builds the brush after each parameter change.

If you are designing brushes and only want to build the brush when you are finished, disable Auto Build Brush.

Relax. It can take a moment to build a brush. For a captured dab with a large ±Size setting, it can take several moments. During brush building, the cursor appears as the watch (Macintosh) or hourglass (Windows). When the triangular brush cursor returns, you can start painting.

Size Palette

The **Size palette** accessed from the **Brushes palette: Control menu** lets you control the brush dab.
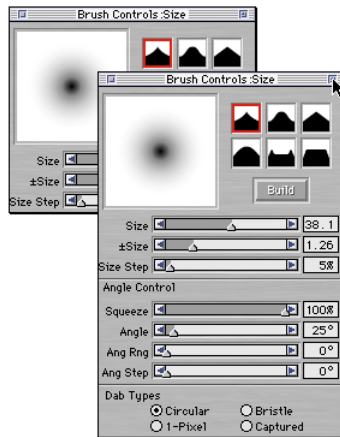
The Brush Controls: Size palette allows you to control the size and angle of brush dabs. Click the grow box to expand the palette.

Preview

The Preview window in the center of the palette shows how your changes affect the brush dab. Clicking in the Preview window lets you toggle between "hard" and "soft" views of the dab.

Hard view   **Soft view**

Click in the Preview window to toggle between Hard view and Soft view.

In the *hard view*, concentric circles show the minimum and maximum size of a brush. The inner (black) circle shows the minimum dab width. The outer (gray) circle shows the maximum dab width. Remember that some brushes vary the line width based on pressure or stroke speed. The difference between the diameter of the two circles shows the range in which the stroke width will vary.

In the *soft view*, shading shows the density distribution of the brush tip. The density distribution describes how much of the medium is conveyed by a given point on the brush dab. For example, an individual pad made by an airbrush produces a soft-edged circular mark with minimum density at the outer edge of the pad. Density increases inward to a maximum value at the exact center of the pad.

Brush Tips

The brush tip profile shows a cross section of density distribution across the diameter of the dab. You can think of a brush tip profile as a bell curve graph representing the density spread across the brush pad.

Different mediums have different density distributions. Changes in the density distribution produce different marking qualities in a brush stroke.

To change the density distribution, click the icon for the brush tip profile you want.

Pointed profile

Pointed profile provides maximum density at the center with rapid fall-off to the edge.

Medium profile

Medium profile has a wide area of greater density at the center with rapid fall-off to the edge.

Linear profile

Linear profile provides maximum density at the center with an even fall-off to the edge.

Dull profile

Dull profile provides maximum density at the center with a high density weighting to the edge.

Watercolor profile

Watercolor profile provides maximum density at the outer edge in a ringlike fashion with medium internal density.

1-Pixel Edge

1-Pixel Edge provides maximum density throughout with a rapid fall-off at the edge, producing a one-pixel, anti-aliased edge.

Size

The **Size** slider controls the width of the brush dab and, therefore, the brush stroke. Moving the slider to the right makes a brush wider. Moving it to the left makes it narrower.

The Size slider controls the width of the brush dab.
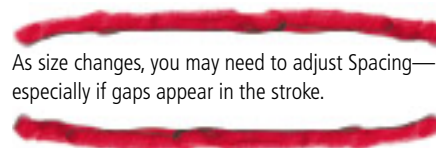
As size changes, you may need to adjust Spacing—especially if gaps appear in the stroke.

You don't need to open the **Brush Controls: Size palette** to adjust the size of a brush. You can use the **Size** slider on the **Controls palette: Brush tool** or use the brush sizing shortcut.

To use the brush sizing shortcut:

1 Hold down the **Command-Option/ Ctrl+Alt** keys and drag in the image window. A circle that represents the brush diameter appears beneath the cursor.

2 When you've dragged the circle to the size you want, release the button.

In some cases, the brush must be "built." Press **Command-B/Ctrl+B** to build the brush. If you try to paint with an "un-built" brush, Painter alerts you.
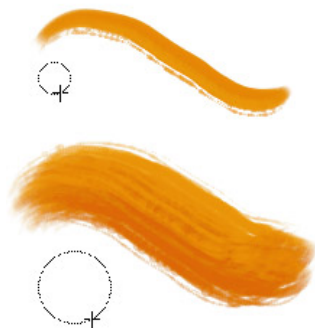
To size your brush dab, press the **Command-Option/Ctrl+Alt** *keys and drag.*

±**Size**

The ±**Size** slider controls the difference between the minimum and maximum width of a stroke. Remember that some brushes vary the line width based on pressure or stroke speed. The difference between the diameter of the two circles shows the range the stroke width will vary. Moving the slider to the right increases the difference between the narrowest and widest portions of a stroke.
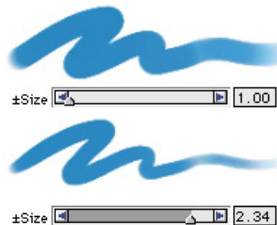
The ±Size slider controls the difference between the minimum and maximum width of a stroke.

Increasing the ±Size of a variant increases the time needed to build the brush.

Size Step

The **Size Step** slider controls the transition between the narrow and wide sections of a stroke. Moving the slider to the right makes the transition appear more abrupt. Moving it to the left makes the transition smoother.

The Size Step slider controls the transition between the narrow and wide sections of a stroke.

Build

When you finish making changes on the **Brush Controls: Size palette**, you may need to click **Build** (if the button is raised and highlighted) to create the brush shape. Pressing **Command-B/Ctrl+B** or choosing **Brushes palette: Brushes menu▶ Build Brush** types also builds the brush.

Relax, some brushes may take a little while to build—especially if you're working on a slower system. Larger dab and ±Size values increase build time.

Angle Controls

Expand the **Brush Controls: Size palette** by clicking the grow box. The **Angle Control** sliders and **Dab Type** buttons appear.

Squeeze

The **Squeeze** slider controls the shape of the brush dab. Squeezing a brush changes it from round to elliptical. Moving the slider to the left makes a dab more elliptical and moving it to the right makes a dab more round.

Squeezing and angle control are not valid for Bristle and 1-Pixel dab types.
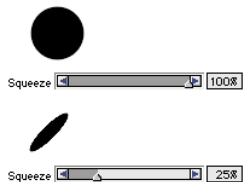
The Squeeze slider controls the shape of the brush dab.

Angle

The **Angle** slider controls the angle of an elliptical brush dab. Moving the slider to the right rotates the dab clockwise. Moving the slider to the left rotates the brush counterclockwise.

The angle describes the length of the ellipse.

The Angle slider controls the angle of an elliptical brush dab—it is only significant for dabs with Squeeze below 100%.

Ang Rng

The **Angle Range** slider lets you specify a range of dab angles that may appear in a brush stroke. Setting this slider to 180˚ means you can get every angle between 0˚ and 180˚ in your stroke.

To take advantage of this feature, you'll need to set up the brush to base the angle on some factor, like stroke direction or randomness. You'll do this in the **Sliders** palette, discussed in .
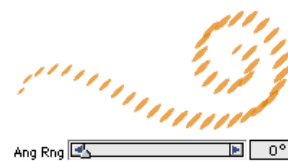
The Angle Range slider controls the range of dab angles that may appear in a brush stroke.

Ang Step

The **Angle Step** slider controls the increment of change for brushes with an Angle Range greater than 0˚. For example, setting the Angle Step to 5˚ means that you get a brush dab every 5˚ within the current angle range setting. Moving the slider to the right results in fewer brush dab angles. Moving the slider to the left creates more brush dab angles.

Ang Step [_____] 0°

Ang Step [_____] 90°

The Angle Step slider controls the increment of change for brushes with an Angle Range greater than 0˚.

Dab Types

Brushes use one of the following dab types: **Circular**, **1-Pixel**, **Bristle**, or **Captured**.
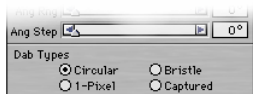
There are four different dab types available in the Size palette.

Circular

Circular dabs are controlled by the **Size** palette.

1-Pixel

A 1-Pixel dab consists of one pixel. You can't change its size. You'll use 1-pixel brushes mostly when you zoom in to edit at the pixel level.

Bristle

Bristle dabs are controlled by the sliders in the **Brushes palette: Controls menu▶ Bristle palette**. When you select Bristle Dab, the soft view of the Preview window on the **Size** palette displays a Bristly dab.

Captured

Captured dabs are dab shapes that you create and capture with **Brushes palette: Brushes menu▶ Capture Brush**, described "Capturing Brush Dabs" on page 74.
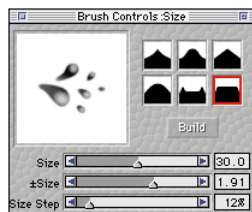
A captured dab is for a captured brush. It lets you paint with specific shapes and designs.

You can choose the dab type for a variant you're creating at the bottom of the expanded **Size** palette.

Spacing Palette

A brush stroke is created with a series of dabs. By adjusting the spacing between dabs, you can control the continuity of the brush stroke.
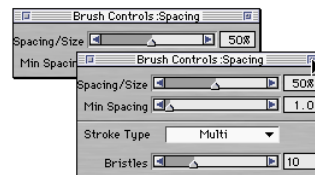
Use the Spacing palette to control the spacing of the dabs. Click the grow box to expand the palette.

Spacing/Size

The **Spacing/Size** slider controls the distance between the brush dabs in a stroke. When the **Spacing/Size** slider is at 100%, the size of the dab equals the spacing. For example, a dab that's 10 pixels across is repeated every 10 pixels. As the **Spacing/Size** slider is moved to the left, the distance between dabs is less and they begin to overlap. Overlapping increases the density of the stroke and makes it look more continuous.
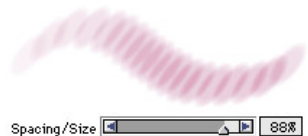
The Spacing/Size slider controls the distance between the brush dabs in a stroke.

Min Spacing

The **Minimum Spacing** slider specifies the minimum number of pixels between dabs. If you don't want a continuous stroke, move the **Minimum Spacing** slider to the right. In this way, you can create a dotted or dashed line. Each dot or dash is made by one brush dab.
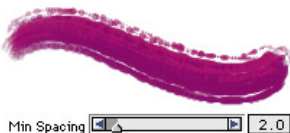
The Minimum Spacing slider controls the minimum number of pixels between dabs.

Stroke Types

Expanding the **Brush Controls: Spacing palette** reveals the **Stroke Type** pop-up. The **Bristles** slider, at the bottom of the palette, controls the number of dabs used for **Multi**-stroke and **Rake** brushes.
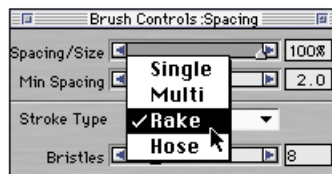
The Stroke Type slider is used to select the type of used in the spacing.

Single

A **Single** stroke brush has one dab path.

The single stroke brush has one dab path.

You can use Bristle and Captured dabs with the Single stroke option to create the effect of multiple bristles.

Multi

A **Multi**-stroke is made by dragging a set of randomly distributed dabs. The several dabs leave strokes that are not parallel, and they may overlap. Each time you apply a multi-stroke brush, the result may differ.

The multi-stroke brush is made by dragging a set of randomly distributed dabs.

Each stroke in a Rake or Multi-stroke brush can have a different color. Increase Color Variability on the **Art Materials: Color palette** to color the strokes differently.

Multi-stroke brushes must be precomputed, which generates a delay in their appearance on the screen. Because of this delay, Multi-stroke brushes, such as the Van Gogh brush, work best when you apply them in short strokes.

Rake

A **Rake** stroke is made by dragging a set of evenly distributed dabs. The several strokes in a rake brush are parallel. All other rake control is done with the **Brushes palette: Controls menu▶ Rake palette**.

The rake brush is made by dragging a set of evenly distributed dabs.

Hose

The **Hose** is a single stroke composed of the current **Image Nozzle** file. To learn more about the Image Hose and Nozzle files, refer to Chapter 7, "The Image Hose."

The Hose stroke type uses the current Nozzle file images as its dabs.

Bristles

The **Bristles** slider controls the number of bristles or dabs used for **Multi-stroke** and **Rake** brushes.

If you set a Rake brush for a certain number of bristles, but don't see that many—either the dabs are overlapping or some of them are not in contact with the paper. You can adjust the Brush Scale and Contact Angle for the rake in the Rake palette. For more information on the Rake palette, refer to .

Random Palette

Painter uses randomness to introduce an "accidental" quality in color and stroke. Randomness contributes to the appealing, unique look of artwork done in Painter. You can control brush randomness with the **Random** palette.
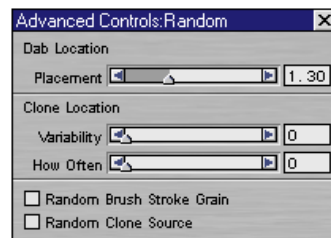
Use the Random palette to create a sense of "randomness" to your artwork.

Randomness of the primary color is controlled from the **Art Materials: Color palette**.

Dab Location Placement

The **Dab Location Placement** slider introduces a randomized jitter to the brush stroke. Instead of appearing directly along the stroke, dabs appear randomly outside the brush stroke path. Move the slider to the right to increase deviation from the stroke path.
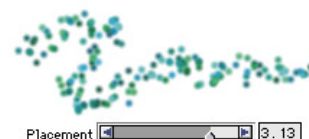
The Placement slider creates a randomized jitter in the brush stroke.

Clone Location

The two Clone Location sliders work with brushes of the Cloning method.

A cloning brush takes color information from a source image and applies it to a destination image.

One of the popular uses for cloning is translating a photographic image into a painted image. The type of brush you use determines the paint medium.

Variability

When **Variability** is zero, the pixels of the source and destination images correspond precisely—using a cover brush at full opacity (and no grain) will simply recreate the source image.

The Variability slider controls the offset of the clone based on the location of the source image.

Introducing a degree of randomness disturbs the pixel-to-pixel correspondence. The resultant variations in the image distance the clone from its photographic source, which can contribute to the Natural-Media appearance.

The **Variability** slider lets you randomly offset the location where the clone brush samples the source. Moving the slider to the right increases the range (distance) the sample may be offset.

How Often

The **How Often** slider controls the period between random offsets. Moving the slider all the way to the left sets the period to zero—every sample is offset. This gives the clone image a rough, distorted look.

The How Often slider control the period between random offsets.

Moving the **How Often** slider to the right increases the period—samples are offset less frequently. This keeps the clone image closer to the source.

Random Brush Stroke Grain

Normally, when you make a brush stroke, the paper grain is fixed. Strokes repeated over an area will bring out the same grain.

The **Random Brush Stroke Grain** option randomly moves the paper grain for each stroke. The **Spatter Airbrush** is an example of a variant that uses Random Brush Stroke Grain.
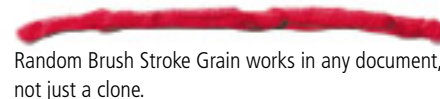
Random Brush Stroke Grain works in any document, not just a clone.

The Random Brush Stroke Grain option randomly moves the paper grain for each stroke.

Random Clone Source

Random Clone Source randomly samples the source document. There's no correspondence between the samples taken from the source and where they are placed on the clone. The result is a random pattern of the predominant colors in the source. The brush and stroke determine the nature of the pattern.

You might use **Random Clone Source** with a faint, stipple brush to add noise to an image. In this case, the clone source image merely contains the "noise" colors you wish to add.

The Random Clone Source option randomly samples the source document.

Bristle Palette

Bristles create the look of a real brush, complete with the striations that hairs on a real brush make. Use the sliders on the **Bristle** palette to design the many individual painting tips in a single brush dab.

To see the effect of the **Bristle** sliders, keep the **Size** palette open. Click in the preview window to show the "soft" view of the dab. The bristled dab changes as you move the sliders.

The Bristle palette controls the brush's bristle appearance.
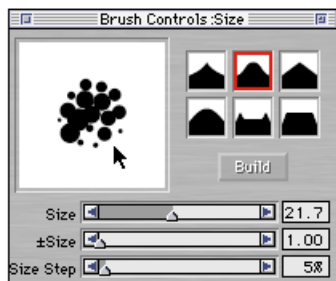
To view the effect of the Bristle palette sliders, click the Preview on the Size palette.

Thickness

The **Thickness** slider controls the diameter of the separate bristles.

Moving the **Thickness** slider to the left reduces the density of the medium left by the stroke. When the slider is fully to the left, the brush will leave a faint stroke—even if Opacity is 100%.

The Thickness slider controls the diameter of the individual bristles.

Clumpiness

The **Clumpiness** slider applies a random proportional variance across the bristles. This produces an effect that looks like some of the bristles have clumped together.

The Clumpiness slider controls how bristles clump together.

Hair Scale

The **Hair Scale** slider controls the density of bristles in the brush dab. If you want a fine-hair brush, move the **Hair Scale** slider left.

The Hair Scale slider controls the density of bristles in the brush dab.

Scale/Size

The **Scale/Size** slider controls the degree of size variation applied to a bristle set. At 0% there is no size change applied to the bristle set. Setting this slider to a value greater than 0% creates a set of scaled iterations of the bristles dab.

The **Scale/Size** control is invalid if the **Size** palette is set at the minimum value of 1.00.

The Scale/Size slider controls the degree of size variation applied to a bristle set.

Cloning Palette

The **Cloning** palette offers controls specific to cloning method brushes and other brushes when the **Color** palette's **Clone Color** option is enabled.
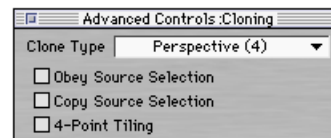
The Cloning palette controls options specific to cloning.

Clone Type

The **Clone Type** pop-up lets you choose between several cloning variations. These variations are arranged according to the number of reference points used. With two or more reference points, you can apply a transform (rotate, skew, scale mirror, perspective) during cloning. For complete information on using the different clone types, refer to Chapter 5, "Cloning and Tracing."

All of the **Clone Type** variations are valid for any brush that uses the **Color** palette's **Clone Color** option.

Obey Source Selection

With this option enabled, any selection in the clone source region is used to constrain painting in the destination. If a transform **Clone Type** is used, the selection is appropriately transformed. This option is valid only with the **Cloning** method.

Copy Source Selection

With this option enabled, the **Cloning** brush reproduces the source selection information in the destination selection. This option is valid only with the **Cloning** method.

4-Point Tiling

With this option enabled, your clone source is tiled in a repeating pattern.

Rake Palette

The **Rake** palette lets you control the sophisticated features of a Rake stroke, which maintains the angle of the brush head as the stroke changes direction. As the brush turns, bristles come in and out of contact.

The number of dabs in a Rake brush variant is set in the **Spacing** palette.
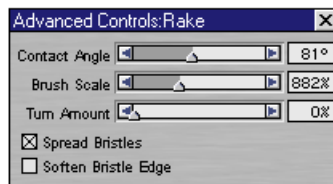
The Rake palette controls options specific to the Rake stroke.

Contact Angle

The **Contact Angle** slider adjusts how much of the brush touches the painting surface. Moving the slider to the left creates a low contact angle—few of the dabs are in contact with the paper.

Moving the slider all the way to the right creates a high contact angle—all of the dabs contact the paper.
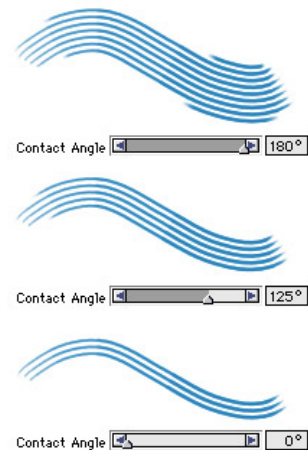
The Contact Angle slider controls how much of the brush contacts the painting surface.

Brush Scale

The **Brush Scale** slider controls the spacing between the individual dabs that comprise the Rake (the size of each dab is determined in the **Brushes palette: Controls menu► Size palette**).

When the scale is 100%, the stroke width equals "the dab width times the number of dabs." When the scale is less than 100%, the dabs overlap. Overlapping dabs create a natural, subtle stroke when used with **Turn Amount** and **Soften Bristle Edge**.

The Brush Scale slider controls the spacing between the individual dabs in the rake. Higher Brush Scale settings spread the dabs.

Turn Amount

When you turn a real brush to paint a curve, bristles at the edges move in and out of contact with the painting surface, depending on the brush's location on the curve (inside or outside).

The **Turn Amount** slider simulates this bristle displacement. As the turn amount increases, the rake bristles displacement changes based on the direction of the brush.

The Turn Amount slider controls the displacement of inside and outside bristles.

Spread Bristles

The **Spread Bristles** option dynamically adjusts the brush scale based on pressure. The harder you press, the more the brush fans out.

The Spread Bristles option controls the spacing of the bristles. The harder you press, the more the bristles spread. If you want the Spread constant, disable this option.

Soften Bristle Edge

This option makes a brush's outer dabs semi-transparent. This option is particularly nice when used with **Turn Amount**.

The Soften Bristle Edge option turns the outer dabs semi-transparent.

Well Palette

The **Well** palette controls how a brush conveys its medium (color) to the paper. The **Resaturation**, **Bleed**, and **Dryout** controls work together to determine how much color a brush has at the start and finish of a stroke.

To understand Well, open the Brush Look Designer. Make a stroke then watch it update as you make adjustments to Well sliders.

The Well has no effect on brushes that only move existing color.

The Well palette controls how a brush conveys its medium to the paper. [0462pw redo for resolution]

Resaturation

Resaturation controls the amount that color is replenished in a stroke. If Resaturation is zero, the brush will never get any color. When Resaturation is below 10% (and Bleed is less), the brush stroke fades in gently.

The Resaturation slider controls the amount of color replenished in the stroke.

Bleed

The **Bleed** slider controls how much the brush colors mix with the underlying colors—including the paper color. Moving the slider to the right increases the extent of bleed.

When **Bleed** is higher than resaturation, more color bleeds than covers, so the stroke will never reach full opacity.

The Bleed slider controls the amount of underlying color mixed in with the selected color.

Dryout

The **Dryout** slider determines how quickly a brush runs out of its medium. **Dryout** is measured in pixels. Moving the slider to the left makes a brush's reservoir empty more quickly. This can lead to brush strokes that fade out gently.

When the slider is set to the far right, the brush never runs out of color.

Dryout works in conjunction with **Bleed**, so **Bleed** must be above zero to take advantage of **Dryout**. You can modulate the **Dryout** effect by changing the **Bleed** setting. Use the **Brush Look Designer** described in to see the results of different **Bleed/Dryout** settings.

The Dryout slider controls how fast the brush runs out of medium.

Water Palette

The **Water** palette works with Painter's wet layer. The wet layer adds a color layer to an image that allows for transparent washes of color without overwriting the underlying image. The Wet Layer is used only when you paint with a wet method brush, like **Water Color**.
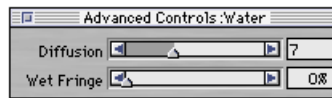
Use the Water palette to control the wet layer.

Diffusion

Diffusion controls the amount a stroke spreads out and blurs. High diffusion creates wonderful, soft edges that feather into the grain. In terms of natural watercolors: low **Diffusion** is like painting on dry paper, and high **Diffusion** corresponds to painting on wet, absorbent paper.

You can "post-diffuse" the wet layer by selecting the area you wish to diffuse further and hitting the **Shift-D** keyboard shortcut. Repeat the command until you're satisfied with the result.
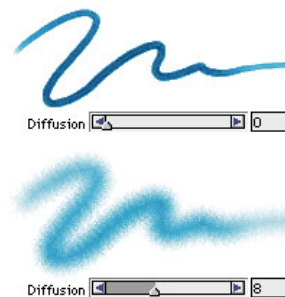
Use the Diffusion slider to control the spread of the stroke.

Wet Fringe

Wet Fringe controls the pooling of colors. When you paint with the Water Color variants, you'll notice that color collects at the edges of the stroke. This follows the behavior of natural watercolor.

By adjusting the **Wet Fringe** slider you can control the amount of color at the edge for all strokes in the wet layer. You can't adjust pooling after you dry strokes.

Watch the edges of your watercolor strokes darken as you drag the slider to the right. To minimize pooling, move the slider to the left.
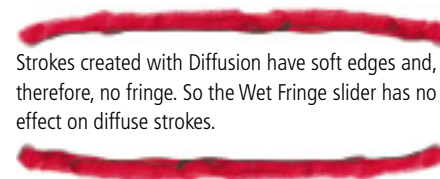
Strokes created with Diffusion have soft edges and, therefore, no fringe. So the Wet Fringe slider has no effect on diffuse strokes.

To get different pooling amounts for individual strokes: Adjust the **Wet Fringe** slider for one or more strokes, then dry them. Paint more watercolor strokes, and adjust the **Wet Fringe** slider again.

The Wet Fringe slider to control the pooling of colors at the edge of a stroke.

Sliders Palette

The **Sliders** palette lets you control brush effects based on a number of input factors. For example, many brushes vary their opacity or width in response to changes in stylus pressure. This is merely their default setting. You can use the sliders to vary these effects in response to other factors, like stroke direction or velocity. This is the kind of modification you'll want to make if you're using a mouse to draw with and don't have access to pressure information.

But the sliders have far more interesting and sophisticated uses. For example, you can base dab angle on the clone source. For information on dab angles and setting the
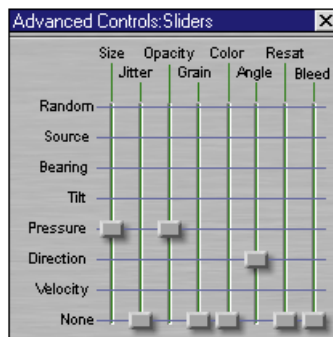
Use the Sliders palette to define more control over brush behavior.

Angle Range, refer to "Size Palette" on page 57. For information on cloning, refer to Chapter 5, "Cloning and Tracing."

This is particularly interesting when the stroke has enough spacing to separate the dabs. As you stroke the brush in the clone document, Painter sets the dab angle based on luminance of the Source. The dabs look like paint strokes that are contoured to the image.

The **Sliders** palette is set up as a matrix. Drag the slider for one of the eight main brush components to link it to one of the eight control factors.

Control Factors

Random

Random adjusts the component at random.
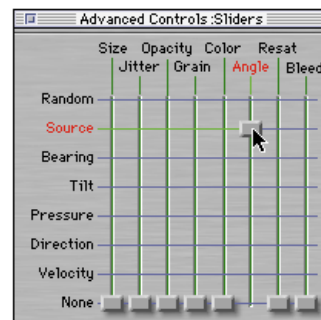
The Sliders palette is a component matrix, controlling eight different brush factors.

Source

Source adjusts the component based on the luminance of the clone source. Higher luminance (closer to white) increases the setting for that component—for example, a wider stroke.

If you set a component to **Source**, but the brush effect is opposite of what you want; invert the source image. Choose `Effects menu▶ Tonal Control▶ Negative`.

Bearing

Bearing adjusts the component based on the direction in which the stylus points. Not all stylus models convey this information.

Tilt

Tilt adjusts the component based on the angle of the stylus from the tablet. Not all stylus models convey this information.

Pressure

Pressure adjusts the component based on stylus pressure. Greater pressure increases the setting for that component.

Direction

Direction adjusts the selected brush component based on the direction of the stroke.

Velocity

Velocity adjusts the component based on the dragging speed. Dragging quickly minimizes the setting. Dragging slower increases it.

None

None applies no adjustment to the component.

Brush Components

Size

The **Size** slider determines how Painter should vary the width of the brush stroke. The range from minimum to maximum is determined by the ±Size control in the **Brushes palette: Controls menu▸ Size palette**. The most common source for size variance is Pressure. The **Scratchboard** tool is a good example of a brush with **Size** based on **Pressure**.

Jitter

The **Jitter** slider determines when (how often) Painter should jitter the brush stroke. The amount of jitter is controlled by the Dab Location **Placement** slider on the **Brushes palette: Controls menu▸ Random palette**. A typical source for controlling jitter is **Velocity**. Jitter will reduce as the brush speeds up.

Opacity

The **Opacity** slider determines how Painter should vary the density of the medium. The **Opacity** slider in the **Controls palette: Brush tool** will establish the maximum opacity of the brush. The opacity of the Airbrush is determined by pressure. More pressure yields more opaque strokes.

Grain

The **Grain** slider determines where Painter should reveal paper texture in a brush stroke. The **Grain** slider in the **Controls palette: Brush tool** sets the maximum amount of grain in the brush. The Colored Pencil variant has its Grain component determined by pressure. Increasing pressure causes the pencil to "dig into" the paper.

Color

The **Color** slider determines where Painter should use the primary or secondary color. You can create a duotone effect by setting color to Original Luminance and painting

into a clone. The color of the brush will be determined by the light and dark areas of the source.

Angle

The **Angle** slider determines how Painter orients the brush dabs. The **Ang Rng** setting in the **Brushes palette: Controls menu▸ Size palette** must be greater than 0.0 and **Squeeze** must be less than 100% in order for brush angles to vary. The **Impressionist** and **Oil Pastel** variants will change dab angles based on the direction of the stroke.

Resat

The **Resaturation** slider determines how Painter controls resaturation—how much color is replenished in a stroke. Resaturation amount is set in the **Brushes palette: Controls menu▸ Well palette**. When used in conjunction with **Bleed**, setting the **Resat** component to **Pressure** can create a brush that behaves like a drying marker.

Bleed

The **Bleed** slider determines how Painter controls bleed—how much colors mix. Bleed amount is set in the **Brushes palette: Controls menu▸ Well palette**. When used in conjunction with **Resat**, setting the **Bleed** component to **Pressure** can create a brush that behaves like a drying marker.

Customizing the Controls Palette

The **Controls palette: Brush tool** holds basic brush controls, including size, opacity and grain. If you like, you can add controls to the palette for specific variants. The controls you add are copies of the sliders and check boxes from the relevant **Brushes palette: Controls menu** palettes.

For example, as you work, you may find that you frequently use the **Well** palette when painting with the **Felt Marker** variant. You can customize the **Controls palette: Brush tool** to hold the **Well** palette sliders (Resaturation, Bleed, Dryout) whenever you choose the **Felt Marker**.

To customize the Controls palette: Brush tool:

1 Choose the variant whose **Controls** palette display you want to customize.

2 Choose **Brushes palette: Controls menu▶ Custom Controls**.

3 Use the **Category** pop-up to choose the palette that holds the features you want to add. The dialog updates to lists the features for the selected category.

4 Enable the check box for each feature you want.

The **Controls** palette can hold a limited number of items. Add only the most important features.

The Controls palette: Brush tool customized for the Felt Marker Variant. These added controls are only a suggestion. You can add any relevant controls you like.

Saving Customized Brush Variants

When you've customized a variant the way you like it, you can use it immediately. Unless you save them, changes you make to brushes disappear as soon as you switch to another variant or brush. If you want to keep a customized variant, save it as a new variant or save changes to the current variant.

Variant settings are included when you save a Brush Look. Saving Brush Looks is covered in .

To save the current settings as a variant of the selected brush:

1 Choose **Brushes palette: Variant menu▶ Save Variant**. The **Save Variant** dialog appears:

Use the Save Variant dialog to save any changes you make to a brush variant.

2 Painter prompts you to name the variant. If you want the primary and secondary current colors saved with the variant, Enable **Save Current Colors**.

If this variant uses the **Color** palette's **Clone Color** option, it is not necessary to enable **Save Current** Colors.

3 Type a name for the new variant, then click **OK**.

Your new variant appears on the variant pop-up for the current brush category.

Each brush may hold up to 32 variants. It's easier to find the variant you're looking for when the list is shorter. You can manage the number of variants under a brush by creating new brushes and saving the variants you create there.

Adding variants to a brush library increases memory requirements. There is a limit to the memory allowed in a brush library, and hence, a limit to the number of variants allowed. Avoid problems by creating new libraries and saving variants there.

Hot Tip: If you have an item on a custom palette from a secondary library, choosing it will automatically load the other library. You can use this feature to create shortcuts to your other brush libraries.

To save changes to an existing variant:

Choose **Brushes palette: Variant menu▶ Save Built Variant**. Your changes are incorporated in the variant.

To return the current variant to the factory settings:

You might change one of Painter's default variants, then decide that you want the original back.

1 Choose the variant from the **Brush palette: Variant pop-up**.

2 Choose **Brushes palette: Variant menu▶ Restore Default Variant**.

To delete a variant:

1 Choose the variant from the **Brush palette: Variant pop-up**.

2 Choose **Brushes palette: Variant menu▶ Delete Variant**. Painter asks you to confirm that you want to delete the variant. Click **Yes** to delete the variant.

Copying Variants between Brushes

If you create a variant, then decide you want it under a different brush, you can copy it there. After copying, you can delete the original.

To copy a variant to a different brush:

1 Choose the variant you want to copy from the **Brush palette: Variant pop-up**.

2 Choose **Brushes palette: Variant menu▶ Copy Variant**.

3 In the dialog, choose the destination Brush from the pop-up. Then click **OK**.

Capturing Brush Dabs

You can create your own brush dab shapes. Any shape is possible.
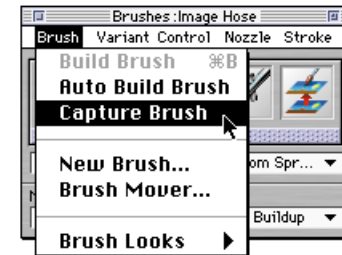
When you've created a shape you like, select and capture it.

To create a brush dab shape:

1 On a white background, draw the brush shape in black. Use shades of gray to define partially transparent areas of the brush.

A captured brush that is set to follow stroke direction must face 3 o'clock or the right hand side.

2 Choose the **Rectangular Selection** tool. Hold down the **Shift** key and drag across your brush shape to create a square selection.

Painter uses the selected area to map the brush size. When the brush is built, this area is sampled to compute each brush dab. When the original area must be scaled to the size of the brush dab, sampling can appear aliased. The greater the scaling, the more aliasing will be apparent. To prevent this, create a shape with soft (grayscale) edges and draw it close to the size you'll use it.

3 Choose the brush where you'll want to save a variant for the captured dab shape.

4 Choose **Brushes palette: Brushes menu▸ Capture Brush**.

5 Take a look at the brush dab in the **Brushes palette: Controls menu▸ Size palette**. Change its size, squeeze, and angle, if necessary. Click **Build** if Painter doesn't automatically build your brush.

6 Draw with the brush. If you like the results, save it as a new variant.
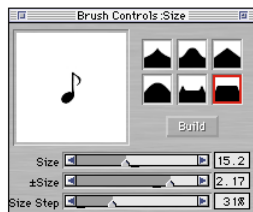
You can paint with a captured brush as you would with other brushes.

Creating a New Brush

The brushes that appears with icons in the **Brushes** palette are containers for collections of similar variants. You can add your own brush categories to Painter's **Brushes** palette.

You might want to create a brush if you've customized a medium and you wanted to keep its tools organized.

To create a new brush:

1 Draw a small image to use as the palette icon for the new brush.

2 Choose the **Rectangular Selection** tool. Hold down the **Shift** key and drag across the image to create a square selection.

3 Choose **Brushes palette: Brushes menu▸ New Brush**.

4 Painter will prompt you to name the brush. Type a name, then click **OK**.

Your new brush and its icon now appear on the **Brushes** palette.

When you create a new brush, the first thing you'll want to do is save some variants to it.

For efficiency on systems with limited RAM, keep brush libraries small. Painter will be more efficient if you store the brush variants you create into several libraries. When you want to use these special brushes, load the alternate libraries.

Brush Looks

A brush look is a variant that has a paper texture assigned to it. A variant does not know about texture. The Brush Look, on the other hand, associates a particular texture with the particular variant to save a "look." Regardless of a document's current paper texture when you select a Brush Look, you will be using the paper that's part of that look.

Using the Brush Look Designer

You don't need to use the Brush Look Designer to customize and save brushes. If you prefer, you can adjust controls, then draw in your document to see their effect. The Brush Look Designer isn't *necessary* for adjusting brushes, but it does make the job easier.

To use the Brush Look Designer:

1 Choose **Brushes palette: Brushes menu▶ Brush Looks▶ Brush Look Designer**.

2 Stroke in the scratchpad to see how your brush looks.

3 You can change backgrounds by clicking the boxes at the bottom of the window. For example, use the striped background to see the smear of drip method brushes. If you're working on an eraser or other

Brush Look Designer palette.

brush that changes existing colors, you won't see its stroke on the white background. Use a colored or striped background instead.

To change the background color, select a color on the **Art Materials: Color palette**, then click the **Set Colors** button on the Brush Look Designer window.

4 Use the features described in this chapter to customize the brush. You don't necessarily have to know what a slider does. Just try it. If you like the result, keep it. If not, set it back to where it was.

5 You might want to draw strokes on the scratchpad to test the feel of your brush.

Most of your changes show up on the Brush Look Designer scratchpad right away. To see changes you made on the

Brushes palette: Controls menu▶ Size palette, however, you must first click **Build**, or press **Command-B/Ctrl+B**.

6 Choose different papers from the **Art Materials: Paper palette**. The **Brush Look Designer** shows the expected results.

7 When you've got the brush variant working the way you want it, you can save it as a Brush Look (see below) or click **Done** to close the **Brush Look Designer**. You must close the **Brush Look Designer** before you can save the variant.

Saving a Brush Look

You can save a brush look so you can use it later. A saved brush look keeps all of the variant settings plus the paper setting.

To save a brush look:

1 Use the **Brush Look Designer** (**Brushes palette: Brushes menu▶ Brush Looks▶ Brush Look Designer**) to create the brush effect you want, including its paper texture.

2 Click **Save**. Painter prompts you to name the new brush look.

The content of the scratchpad becomes the icon of this Brush Look in the **Looks** palette. This is a handy visual reminder of what this Brush Look does.

Saved brush looks appear in the Brush Looks palette.

In the case of the **Image Hose** brush, the brush look may have a particular Nozzle file attached. For more information on working with the Image Hose and Nozzle files, refer to Chapter 7, "The Image Hose."

Using Saved Brush Looks

To use a saved brush look:

1 Choose **Brushes palette: Brush menu▸ Brush Looks▸ Brush Looks**. The **Looks** palette appears.

2 Click the icon for the look you want. You can also use the Library pop-up to select it by name.

Painter loads the correct variant and paper for the saved brush look. You can start painting now.

Brush and Brush Looks Libraries

Painter comes with several brush libraries. You can create new libraries for brushes and brush looks and add your custom brushes to them. You can create as many brush libraries as you want.

Library features are identical for all resource types (Papers, Brushes, Brush Looks, Patterns, Grads, Weaves, Scripts, Floaters and Selections portfolios). For more information on Library features, refer to "Libraries and Movers" on page 10

It's a good idea to limit the number of tools in a library. This makes it easier to find a particular tool and helps Painter manage memory.

Brushes are loaded into memory when you launch Painter, so adding variants to the default brush library increases Painter's need for RAM. You'll want to organize new brushes into secondary libraries for better efficiency. When you want a different brush set, switch libraries.

Document Cloning

File
New... ⌘N
Open... ⌘O
Place...
Close ⌘W

Clone
Clone Source ▸ ✓Lamb @ 50%
        Clone of Lamb @ 50%

Save ⌘S
Save As...
Revert
Get Info... ⌘I

Acquire ▸
Export ▸

Page Setup...
Print... ⌘P

Quit ⌘Q
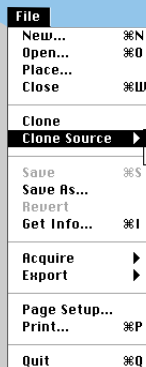
Reference Point

To specify a clone source from open documents choose Clone Source from the File menu

To clone the whole image, generating a new clone document, choose Clone from the File menu

Lamb @ 50%

Clone of Lamb @ 100%

Source Document

Clone Document

Clone from one document to another

Offset Cloning

In Like A Lion
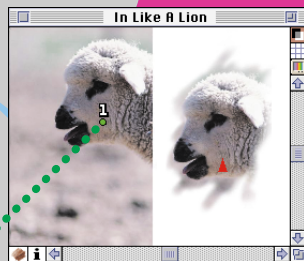
Reference Point

Clone from one part of a document to another part of the same document

Multiple Reference Points

Multi-Point Cloning

Salad for Lunch Part 2B @ 25%
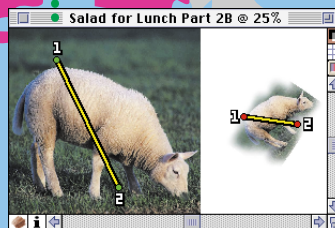
Clone and Transform at the same time based on reference points

5

Cloning and Tracing

Understanding Cloning and Tracing

Cloning is a feature that will help you create great art quickly and easily. Cloning is the process of taking imagery from one area (the source) and re-creating it in another (the destination). Cloning is a two-step process: First you set the clone source, then you set and work in the

destination. The source and destination may be in separate documents or in different places of the same document.

The cloning method brush variants are the most common way to develop imagery in the clone destination. These variants effectively "filter" the source imagery, reproducing it in an artistic style—like pastel chalk or water colors. Advanced, multi-point cloning lets you transform (rotate, scale, slant, perspective) the imagery you clone.

Painter offers other interesting ways to take advantage of the clone source-destination relationship. **Tracing Paper** is one.

Cloning has several levels of complexity. This chapter begins with basic work, then moves into advanced territory.

Cloning is the easiest way to create Natural-Media renderings.

Cloning a Document

The easiest way to create the clone source-destination relationship between two documents is to clone a file.

To clone a document:

1 Open an image file. This document will be the source document. A good source document contains well defined imagery.

2 Choose **File menu▶ Clone**. Painter creates a duplicate (clone) of the document. This file appears with the words "Clone of" preceding the original document's name in the title bar.
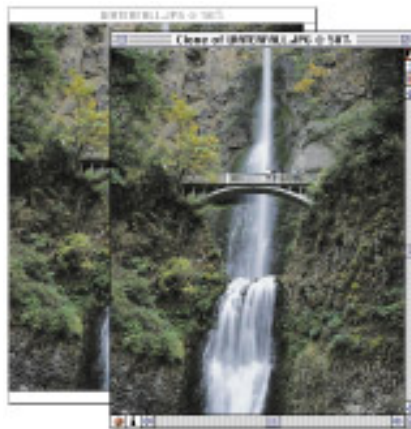
Choose the Clone command to create a clone file.

If your source image has floaters, cloning creates a fully composited copy. You can take advantage of this to automatically drop all your floaters or flatten your image. A flattened image will download faster to your laserprinter.

The clone file is more than a copy. It maintains a pixel-for-pixel correspondence with its source document. For this reason, the source must remain open while you work in the clone.

There are several ways you can take advantage of the clone-source relationship:

- To draw using Tracing Paper. See "Using Tracing Paper" on page 81.

- To paint with **Cloner** brushes described later in this chapter.

- To load non-cloning brushes with colors from the clone source (using the **Clone Color** option on the **Color** palette).

- To create a mosaic or tesselation. Refer to Chapter 6, "Mosaics."

- To control image effects (with the **Using** pop-up set to **Original Luminance**).

- To control brush variables for painting (using the **Source** setting in the **Sliders** palette).

- To develop a selection/user mask. Refer to Chapter 9, "Selections and Masks."

Using Tracing Paper

After cloning a document, you can set up an on-screen light box using Painter's Tracing Paper feature.

To use **Tracing Paper**, the source and clone documents must be the same size.

To trace an image:

1 After cloning the document you wish to trace (**File menu▶ Clone**), choose **Select menu▶ Select All** and press the **Delete/Backspace** key to clear the entire canvas.

2 Choose **Canvas menu▶ Tracing Paper**. You may also press **Command-T/Ctrl+T** or click the **Tracing Paper** icon in the vertical scroll bar. A 50% ghost of the source image appears.

Click the Tracing Paper icon to toggle tracing paper on and off.

Now it's easy to trace over the image using any brush. Your brush strokes appear at 50% opacity when Tracing Paper is turned on.
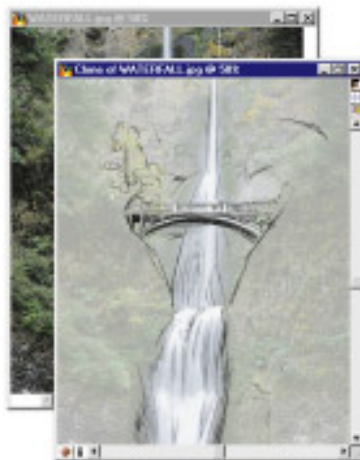
Use the Tracing Paper feature to view the clone source for tracing.

3 After tracing the image, turn **Tracing Paper** off. Choose **Canvas menu▶ Tracing Paper**, press **Command-T/Ctrl+T** or click the **Tracing Paper** icon again. The faint original image disappears and your brush strokes appear at 100% opacity. If you want to keep tracing, just turn Tracing Paper on again.

When you turn Tracing Paper off, you see your tracing.

Changing Clone Sources

After you've worked with cloning a bit, you'll want more flexibility in setting up cloning relationships. Painter lets you set any open document as the clone source.

You can do this to re-establish the source-destination relationship between files. You might also do this to choose special source imagery for controlling an image effect.

To set an open document as the clone source:

1 Open the document you want to clone (**File menu▸ Open**).

2 Choose **File menu▸ Clone Source** and choose the name of the document you want to clone.

Whichever document you work in becomes the destination.

If you ever lose track, you can find out which file is the clone source by choosing **File menu▸ Clone Source** to see which file name is checked.

If you have a document open, you can make it the clone source for the next file you open: Hold down the **Command/Ctrl** key and choose **File menu▸ Clone**. The **Open** dialog appears. Use it to choose the file that will be the clone destination document.

Painting in the Clone

Painting with the cloning brushes is similar to painting with any of Painter's tools, except the cloning variants take their color information from the clone source instead of the **Color** palette.

Offset cloning and other more advanced techniques are covered in .

To paint with the cloning brushes:

1 After cloning the document you wish to paint (**File menu▸ Clone**), choose **Edit menu▸ Select All** and press the **Delete/Backspace** key to clear the entire canvas.

Some artists use **Edit menu▸ Fade** after clearing the canvas to bring back some of the imagery.

2 Choose the **Cloners** brush from the **Brushes** palette.

Use the Cloners brush variants to clone imagery one stroke at a time.

3 Select a Cloners brush variant from the **Variant** pop-up menu.
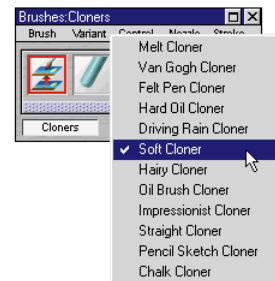
You can select a variant for the Cloners brush from the Variant pop-up.

The **Straight Cloner** variant reproduces the source imagery directly. The **Soft Cloner** variant reproduces with low opacity and soft edges. Other variants use paper grain and specialized dabs for particular media effects. For example, the **Chalk Cloner** copies the source image in the style of pastel chalk. Most of these other Cloner variants use the **Color** palette **Clone Color** option, not the cloning method.

All of the brush variants, including the clone variants are illustrated in Appendix A, "Painter Brush Variants."

The Oil Brush Cloner is just one of the cool cloning variants.

4 Mark in the image. As with all of Painter's brushes, you can also adjust the size, opacity and grain penetration on the **Controls palette: Brush tool**.

When you paint, the **Cloners** brushes pick up color from the original, while you control the size and direction of brush strokes. It's the best way to get Natural-Media renderings from photographic source material.
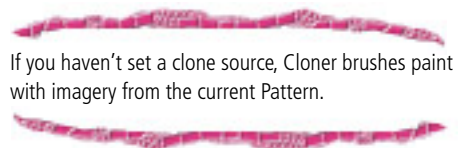
If you haven't set a clone source, Cloner brushes paint with imagery from the current Pattern.

You can add to and refine the Cloner variants with Painter's other customizing functions described in Chapter 4, "Advanced Painting."
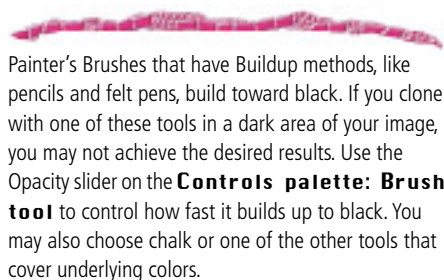
Painter's Brushes that have Buildup methods, like pencils and felt pens, build toward black. If you clone with one of these tools in a dark area of your image, you may not achieve the desired results. Use the Opacity slider on the **Controls palette: Brush tool** to control how fast it builds up to black. You may also choose chalk or one of the other tools that cover underlying colors.

Using Auto Clone

Using a cloning brush can take a long time if you're working on a large area. You can have Painter make the brush dabs for you by using the Auto Clone feature.

To fill a cloned area automatically:

1 Select the tool you want to clone with. Auto Clone works well with the **Driving Rain** Cloner and the **Seurat** variant of the **Artist** brush. If you want the **Seurat** variant to pick up color from the source document, click **Clone Color** on the **Art Materials: Color palette**.

If you want to vary the color of the dabs more, expand the **Color** palette. Then set the ±**H**, ±**S**, and ±**V** Color Variability sliders to 15% each. For information

about the **Color** palette, refer to "Working with Colors: The Color Palette" on page 127.

2 Without an active selection, you'll apply the effect to the entire canvas. You may select part of your image to constrain the effect. For more information, refer to Chapter 9, "Selections and Masks."

3 Choose **Effects menu▸ Esoterica ▸ Auto Clone**. Painter applies dabs of paint automatically to the selected area.

4 When the right amount of the clone has filled-in to suit your design, click anywhere in the image to stop Auto Clone.

If you apply Auto Clone to a large area, the paint may fill areas sparsely. If you click to stop the Auto Clone, it stops at that point. It won't automatically fill-in the selected area. To fill an area solid, you must let the Auto Clone finish.

When you use Auto Clone with the Felt Pen Cloner and other tools that turn black as you repeat strokes, areas darken rapidly. You can slow down the color buildup and still use Auto Clone by lowering the **Opacity** slider on the **Controls** palette. You can also change the color values in the source.

Another way to automate cloning is by recording and playing back individual brush strokes. Refer to

You can also clone by recording and playing back brush strokes.

Using Auto Van Gogh

The **Effects menu▶ Esoterica▶ Auto Van Gogh** effect works with the Auto Van Gogh variant of the Artists brush. The effect places directional brush strokes to produce a Van Gogh-like rendition of an image.
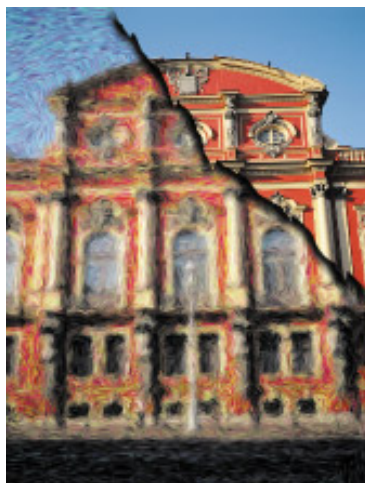
Auto Van Gogh is an effect that places directional strokes based on clone source.

To apply Auto Van Gogh to an image:

1 Select the image you want to use.

2 Choose **File menu▶ Clone** to create a clone.

3 Choose the **Artist** brush from the **Brushes** palette.

4 From the **Brushes palette: Variant pop-up**, choose the **Auto Van Gogh** variant of the **Artists** brush.

5 Adjust color variability on the **Art Materials: Color palette**.

6 Choose **Effects menu▶ Esoterica▶ Auto Van Gogh**.

Painter will now create a Van Gogh rendering of your image. Relax. This effect can take a little while.

Auto Van Gogh will not work unless you have first selected the **Auto Van Gogh** variant of the Artists brush.

Point-to-Point Cloning

Point-to-point cloning lets you clone within a document and lets you clone between different areas of separate documents. Point-to-point is also called offset cloning.

To clone point-to-point within a document:

1 Choose a cloning brush or enable the **Color palette: Clone Color** option for a regular brush.

2 With the **Control/Shift** key held down, click the reference point for the source area.

3 Go to the destination area and begin painting.

You can also set the clone destination before painting by clicking with the **Control-Shift**/**Ctrl+Shift** keys.

Cloning within a document with the source region crosshairs showing.

To clone point-to-point between documents:

1 Choose a cloning brush or enable the **Color palette: Clone Color** option for a regular brush.

2 Select the source document. With the **Control**/**Shift** key held down, click the reference point in the source area.

3 Select the destination document. Start painting at the point you want to correspond to the source reference.

By default, you will see a marker on the source area being cloned. This preference is found in the General Preferences dialog (**Edit menu▸ Preferences▸ General**). When the checkbox **Indicate clone source with crosshairs while cloning** is enabled, a crosshairs will appear over the source indicating what part of the image you are painting with.

Turning Painter's Other Brushes into Cloners

Painter offers two ways to get other brushes to act like cloners: setting the **Clone Color** option and switching to the Cloning method.

Clone Color

You can turn almost any brush into a Cloner by setting the **Clone Color** option in the **Color** palette. This lets a brush pick up color from the source image while staying true to its own stroke nature. The **Clone Color** option is also useful for creating mosaics and tessellations based on source imagery.

The **Clone Color** option uses a single, averaged color from the source for each brush dab. This results in an

Choose a regular brush and paint with colors from the clone source (instead of the current color) by enabling Clone Color on the Color palette.

approximation of the original. The **Clone Color** option can be used to create an artistic impression of the source.

Cloning Method

You can turn almost any brush into a Cloner by setting its method to Cloning and choosing the cloning method subcategory appropriate to the intended media style.
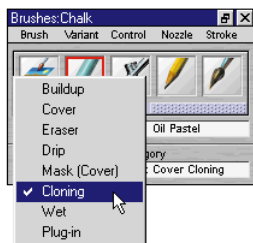
Use any brush as a cloner by selecting Cloning from the Method pop-up.

Because the cloning methods use a full set of pixels from the original document for each brush dab, you get a truer copy of the original than you do with the **Clone Color** option. Also, unlike using clone color, cloning methods preserve the original image's texture in the clone. Cloning methods are good to use when you want to re-create portions of the source image precisely.

Here's a brief description of the cloning method subcategories. For a more in-depth discussion of methods, refer to "Changing Methods" on page 50.

Hard Cover Cloning

Gives you semi-anti-aliased brush strokes that hide underlying strokes.

Soft Cover Cloning

Produces anti-aliased brush strokes that cover layered ones.

Grainy Hard Cover Cloning

Works like **Hard Cover Cloning** but brush strokes also interact with paper grain.

Grainy Soft Cover Cloning

Works like **Soft Cover Cloning** but brush strokes also interact with paper grain.

Drip Cloning

Pushes color around as if it were wet, cloning the original with distortion based on your stroke.

Fine-Tuning the Cloning Methods

You can customize and fine-tune your cloning methods from within the **Brushes** palette.

To fine-tune the cloning methods:

1 Choose **Brushes palette: Controls menu▸ Random**.

2 Adjust the sliders to change the character of the variant. You have the following options:
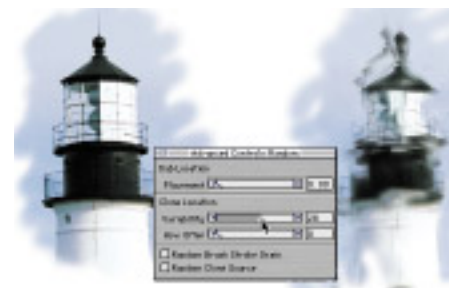
The Random palette can be used to fine-tune cloning behavior.

Moving the **Variability** slider to the right softens brush strokes and works best with the bristle brushes for creating an impressionistic effect.

Moving the **Variability** slider a bit to the right and the **How Often** slider to the left gives drawing tools a sketchy feel.

Random Clone Source makes the cloning methods randomly pick up pieces from the source document. What you get with your brush is random snippets of the image.

Random Brush Stroke Grain makes the cloning methods pick up paper grain at random from the current paper grain.

For more information about the **Random** palette, see "Random Palette" on page 63.

Advanced Cloning

This section describes cloning with transformations and special features for cloning with an active selection.

The Super Cloner Brush

The **Super Cloner** brush holds variants that use multi-point cloning to apply a transform to the source imagery when you clone it. You can load the **Super Cloner** brush from the **Shortcut to New Brushes Custom** palette by clicking its icon. You may also choose **Brushes palette: Brush pop-up▶ Load Library**.

Multi-point cloning requires you to set multiple source and destination reference points. The following sections describe the multi-point cloning types and how to use them.

The Cloning Control Palette

You can choose the type of cloning and other features on the **Brushes palette: Controls menu▶ Cloning**.

The following section describes the **Cloning** palette features: You can use this palette to give any cloning brush Super Cloner power.
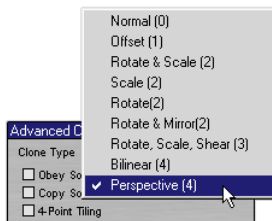
The Cloning palette offers advanced cloning features.

Cloning Types

Painter lets you establish several different relationships between the clone source and destination. These are characterized by the number of reference points used.

For each number of reference points, different transformations are possible. All of these cloning types are valid for cloning method brushes and brushes that use the **Clone Color** option or the clone source such as **Fill**.

For each item in the **Clone Type** pop-up, the number of source and destination reference points required is shown in parentheses.

You must set the source and destination references before using any multi-point cloning type.

Normal (0)

The reference is between the top, left corners of the source and destination documents and patterns. This means that the pixels of the destination document correspond directly with the pixels in the source document. This type of cloning is valid only between documents. No transformations occur.

Zero-point cloning is the basic cloning between documents (**File menu▶ Clone**) described in "Cloning a Document" on page 80.

Offset (1)

The brush offsets the imagery. The source and destination areas can be separate places in the same or different documents.

Offset cloning is the basic point-to-point cloning described in "Point-to-Point Cloning" on page 84. Offset cloning is quite useful for retouching photographs.

Rotate & Scale (2)

The brush rotates and scales the source imagery.

Scale (2)

The brush scales the source imagery. The distance between the two destination points in relation to the distance between the two source points determines the scaling transformation.

Cloning with rotate and scale. Note that the source and destination reference points are numbered and connected by a line.

Cloning with scale.

Rotate (2)

The brush rotates the source imagery. The line between the two destination points in relation to the line between the two source points determines the rotation transformation.

Cloning with rotating.

Rotate & Mirror (2)

The brush rotates and mirrors (flips) the source imagery.
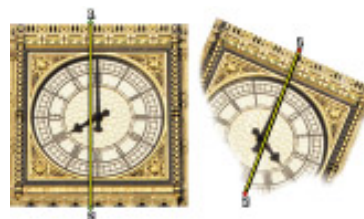
Cloning with rotate and mirror.

Rotate, Scale & Shear (3)

The brush rotates, scales and shears (slants) the source imagery. The relative positions of the three source and destination reference points determine the transformation effect.

Cloning with rotate, scale and shear.

Bilinear (4)

The brush applies a bilinear warp to the source imagery. The relative positions of the four source and destination points describe the bilinear transformation.

Cloning with bilinear.

Perspective (4)

The brush applies perspective to the source imagery. The relative positions of the four source and destination points describe the perspective transformation.
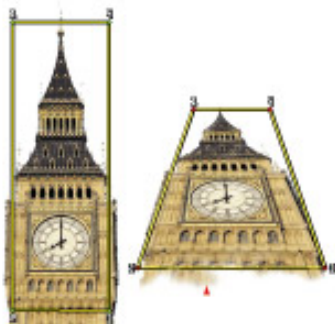
Cloning with perspective.

Setting Source and Destination Reference Points

You must set the correct number of source and destination points before you can paint with any multi-point cloner brush.

The source points may be in one document and the destination points may be in another document, or both sets may be in the same document.

You set the source and destination reference points by clicking with key combinations. After you set the source and destination reference points, you can start painting.

To set the source reference points:

1 Choose a **Super Cloner** brush variant or select the cloning type you want for another cloning variant.

You can load the **Super Cloner** brush by clicking its icon on the **Shortcut to New Brushes Custom** palette or by loading its brush library from the **New Brushes** folder.

2 Note the number of reference points required for the selected cloning type. The number is shown in parentheses in the **Clone Type** pop-up. For example, scale requires two reference points.

3 Hold down the **Control**/**Shift** key and click in the source area you want. Click once for each reference point required in the selected cloning type.

The points appear with numbers beside them (1 through 4). You can drag these points (with the **Control**/**Shift** key down) to reposition them.

Setting two source reference points in preparation for Rotate & Scale cloning.

Painter automatically places source points in the corners of clone source files and patterns. These corner source points are ideal for perspective cloning with 4-point tiling. If you don't want to use the defaults, you can move them or set your own source points. To move the points in a pattern, you'll need to check out the pattern. Choose **Art Materials palette: Pattern menu▸ Check Out Pattern** and set the source points in the "checked out pattern" window. For more information on Check Out Pattern, refer to "Editing the Pattern tile with Check Out Pattern" on page 143.

To set the destination reference points:

1 If the destination is in a different document, move to that document.

2 Hold down **Control-Shift**/**Ctrl+Shift** and click in the destination area you want. Click once for each reference point required in the selected cloning type.

The points appear with numbers beside them (1 through 4). You can drag these points (with the **Control-Shift**/**Ctrl+Shift** keys down) to reposition them.

Setting two destination reference points in preparation for Rotate & Scale cloning.

Sample source-destination reference points for Rotate, Scale & Shear cloning.

Sample source-destination reference points for Perspective cloning.

Using the Source Selection in the Clone Destination

The **Brushes palette: Controls menu▸ Cloning palette** offers two options for using the active selection from the source region.

Using the source selection requires the cloning method. It does not work for brushes of other methods that use the **Clone Color** option in the **Color** palette.

Obey Source Selection

Obey Source Selection makes your brush strokes respect an active selection in the source region. When you paint in the destination, your strokes are constrained to a region that corresponds to the source selection. For cloning types that apply a transform, the selection is correctly transformed.

Copy Source Selection

Copy Source Selection copies an active selection in the source region. When you paint in the destination, your strokes clone the selection's pixels as well as the RGB pixels. For cloning types that apply a transform, the copied selection has the transform.

Copy Source Selection is often used together with **Obey Source Selection**.

Use Obey Source Selection when you don't want to clone imagery that surrounds your subject.

Use Copy Source Selection when you want to clone the selection as well. Notice the marching ants.

1 Set up a selection for the source region. The selection should closely outline the region you want to use. For information on setting up a selection, refer to Chapter 9, "Selections and Masks."

2 Choose the cloning brush you want to use. If necessary, choose a **Clone Type** from the **Cloning** palette.

3 Enable the **Cloning** palette **source selection** options you want—**Obey**, **Copy** or both.

4 Set your source reference points. Set your destination reference points— either in the same or a different file.

5 Set the drawing mode to **Draw Anywhere**. This is important.

When you create a selection, Painter sets the Drawing Mode to **Draw Inside**. If you try to clone in this mode, your strokes will be prevented from reaching the canvas.

6 Proceed to paint in the destination.

- With **Obey Source Selection** enabled, the brush paints only in the area that corresponds to the source selection.

- With **Copy Source Selection** enabled, the brush clones the selection along with the color.

This image uses Rotate & Scale cloning with both Obey and Copy Source Selection enabled.

4-Point Tiling

The 4-point tiling option is available only for **Bilinear** or **Perspective** cloning. Tiling allows you to repeat the source imagery across a larger area in the destination. The quadrilateral set by the four clone source points defines the image tile. In the clone destination, the tile is warped according to the relative positions of the source and destination reference points and repeated as necessary to cover the area. This feature is particularly useful when filling an area with the Clone Source.
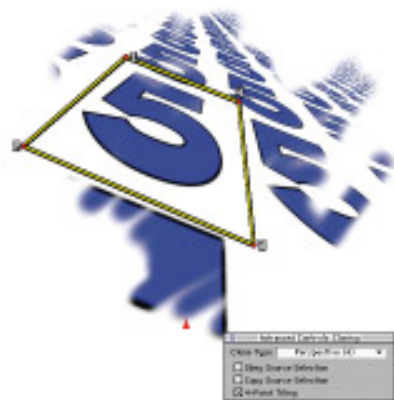
With 4-Point Tiling, your source area repeats.

Filling an Area with Warped Cloning

Instead of using the **Brush** tool to produce transformed imagery in the destination, you can use the **Paint Bucket** tool or **Effects menu▸ Fill** command. Filling is preferred when covering a large area evenly. Filling is particularly useful when using Perspective cloning with 4-point tiling and a seamless pattern as the source.

To fill with transformed clone imagery:

1 Choose the **Brush** tool and one of the cloning variants.

2 Choose **Brushes palette: Control menu▸ Cloning** to open the **Advanced Controls: Cloning palette**.

3 Choose the transformation you want from the **Clone Type** pop-up.

4 Set up your clone source reference points.

- If you're using 4-point cloning with a pattern, you don't need to set source reference points. Painter automatically puts reference points in the corners of the pattern, starting in the upper left (0, 0) and moving clockwise. This is ideal for most uses of **Bilinear** or **Perspective** cloning. If you want to set the source references of a pattern to points other than the corners, you can choose **Art Materials palette: Pattern menu▸ Check Out Pattern** and set the source points in the "checked out pattern" window. For more information on Check Out Pattern, refer to "Editing the Pattern tile with Check Out Pattern" on page 143.

5 Set up your destination points.
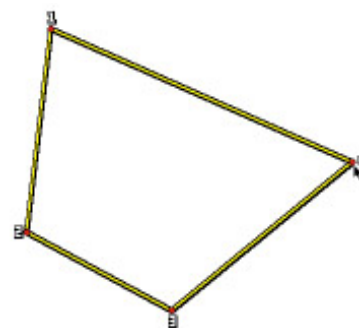
The destination points describe the transformation.

6 If you want, create a selection to constrain the fill.

7 Use either the **Paint Bucket** tool or the **Effects menu▸ Fill** command to fill with the Clone Source or Pattern. The filled area will have the described transformation.

The brick pattern becomes a steep wall.

Paint directly with mosaic tiles

Clone an existing image using mosaics

Control the size, degree of variation, color, and other characteristics of tiles

Apply Surface Effects or other Effects to further develop the image

Tile

Grout
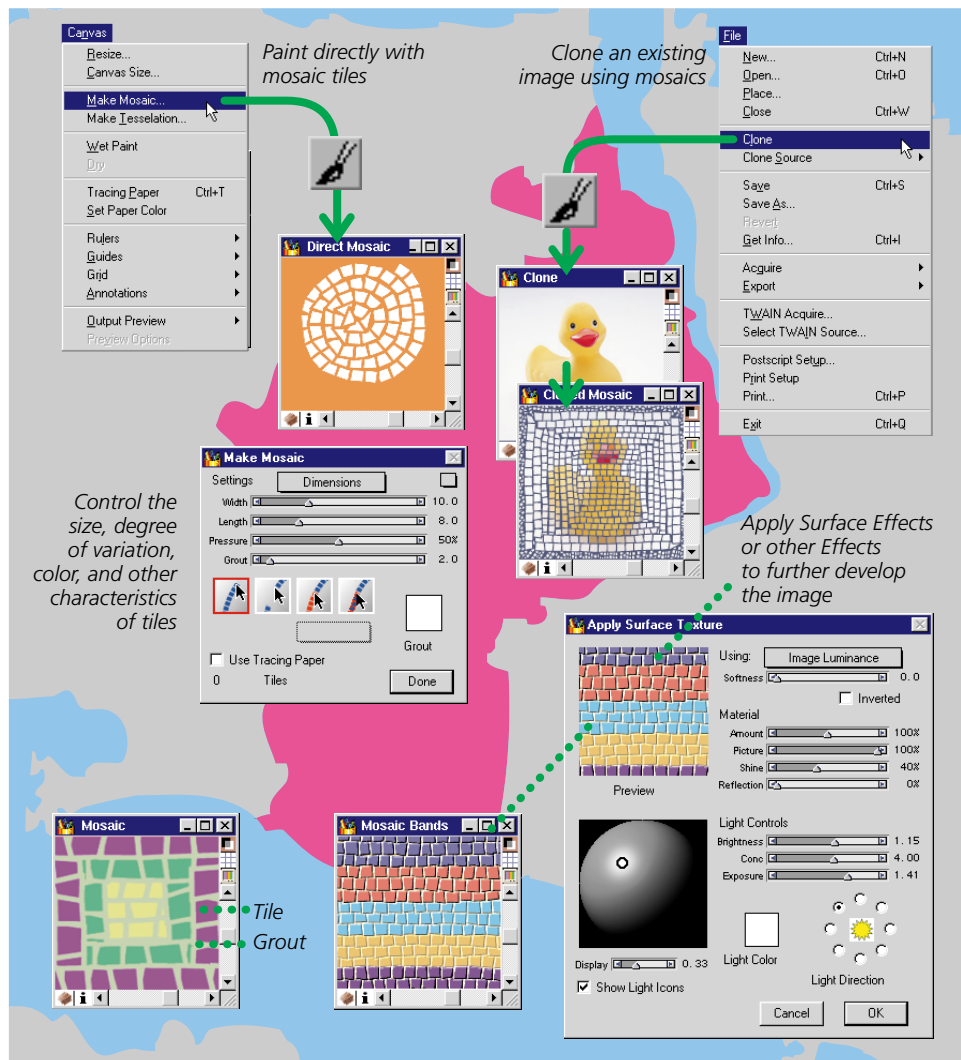
6

Mosaics

Understanding Mosaics

The Make Mosaic feature and its companion, Make Tesselation, help you create tile mosaics and stained-glass window formations.

The Mosaic feature lets users design imagery in the style of historic tile mosaics. You can start with a blank canvas or work from a cloned photograph, and simply paint with mosaic tiles. Each tile is an independent object that "knows" about every other tile, and carves its shape so

that it fits perfectly with existing tiles. Tiles can be erased and/or reshaped to create the perfect mosaic design.

The **Make Tesselation** tool creates tile inlay patterns for use in mosaics.

The mosaics can utilize cloning features, so you can easily translate an existing image to the mosaic medium.

After creating a mosaic, you can give it a three-dimensional appearance. This can produce some wonderful results. You may also apply brush strokes to the mosaic. A brush like Distorto will smear the tile colors.

For instructions on adding dimension to the tiles, refer to .

A mosaic image.

A mosaic based on Tesselation.

What You Need to Know about Mosaics

The mosaic feature differs from the other Natural-Media tools slightly. While working in the mosaics medium, you must have the **Make Mosaic** dialog open (`Canvas menu▶ Make Mosaic`), and you may not access any other tools or features—except the `Art Materials: Color palette`.

When you bring up the **Make Mosaic** dialog, you are working in a different mode. In this mode, you can only create, erase, reshape and recolor mosaic tiles. There are two aspects to the way that mosaics are created and displayed. Each mosaic tile is stored as a resolution-independent object within Painter's image database. This means that if you resize an image

composed of mosaic tiles, your image can be displayed in the same quality as if it was originally created at higher resolution.

The image that you see displayed is the set of all mosaic tiles rendered as an image onto the canvas. RIFF file mosaics can be re-rendered at any time. Once you exit the **Make Mosaic** dialog, you can treat this rendered image just like any photograph or painting. You can paint on it; run effects on it; float portions of it; increase canvas size, etc. However, once you choose **Re-render Mosaic**, Painter will erase any imagery that is not tiles or grout.

The first thing Make Mosaic does is cover the entire canvas with grout. This obliterates images that may be on the canvas. Objects that hover above the canvas, floaters and shapes, will not be obliterated but will cover up the mosaic you are working on. You may choose to hide floaters, or work in a separate document.

The Mosaic feature works with the entire canvas. You cannot create mosaics inside a floater.

If you want to composite a mosaic with some other image, you have several options:

- You can create the mosaic in its own document. When you're satisfied with the result, float and copy the mosaic to the document where you want to composite it.

- You can float the non-mosaic portion of the image. Create the mosaic on the canvas. When you are satisfied with the mosaic, you can drop the floaters.

- If a mosaic already exists in the document, Painter does not apply new grout when you open the **Make Mosaic** dialog (Painter assumes you want to keep existing tiles). You can use this feature to create a mosaic on top of another image. Create a mosaic, then click **Done** to exit the **Make Mosaic** dialog. Fill, paint, and drop floaters to create your background. When you return to Make Mosaic, your background image remains and you can tile over the top of it. Removing tiles placed on an image reveals the grout, not the image.

- RIFF is the only file format that will save the resolution-independent mosaic tile objects. Saving in any other format prohibits you from resuming the mosaic process. All file formats will, of course, save the rendered image of the mosaic tiles on the canvas.

- If you save a mosaic in the RIFF format, you can open the file at a later date, choose **Canvas menu▶ Make Mosaic**, and continue working. The tiles are still there. You may change their color, remove a few, and apply new ones.

Fitting Tiles Together

When working with real ceramic tiles, it is physically impossible to merge tiles. You can put them really close to each other, but you can't make them occupy the same space. Likewise, Painter's mosaic tiles respect each other's space. Tiles don't overlap or merge. Painter adjusts the shape of the tiles to fit them together while maintaining the grout lines

Because of this quality, when you want to re-lay the tiles in an area, you must first remove the existing tiles.

For more information on removing tiles, refer to .

Getting Started with Mosaics

The fundamental to mosaics is to paint with tiles, but there are many more options. You can choose a color to paint with or use the Clone Color. You can shape tiles, control the size of tiles, remove tiles or set grout thickness. Other powerful commands and features are found under the **Mosaic Commands** pop-up in the **Make Mosaic** dialog.

To create a mosaic:

1 Open a new document or clone an existing document.

2 Choose **Canvas menu▶ Make Mosaic**. The **Make Mosaic** dialog appears.
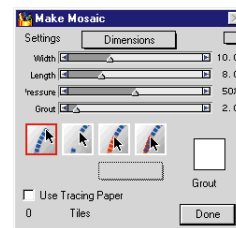
Mosaic Commands pop-up menu

Use the Make Mosaic dialog to change your artwork into tiles.

The **Make Mosaic** dialog provides all of the controls for working in this medium. When painting with mosaic tiles, you'll

work with one of four tools: the **Apply Tiles** tool, the **Remove Tiles** tools, the **Change Tile Color** tool, or the **Select Tiles** tool.

Applying and Removing Tiles

To apply tiles:

1 Choose ⌘**Canvas menu▸ Make Mosaic**. The **Make Mosaic** dialog appears.

2 Click the **Apply Tiles** icon.

3 Drag in the image window. New tiles flow from your stroke.

You can also have Painter do the tile work automatically with the **Stroke Selections** and **Fill Selection** commands. These features are described in "Stroke Selections and Fill Selection" on page 103.

To remove tiles:

1 Choose ⌘**Canvas menu▸ Make Mosaic**. The **Make Mosaic** dialog appears.

2 Click the **Remove Tiles** icon.

3 Click or drag over the tiles you want to clear.

Tile Color

Tile color is determined by the selected primary color on the **Art Materials: Color palette**.

You might want to add some color variability to build visual interest. In this case, each tile is given a slightly different color at random.

To use multi-colored tiles: adjust the settings for **Color Variability** on the **Art Materials: Color palette**. Try setting hue variability to 10%, with the others at zero. This creates a variety of tile colors within a reasonable range.
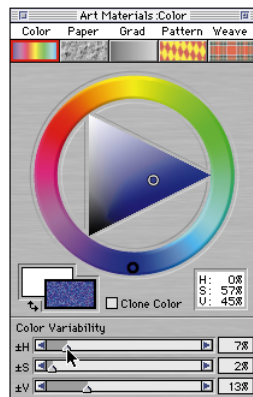
Use the Color Variability sliders in the Color palette to change the color of your tiles.

When working in a clone document, you can color the tiles based on the clone source. To do this, enable the **Clone Color** option on the **Art Materials: Color palette**. Remember to set up your clone source and destination file before choosing **Make Mosaic** in the destination file.

Normally, each tile is given a single color. If you want more options for coloring tiles, render the tiles to the mask. You can then convert the mask to a selection to paint in them, apply effects, or fill with a pattern, weave, gradation, or image.

Changing Tile Color

Painter offers several ways to change tile color. You may adjust the value, change the hue, or randomize variability. You may adjust the color for individual tiles or across areas of the mosaic.

Make sure the **Color** palette is open on your desktop. You will need it to change tile colors.

To change tile color individually:

1 Choose ⌘**Canvas menu▸ Make Mosaic**. The **Make Mosaic** dialog appears.

2 Click the **Change Tile Color** icon. Painter enables the adjustment mode pop-up beneath the tool icon.

3 Choose a color adjustment mode from the pop-up.

Color Changes the tile to the current primary color.

Darken Applies a small amount of black.

Lighten Applies a small amount of white.

Tint Applies a small amount of the current primary color, 10%.

Vary Adds color variability, based on the variability settings in the **Color** palette. In the **Color** palette, choose the color and variability settings you want to use. The **Color** palette must be expanded in order to have access to the variability and clone source settings.

4 Click on or drag across the tiles you want to change.

To change tile color in selected tiles:

1 Choose **Canvas menu▶ Make Mosaic**. The **Make Mosaic** dialog appears.

2 Click the **Select Tiles** icon.

3 Click on or drag across the tiles you want to select. Borders appear on selected tiles.

You can select contiguous tiles of the same color (no variability allowed) by holding down the **Command**/**Ctrl** key and clicking on one of the tiles. Clicking on a tile that is already selected deselects it. Additionally, the following key commands help in working with the entire mosaic:

Key	Command	Description
a	select all	Selects every tile in the mosaic.
d	deselect all	Deselect all tiles in the mosaic.

4 Choose a color from the **Color** palette.

Press one of the following keys to apply the described color change to the selected tiles:

Key	Command	Description
c	color	Changes the tile to the current primary color.
t	tint	Applies a small amount (10%) of the current primary color. Repeat the command to accentuate.
v	vary	Adds color variability, based on the variability settings in the **Color** palette. Repeat the command to try again.

Grout Color

Anywhere that tiles are not placed is considered grout. Therefore, the mosaic background is given the grout color when you begin working.

To change the grout color:

1 Choose **Canvas menu▶ Make Mosaic**. The **Make Mosaic** dialog appears.

2 Click the **Grout** color chip. Use the Color Picker to select a grout color. You can change the grout color at any time. However, changing the grout color automatically re-renders the mosaic.

Tile Settings

Tile shapes have two categories of control: **Dimensions** and **Randomness**. Use the **Settings** pop-up menu to choose which category you want to change.
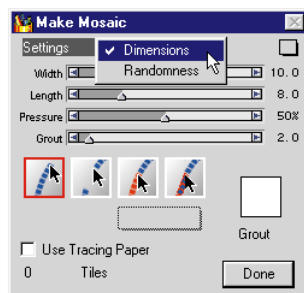
Use the Settings pop-up to choose from two categories of tile control: Dimensions and Randomness.

Dimensions

The **Dimensions** sliders let you control the basic size of the tiles and grout spacing.
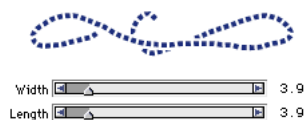
Use the Dimensions sliders to control size and spacing of the tiles.

Width

Width sets the width of the tiles in pixels.

The Dimensions: Width slider controls the width of the tiles.

Length

Length sets the length of the tiles in pixels.
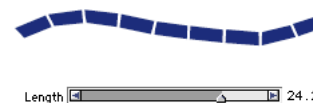
The Dimensions: Length slider controls the length of the tiles.

Pressure

Tile width depends on stylus pressure. This **Pressure** slider allows you to control the width variance under differently weighted strokes.

With the **Pressure** slider set at zero, a light stroke produces narrow tiles, and a heavier stroke creates wider tiles.

Increasing the **Pressure** slider makes Painter consider the stroke that much harder when calculating the width of the tiles. By increasing the Pressure setting, you can prevent Painter from creating narrow tiles in response to a light stroke. One-hundred percent pressure will create uniformly wide tiles regardless of the pressure.
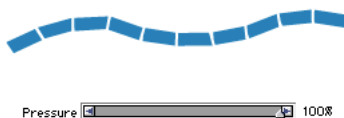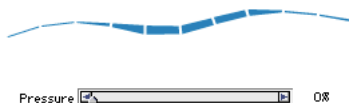
The Dimensions: Pressure slider controls how pressure affects tile width.

Grout

Grout sets the spacing between tiles in pixels.
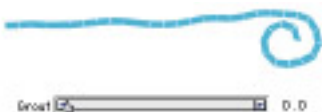
The Dimensions: Grout slider controls the spacing between tiles.

Randomness

The **Randomness** sliders allow you to control the uniformity of the tile shapes. Increasing randomness makes the shapes more erratic—each different from the last.

For example: If the **Length Dimension** is 10 pixels, a **Length Randomness** of 25% creates tiles that are randomly given a length from the range of 7.5 to 12.5 pixels.

Width

Increasing **Width** randomness allows the width to vary by the set percentage.

The Randomness: Width slider controls the randomized tile width.

Length

Increasing **Length** randomness allows the length to vary by the set percentage.

The Randomness: Length slider controls the randomized tile length.

Cut

With **Cut** randomness at zero, the ends of the tile are created perpendicular to the stroke. Increasing Cut randomness allows the angle of the tile ends to vary.

The Randomness: Cut slider controls angle of the end tiles.

Grout

Increasing **Grout** randomness allows the spacing between tiles to vary by the set percentage.

The Randomness: Grout slider controls the randomness of the spacing between tiles.

Tips for Working With Mosaics

Traditionally, mosaics are pictures created from ceramic tile and grout. If you are either cloning from an existing image or creating a mosaic design from scratch, you want to follow a few common-sense rules:

- Use your first few courses of mosaic tiles to delineate the most important contours of your subject. Just as if you were drawing with a pencil, describe the most important lines of your scene first. Additional courses of tiles will follow these initial contours.
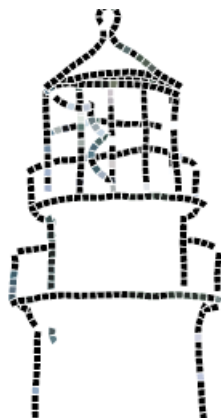
- Use larger tiles in areas of flat color and smaller tiles in regions where you need to capture more detail. In flat color areas it's effective to introduce some color variability. Tiles used in traditional mosaics rarely had uniform color.

- If you're working in a clone, turn on the **Tracing Paper** feature by clicking the **Use Tracing Paper** checkbox in the **Make Mosaics** dialog. This helps you follow the source imagery.

The Mosaic Commands

The **Mosaic Commands** pop-up provides access to the powerful mosaic features.

Reset Mosaic

This command removes all tiles from the document. Painter clears the canvas to the grout color.

If you only want to remove tiles selectively, use the **Remove Tile** tool discussed in "Applying and Removing Tiles" on page 96.
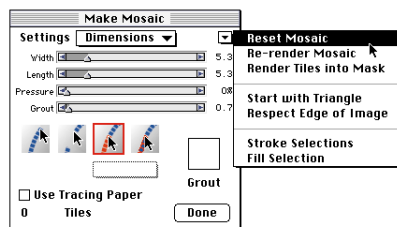
Reset Mosaic removes all tiles from the image and fills with grout.

Re-Render Mosaic

This command re-creates the mosaic from the grout color and the tile object information. Re-rendering will first fill the image with the grout color, and then re-render the mosaic tiles at the resolution of the document. This command allows you to change the resolution of the tiles, after you change the resolution of your document.

To re-render

1 Open an image that is the size you want at 75 dpi.

2 Create a mosaic. Click **Done** to exit the **Make Mosaic** dialog.

3 Choose **Canvas menu▶ Resize**. In the dialog, disable the **Constrain File Size** option and set the resolution to a higher value—perhaps 300 dpi.

When Painter has finished resizing, you'll see the that tiles have blurred. You can correct this problem by re-rendering the mosaic.

4 Choose **Canvas menu▶ Make Mosaic**. The **Make Mosaic** dialog appears.

5 From the **Mosaic Commands** pop-up, choose **Re-Render Mosaic**. Painter replaces the resized, blurry tiles with tiles rendered at the higher resolution.

Render Tiles into Mask

This command places the tile shapes in a new user mask named Mosaic Mask (in the Mask List).

This feature has several uses. The most common is adding depth to the tiles.

With the tiles in a mask, you may load it and use the mosaic pattern as a selection. Or invert the mask to use the grout as a selection. This can be particularly interesting when working with a tessellated mosaic.
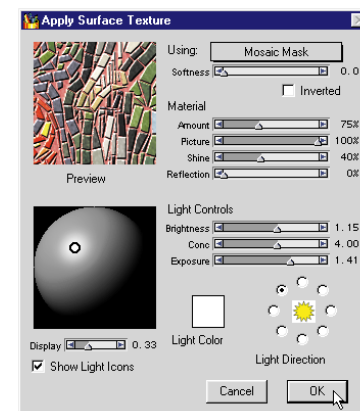
Use Surface Texture to create a look of 3D tiles.

1 After creating the mosaic, choose **Render Tiles into Mask** from the **Mosaic Commands** pop-up.

2 Click **Done** to exit the **Make Mosaic** dialog.

3 Choose **Effects menu▶ Surface Control▶ Apply Surface Texture**.

Windows: Your computer must have a math coprocessor in order to use this effect.

4 In the **Apply Surface Texture** dialog, choose **Mosaic Mask** from the **Using** pop-up. Change the **Amount** and **Softness** sliders to achieve the level of relief you want.

In most cases, you'll want the **Picture** slider at 100%. For more information on surface texture options, refer to "Apply Surface Texture" on page 269.

5 Click **OK**.

Because Painter uses the tile shapes (from the mask), the resulting surface texture gives the tiles an excellent 3D appearance.

Starting with a Triangle

When **Canvas menu▶ Make Mosaic▶ Mosaic Commands pop-up▶ Start with Triangle** is enabled, Painter creates a triangle as the first tile in each stroke. This is particularly useful when filling a "V" shaped space with tile.

Start with Triangle makes a perfect wedge in the "v."

Respecting the Edge of an Image

When **Canvas menu▶ Make Mosaic▶ Mosaic Commands pop-up▶ Respect Edge of Image** is enabled, Painter maintains a grout line at the perimeter of the image. Tiles you create at the edge of the image will not violate the grout line.

Respect Edge of Image ensures the tiles you create at the edge will not violate the grout line. In this example, the white tiles respect the edge while the black tiles do not.

Stroke Selections and Fill Selection

The **Stroke Selections** and **Fill Selection** commands are provided for applying mosaic tiles to selections.

Mosaics and selections features only work with path-based selections. You may need to use **Select menu▶ Transform Selection** to convert a mask-based selection to a path-based selection. For more information, refer to "The Selection" on page 156 and "Manipulating Selections" on page 166.

To create a mosaic in a selection:

1 Set up the area you want to tile as an active selection.

2 Choose **Canvas menu▶ Make Mosaic**. The **Make Mosaic** dialog appears.

3 Choose **Mosaic Commands pop-up▶ Dimensions** or **Randomness**.

4 Choose the color for the tile and the grout.

5 Use the **Mosaic Commands** pop-up, to select the command you want: **Stroke Selections** or **Fill Selection**.

Stroke Selections Creates one row of tiles along each selection path.

An example of a selection, Stroke Selection and Fill Selection.

Fill Selection Applies multiple rows of tiles, working in from the path, until the selected area is filled with tiles.

In some cases, Painter might not put a tile in every space. You can fill openings by choosing the **Apply Tiles** tool and stroking them in yourself.

If you don't like the way Painter filled an area, you can use the **Remove Tiles** tool to clear it. Then you can re-apply tiles by hand.

Stroking a selection and filling it only makes sense when you change some parameter between operations. For example, you might change the tile color or dimensions. If stroke and fill is something you are going to do, remember to stroke first, then fill.

6 Click **Done** to exit the **Make Mosaic** dialog.

Making a Tesselation Mosaic

A tesselation is a type of mosaic that uses non-rectangular tiles. Painter's **Canvas menu▶ Make Tesselation** command gives you extraordinary power to create mosaics of differently shaped tiles.

The **Make Tesselation** feature works by dividing the canvas into polygonal shapes, which become the mosaic tiles. The polygons themselves are sets of points, connected by line segments. You can control the number of points and their distribution. You also may choose the rule for connecting them.
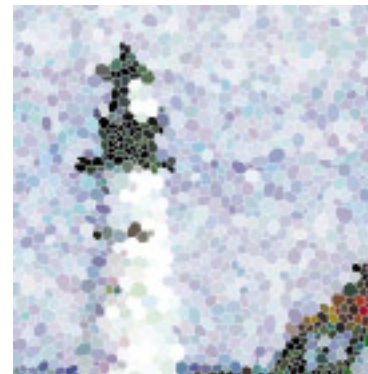
A tesselation mosaic uses non-rectangular tiles.

After closing the **Make Tesselation** dialog, the polygons appear as mosaic tiles—given the primary color, and surrounded by the grout lines described in the **Make Mosaic** dialog.

You might want to convert a regular image to a tesselation. If so, set up the image as the clone source. Enable the **Clone Color** option on the **Colors** palette. Then proceed to make the tesselation

To create a tesselation:

1 Open a new document.

The **Make Tesselation** command covers everything on the canvas with grout.

2 Choose **Canvas menu▶ Make Mosaic**. The Make Mosaic dialog appears.

3 Select **Dimensions** from the **Settings** pop-up, adjust the **Grout** slider to describe the thickness you want for the grout lines, and select a grout color.

4 Click **Done** to exit the **Make Mosaic** dialog.

5 Choose **Canvas menu▶ Make Tesselation**. The **Make Tesselation** dialog appears.
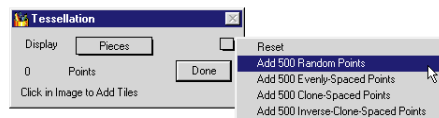
You can add vertex points randomly.
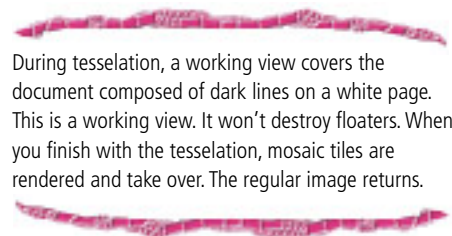
During tesselation, a working view covers the document composed of dark lines on a white page. This is a working view. It won't destroy floaters. When you finish with the tesselation, mosaic tiles are rendered and take over. The regular image returns.

6 Click in the image window to create tesselation points. Painter connects the points to form the polygons. You can create points in two ways:

- Drag in the document to create points. Drag again to add more points. The points accumulate.

- Choose one of the commands from the Add Points pop-up. You may add 500 points randomly, evenly spaced, or based on a clone source document.

You can quickly add points by using the Add Points pop-up.

Adding points based on a clone source is a powerful option. The 500 points are distributed according to the luminance of the clone source. Lighter regions receive a greater density of points, and so, smaller polygons.

Repeat a command from the **Add Points** pop-up to create more points. You can alternate between dragging and using an add-points command. The points accumulate.

The number of points appears in the corner of the **Make Tesselation** dialog.

7 To clear all points, choose **Reset** from the **Add Points** pop-up.
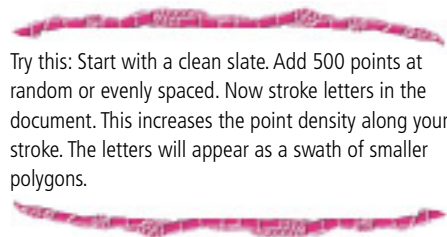
Try this: Start with a clean slate. Add 500 points at random or evenly spaced. Now stroke letters in the document. This increases the point density along your stroke. The letters will appear as a swath of smaller polygons.

It is possible to create a huge number of points. More points mean more polygons, which increases the time it takes to convert to a mosaic. Keep this in mind to avoid overwhelming your system.

8 Choose a tesselation tile shape from the **Display** pop-up. Painter forms polygons by connecting the points according to the **Display** type.

To change the type, select the shape you want from the **Display** pop-up: **Triangles**, **Cracks**, or **Pieces**.
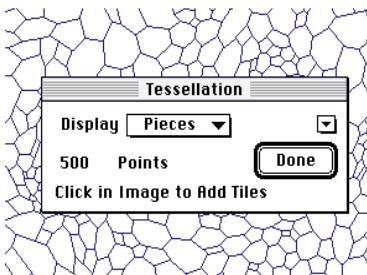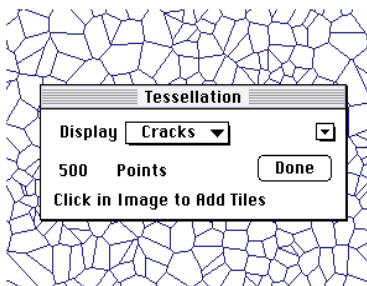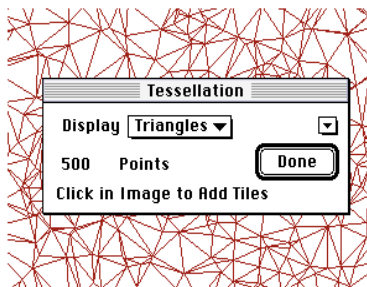
You can base your Tesselation on Triangles, Cracks or Pieces.

9 Click **Done** to exit the **Tesselation** dialog. Painter works for a moment, converting the polygons to mosaic tiles, then rendering the mosaic image to the canvas.
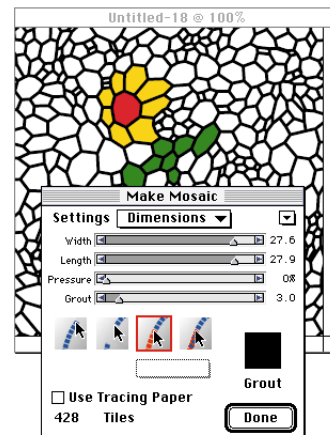
Once you have a Tesselation, you can use Make Mosaic from the Canvas menu to paint into the tiles.

10 After the tesselation appears as a mosaic, you may open the **Make Mosaic** dialog (**Canvas menu ▸ Make Mosaic**) and modify the tile colors.

Tesselation tiles are subject to the same rules as the rectangular mosaic tiles. You may use the tools on the **Make Mosaic** dialog to remove them and change their color. You can't re-apply them, however.

When you create a tessellation with the current color and the grout color set to black, and select **Canvas menu▸ Make Mosaic**, the image appears totally black. Don't worry, it's not empty. Choose the **Change Tile Color** tool, set the primary color to a bright color and stroke in the document. Colored, tessellated tiles appear beneath your stroke. You can also base the color on the Clone Color if you enable **Clone Color** on the **Color** palette.

The following commands are available from the **Mosaic Commands** pop-up for tesselations: **Reset Mosaic**, **Re-Render Mosaic** and **Render Tiles into Mask**. The other mosaic commands relate to creating tiles, so they don't apply to tesselations.

A finished Tesselation resembles stained glass.

The Grain slider mixes in the secondary color

Choose nozzles from the Nozzle portfolio

The Image Hose paints with image after image after image…

Create custom nozzles based on your own image groups or movies

Manage nozzles using the Brushes palette: Nozzle menu

Slider Controls enable a variety of parameters to be used to control Image Hose behavior

7

The Image Hose

Using the Image Hose

The **Image Hose** is a milestone in the evolution of art tools. Instead of painting with color, the **Image Hose** paints with images; and not just one or two images at a stroke, but a *variety of changing images*.

The images flowing from the hose change as you make a brush stroke. Painter gives you complete control of the image output. For example, by increasing stylus pressure, you can hose larger images—or more colorful ones. Or by changing the direction

of the stroke, you can change the angle of the images. This is just a sample of the possible controls. By creating your own sets of images, anything is possible.

Painter's Image Hose feature allows you to paint with images.

The **Image Hose** deposits 24-bit images with an 8-bit mask. The mask enables you to layer the images gently, without aliased edges or artifacts.

You can load the **Image Hose** with leaves, bark, grass, stones, people—images of any description. When you paint with these image elements, you can build them into coherent shapes—a tree, a hill, a cobble stone street, a crowd of people.

How it Works

The **Image Hose** is a brush. To use it, you must first load it with images. The images are kept in special nozzle files.

A nozzle is what you attach to a garden hose to control the flow of water. So a nozzle is what you attach to the **Image Hose** to control its medium—images.

A nozzle file may contain any number of images. Usually, the images are similar and form a logical series—that is, the images progress along some order. For example, the images might increase in size, or advance in angle.

It is not necessary that images progress in a logical series, but the **Image Hose** is more powerful when they do. Progression allows you to control the images that flow from the hose.

The images are indexed so that Painter can locate and hose specific images on request. As you paint with the **Image Hose**, you can request specific images from the nozzle index by varying your input. Increasing an input value takes images from later in the series. For example, you can set up the nozzle so that by pressing harder with a pressure sensitive stylus, you paint with larger images.

"Indexing" refers to the method Painter uses to select particular images from the many images in a nozzle file. You control which input factor to use for indexing on the **Nozzle** palette (**Brushes palette:**

Nozzle menu▸ Nozzle). You can hose images sequentially, at random, based on pressure, stroke direction, and several other factors.

You control the images themselves in the nozzle file. If you want more variety in the images, create more images in the nozzle file. Designing and creating nozzle files is covered in "Creating Nozzles for the Image Hose" on page 115.

As your **Image Hose** requirements become more exacting, you can create complex nozzles that involve *two progressions*—for example, images get larger *and* change angle. In this case, you'll use one input factor, to determine image size, and use a second factor to determine image angle. This creates a **2-Rank Nozzle**.
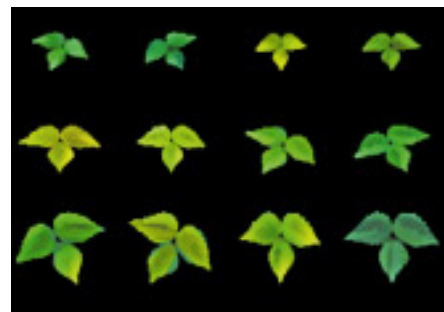
A 2-Rank Nozzle progresses in two dimensions. In this example, the first rank changes angle, the second rank changes size.

Using the Image Hose

The **Image Hose** is easy to use and provides a number of options for the behavior of "nozzle spray."

To select a nozzle and use the Image Hose:

1 Choose the **Brush** tool from the **Tools** palette.

2 Choose the **Image Hose** from the **Brushes** palette. You may need to open the draw to display the icon. You can also select Image Hose from the Brushes Library pop-up menu

3 Choose **Brushes palette: Nozzle menu▸ Nozzles**. The **Nozzle** palette appears.
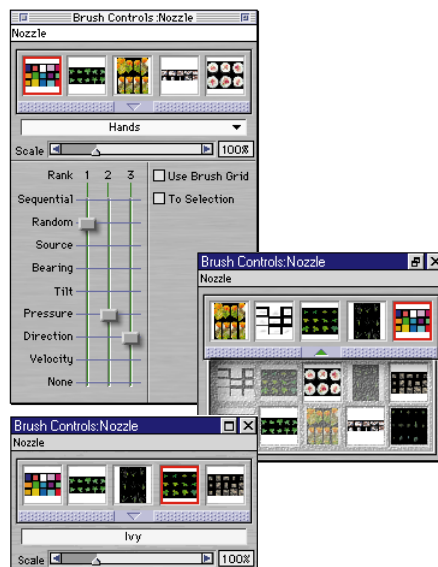
The Nozzle palette controls the images used on the nozzle.

4 Select a nozzle from the **Nozzle** palette. There are three ways of selecting a nozzle:

- Click on a Thumbnail from one of the five displayed nozzles in the Nozzle palette.

- Click on the **Nozzle** Library pop-up to display a list of available nozzles.

- Click the push-bar to open the palette drawer. Click on one of the thumbnails in the drawer.

5 Choose an **Image Hose** variant from the **Brush palette: Variant pop-up**. Each variant delivers the images differently.

6 Make a brush stroke in your document.

Loading Nozzle Files

If you've created a separate nozzle file that isn't part of a library, you can load it.

To load a nozzle file:

1 Choose **Brushes palette: Nozzle menu▸ Load Nozzle**. A standard **Open** dialog appears.

2 Open a nozzle file by double-clicking its name in the window or highlighting the file name and clicking **Open**.

The first time you load a nozzle, Painter may ask for some information on the image's construction. This is covered in "Creating Nozzles for the Image Hose" on page 115.

Choosing an Image Hose Brush Variant

After loading a nozzle file, all you have to do to start painting is choose the **Image Hose** brush and one of its variants from the **Brushes** palette.

About the Variants

Like Painter's other brushes, the **Image Hose** has several variants. These built-in variants combine nozzle control factors with brush settings to create different hose effects.

The following descriptions will give you an idea of the effect of each variant.
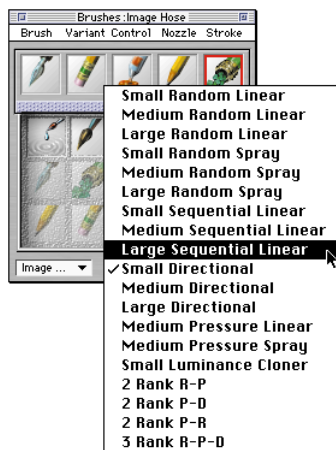
Image Hose variants can be understood by the vocabulary. Some Image Hose variants scatter the images, others hose a tight stream.

Small, **Medium**, and **Large** refer to image spacing. **Small** variants space images closely. **Large** variants space images widely. For more information on spacing images, refer to "Controlling the Image Hose Brush" on page 111.

Random, **Sequential**, **Directional**, **Pressure**, and (Source) **Luminance** refer to the indexing rule by which images are selected from the nozzle file. For more information, refer to "Controlling the Nozzle" on page 112.

Spray and **Linear** refer to the placement of images in relation to the stroke. **Spray** variants scatter images. **Linear** variants place images directly on the stroke path. For more information, refer to "Controlling the Image Hose Brush" on page 111.

The **R**, **P** and **D** refer to random, pressure, and direction.

You can use these variants as a starting point, then adjust the brush and nozzle controls to hose the images just as you want them.

The Controls Palette: Brush Tool

You can use the sliders on the **Controls palette: Brush tool** to adjust the opacity of nozzle images and to mix them with the secondary color.

The **Opacity** slider allows you to make nozzle images semi-transparent. If you move the slider all the way to the left, the images become invisible.

You can change the opacity of Image Hose strokes.

The **Grain** slider allows you to mix the secondary color with the nozzle images. If the slider is set to 100%, the nozzle images remain pure. As you move the slider to the left, more of the secondary color appears in the images. If the slider is set to 90%,

Painter mixes 10% of the secondary color to 90% of the image. This is a handy way to adjust the shading of image elements.
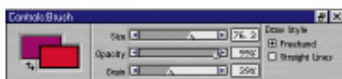
You can turn down the Grain to mix-in the secondary color.
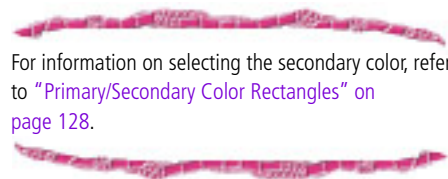
For information on selecting the secondary color, refer to "Primary/Secondary Color Rectangles" on page 128.

Controlling the Image Hose

The **Image Hose** has three components of control: The **Image Hose** brush, the nozzle controls, and the nozzle file.

- You'll adjust the brush to determine the placement of images in the stroke.
- You'll use the **Nozzle** palette control sliders to change the scale and to set the rules for indexing.
- You'll create your own nozzle files to determine the image content and dimensions of progression.

Controlling the Image Hose Brush

Brush controls for the **Image Hose** primarily affect where the images appear in the stroke. For example, whether the images are scattered or closely spaced.

Spacing Images

You control the space between images with the **Spacing/Size** slider in the **Brushes palette**: **Control menu► Spacing palette**). Moving the slider to the right increases the spacing between image elements.

Because spacing is based on the diameter of the brush, the **Size** slider in the **Brush palette: Controls menu► Size palette**
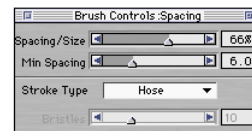
The Spacing/Size slider in the Spacing palette controls the space between images.

The Spacing slider controls the spacing of the image.

also affects image spacing. Increasing the brush size adds space between hosed images.

The **Size** slider does not affect the size of the image elements themselves. For this control, use the **Scale** slider on the **Nozzle** palette.

For more information on the **Spacing** palette, refer to .

Randomizing placement

You control the proximity of images to the stroke path with the **Dab Location Placement** slider on the **Brush palette: Controls menu▸ Random palette**. When the slider is all the way to the left, images are hosed directly in the stroke. Moving the slider to the right increases the scattering of the images.

For more information on the **Random** palette, refer to .

The Sliders Palette

The **Brush palette: Controls menu▸ Sliders palette** offers dynamic control over the brush settings described above. This can lead to a very complex brush, but not necessarily a useful one.

When you've mastered the controls for the Image Hose brush and the **Sliders** palette, you might find a useful way to combine the tools.

Not all features of the **Sliders** palette apply to the Image Hose brush.

For more information on the **Sliders** palette, refer to .

Controlling the Nozzle

You can control the size of the nozzle images and the rules for delivering them with the sliders in the **Nozzle** palette (**Brushes palette: Nozzle menu▸ Nozzles**).

Scale

Using nozzles in the current library, the **Scale** slider lets you control the size of image elements delivered by the **Image Hose**.

Drag the slider to the left to shrink the images. Drag it to the right to grow them. At 100%, the images equal their size in the nozzle file.
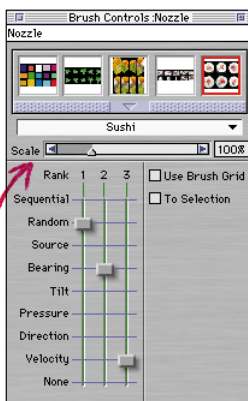
The Nozzle palette contains the Scale slider.
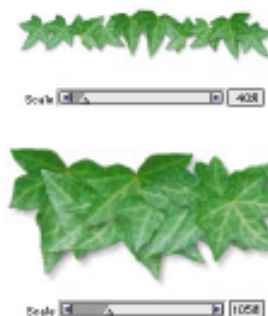
The Scale slider controls the size of the nozzle images.

Indexing

As you paint with the **Image Hose**, Painter selects images from the nozzle file based on one or more rules. This selection process is called indexing. The **Nozzle** palette lets you change the rules for indexing the images.

Image nozzle files may be created with one, two, or three image progressions called "ranks." Painter offers these three dimensions of progression, so each nozzle file can be identified as a **1**, **2**, or **3-Rank** nozzle.

For more information about the rank system, refer to .

The **Rank-1**, **Rank-2**, and **Rank-3** sliders set the rules for indexing in their respective dimensions. This indexing determines which images from the many in the nozzle file are delivered from the **Image Hose**.
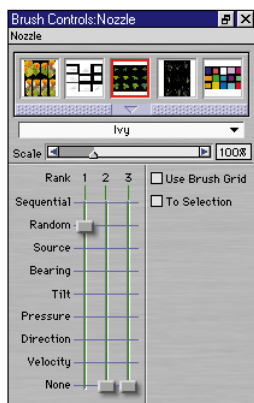
Rank 1 set to Random instructs Painter to select items from the first rank at random.

To change the indexing rule:

1 Choose **Brushes palette: Nozzle menu▶ Nozzles**. The **Nozzle** palette appears.

2 If the **Rank** sliders are not displayed in the **Nozzle** palette, click in the grow box in the upper right corner to expand the palette.

3 Move the **Rank** slider to the control factor you want for that rank. The control factors are described below.

Because a 1-Rank nozzle has no second or third rank, the Rank-2 and Rank-3 sliders do nothing for a 1-Rank nozzle.
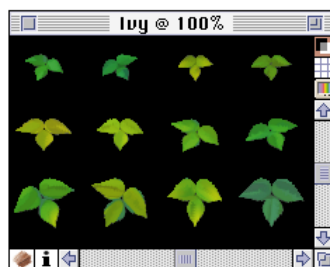
This nozzle file displays all of the images in the nozzle used in the following examples.

Sequential

Sequential indexes images in the order they appear in the rank—moving left to right, and top down, just as you read English.

An example of Sequential indexing.

Random

Random selects images from the rank at random.

Randomness can add irregularity of color and texture to the areas you paint with the **Image Hose**. This contributes to the aesthetics of the painting. minor irregularities occur in natural structures.

An example of Random indexing.

Source

Source delivers images based on the luminance of pixels in the clone source (or current pattern if you have not set a clone source). As the luminance increases, **Source** delivers images from later in the rank.

The first image above is the specified clone source. The second image shows the result of indexing based on Source.

Source is used in association with a clone source. Remember that the pixels of the working document have a direct correspondence with the pixels of the clone source image. For more information on setting up and using a clone source, refer to "Changing Clone Sources" on page 81.

For best results, the clone source should have the same dimensions as the document in which you're working.

Depending on the Nozzle you're using, **Source** can be quite useful. Start with a black background and lighten areas where you want to index images from later in the rank.

For example, if the source image is black on the left and progresses through gradations to white on the right. The **Image Hose** delivers images from the start of the rank at the left of the document, in the dark area. As the brush moves to the right into the lighter area, the Image Hose delivers images from later in the rank.

To take advantage of this feature, you may want to create a special source image for the single purpose of controlling the **Image Hose**.
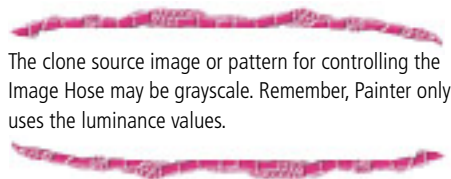
The clone source image or pattern for controlling the Image Hose may be grayscale. Remember, Painter only uses the luminance values.

Bearing

Bearing indexes images based on the bearing of the stylus. Not all stylus models convey this information. This control does not work with a mouse.

Tilt

Tilt indexes images based on the tilt of the stylus. Not all stylus models convey this information. This control does not work with a mouse.

Pressure

Pressure only works with pressure sensitive tablets. **Pressure** indexes images based on stylus pressure. Greater pressure selects images from later in the rank.

Pressure is a great control for requesting images from a nozzle. For example, if you set up your nozzle file to progress from small to larger images, heavier strokes deliver larger images.

Direction

Direction indexes images from the rank based on the direction of the stroke. A left-to-right, horizontal stroke delivers the first element in the rank. As the stroke direction progress counter-clockwise, the **Image Hose** delivers subsequent images from the rank.

This Arrow nozzle is an example of indexing based on Direction.

The number of elements in the rank determines the directional change required to index a different element. For example, a nozzle file that contains 72 images at progressive angles delivers a different item at every 5° of stroke direction (360°/72=5°).
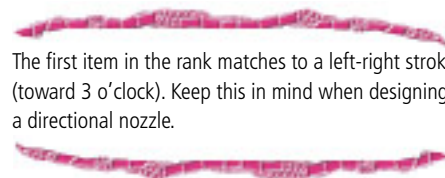
The first item in the rank matches to a left-right stroke (toward 3 o'clock). Keep this in mind when designing a directional nozzle.

Velocity

Velocity is often used with a mouse to mimic pressure. **Velocity** indexes images from the rank based on the speed of the stroke. A faster stroke delivers elements from later in the rank.

Velocity can be difficult to control. For this reason, you might want to use it in a rank with few elements.

None

None returns one element only— the last in the rank.

Nozzle Options

The **Brush Controls: Nozzle palette** has two check box options for the **Image Hose—Use Brush Grid** and **To Selection**.

Use Brush Grid

When **Use Brush Grid** is enabled, the **Image Hose** places images in a regular grid pattern. The grid size follows the grid in the nozzle file.
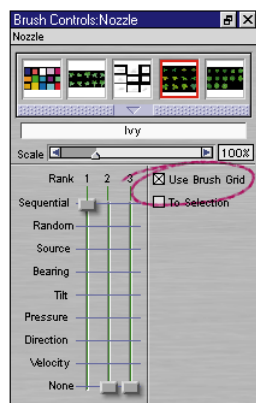
The Use Brush Grid option is on the expanded Nozzle palette.

Enable Use Brush Grid to place images on a perfect grid.

To Selection

When **To Selection** is enabled, the images you paint with the **Image Hose** are painted to the selection layer as well. That is, the *mask* of each nozzle image is added to the selection.

When To Selection is enabled, images painted with the Image Hose create an automatic selection.

Creating Nozzles for the Image Hose

Designing Nozzles: 1, 2, or 3 Ranks

A nozzle file contains a series of images arranged in a regular grid. Usually, the images are progressive in terms of size, shape, angle, or color. Progression is not necessary, but it increases the sophistication of the **Image Hose**. For example, a nozzle file with images progressing in size can be set up so that greater stylus pressure paints incrementally larger images.

A 1-Rank Nozzle progresses in one dimension. In this example, changing angle is the first rank.

What if you want a two-dimensional progression? For example, image elements increasing in size and/or changing angle. To do this, you'll need to set up your images as a **2-Rank Nozzle** file. Painting with a **2-Rank Nozzle**, you can control where your image comes from in terms of *both* progressions. In this case, you use a different input factor to control the location in each rank.

In this example, **Rank 1** is a progression in angle. The image below shows **Rank 2** as a progression in size. It would make sense to use direction to control **Rank 1** and pressure to control **Rank 2**.
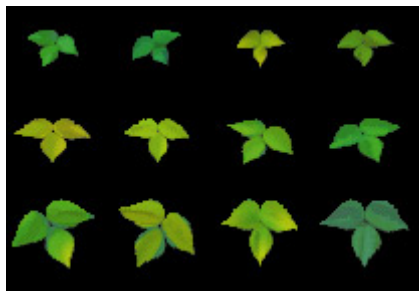
A 2-Rank Nozzle progresses in two dimensions. In this example, changing angle is the first rank and size is the second rank.

For information on setting the control factor for each rank, refer to .

You can extend the nozzle to a third progression, creating a **3-Rank Nozzle**. Again, you use a separate input factor to control the location in each rank.

In the following example, **Rank 3** is a progression in color. You might control this final rank with randomness, velocity, or source—depending on your plans in the image.

If you use one input factor to control two ranks, some image elements become unavailable.

Color is the third rank in this 3-Rank Nozzle.

Consider the way you will control each rank before building a nozzle. The way you lay out the images can limit the ways you can control the indexing.

Before you begin building a nozzle, you'll need to decide what rank level you need. And you'll need to determine how many elements you want in each progression.

Understanding the Ranking System

A **1-Rank** indexing system is simply a numbered sequence. You can locate any element in the sequence by giving its number. For example, "Item 3."

In Painter, you locate items by varying input—for example, by pressing harder with the stylus or changing the direction of the stroke. For information on the input factors you can use to control indexing, refer to .

A **2-Rank** indexing system uses two perpendicular indexes. The first rank extends horizontally and the second extends vertically. Again, you'll vary input to locate an item for either rank. You can think of indexing in the two ranks as "selecting a column" and "selecting a row." The **Image Hose** delivers the image from the nozzle where the selected column and row intersect. In order for this to work properly, you'll need to use different input factors for selecting in each rank.

A **3-Rank** indexing system extends the **2-Rank** model. The third rank is created by repeating the **2-Rank** "set." In this case, you index in the third rank by varying input to locate which set you want. Within the selected set, the one and **2-Rank** indexing (described above) is used. In order for this to work properly, you'll need to use different input factors for selecting in each rank.

A 3-Rank indexing system is used with calendar dates. Any day, in the past or future, can be located, given the month, day, and year. For example, "February 25, 1962 (2/25/1962)."

Preparing Images

Regardless of the rank level of the nozzle you are making or the method you use to build it, the following tips will help you develop the individual images.

Each element in an **Image Hose** nozzle must be selected. The selection allows you to paint with images of irregular shape. Only what is inside the selection will flow from the **Image Hose**.

You might want to work by creating a silhouette of the image shape as a selection, then fill in the color information later.

With soft edges to the selection, you can hose images that are automatically anti-aliased. This improves the continuity across an area of hosed images.

You can create **Image Hose** nozzles from floaters. As you create image elements, turn them into floaters. If the floater looks good when dropped on different backgrounds, the image will look good as a nozzle element. Building a nozzle from floaters offers advantages in convenience as well.

Float the image on a black background and add a drop shadow. This will enhance the three-dimensionality as image elements build up in layers. When all elements have the shadow in the same position, it appears the light source is the same across the painted area.

Creating a 1-Rank Nozzle from a Group of Floaters

To create a 1-Rank nozzle from floaters:

1 Create the image elements of the nozzle you want as floaters.

For more information on working with floaters, refer to

2 When you've created the images, float all of them in the same file. It doesn't matter where the images float in the document.

3 Open the **Objects: Floater List palette** and inspect the list of floaters.

The top floater on the list will be the first element in the nozzle sequence. Moving down the list advances through the progression.

4 Drag the item for each floater to arrange the list according to the progression you want in the nozzle.

5 If any of the floaters is a group, click the name of the floater to select it. Then click **Collapse** to turn the group into a single floater.

Painter can make a nozzle from a group of floaters, but not from a "group of groups."

6 Hold down the **Shift** key and select each item in the list. You may also choose **Edit menu▸ Select All** when the **Adjuster** tool is selected.

7 Click **Group**. All the items are now part of the same group.

8 In the **Floater List** palette, click **Trim**. This shrinks the floater rectangle to its minimum size.

Floaters Nozzle @ 100%

Objects:Floater List

P. Float Floater Mask Script Net

— Group 1
  Binoculars
  Suitcase
  Sign
  Block
  Globe
  Hand

Group Ungroup Drop Delete
Collapse Trim

Creating a nozzle from floaters.

9 Choose **Brushes palette: Nozzle menu▸ Make Nozzle From Group**. Painter creates a new, untitled image. This is your nozzle file.

10 Choose **File menu▸ Save**. Give the file a descriptive name and save it as a RIFF file. Keeping your nozzle files in one place makes them easy to locate.

To load your nozzle and add it to the current library:

1 Choose **Brushes palette: Nozzle menu▸ Load Nozzle**.

2 Choose **Brushes palette: Nozzle menu▸ Add Nozzle to Library**.

3 Name the nozzle and click **OK**.

You can now choose an indexing rule and paint with your 1-rank nozzle.

You may want to create your own nozzle libraries.

Painting with a nozzle created from floaters.

A 1-Rank Nozzle doesn't mean the images must be in one line. Painter will wrap images onto several lines to create a document of reasonable shape. This follows how printed words of a sentence may wrap from one line to the next, moving down the page.

The wrapping of words on the page doesn't damage the sentence—you know when it ends by your knowledge of language and the rules of punctuation. Likewise, Painter follows a mathematical rule in reconstructing the rank of images. This rule is contained in the Nozzle Definition. You'll learn more about this in .
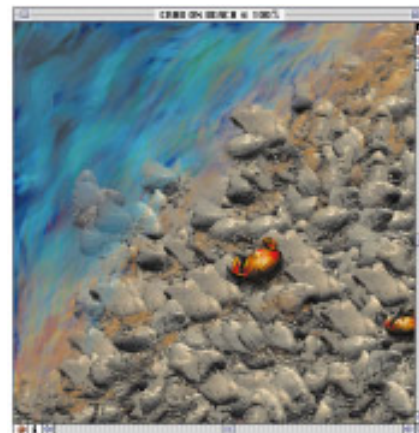
Nozzles are most useful when they deliver similar images with some irregularity, for example, pebbles on a beach.

Creating a 2-Rank Nozzle on a Grid

Nozzles of two and three ranks cannot be created from a floater group. You must build these nozzles manually.

The indexing system requires the nozzle images to fit in a regular grid. You can create a nozzle file by setting up a grid and placing an image element at the center of each cell.

Determining the Grid Cell Size

The cell size is based on the smallest rectangle that will hold the largest image element (including its selection).

To determine the grid cell size:

1 Float your largest image element.

2 In the **Floater List** palette, click **Trim**. This reduces the floater to the minimum rectangle.

3 In the `Controls palette: Adjuster tool`, Painter displays the selected floater's width and height in pixels. Make a note—you might want to use slightly larger values as the grid size.

For this example, the grid size will be 85 by 87 pixels.
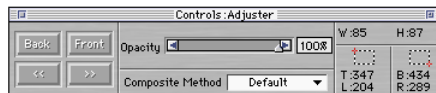
Float your largest image element to determine grid cell size.

4 Determine the number of elements you want in each rank.

In this example, we'll be using six items in Rank-1.

For the second rank progression, we'll use size. The different sizes in the nozzle allow you to control the image size within a stroke. We'll use 6 sizes. This nozzle should have 6 items in the second rank.

5 Multiply the number of items in **Rank-1** by the cell width. This value is the image width.

For this example, 6*85=510 pixels.

6 Multiply the number of items in **Rank-2** by the cell height. This value is the image height.

For this example, 3*87=261 pixels.

7 Create a new document that has the appropriate width and height dimensions.

For this example, the image is set to 510 pixels wide by 261 pixels high.

8 Choose `Canvas menu▶ Grid▶ Grid Options`. The **Grid Options** dialog appears.
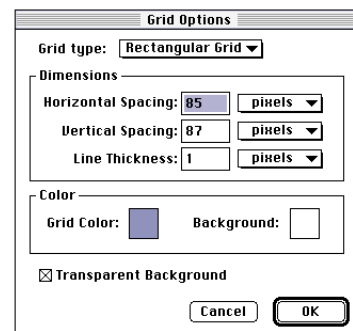
Use the Grid Options dialog to set the grid spacing.

9 Set the **Horizontal** and **Vertical Spacing** to the values of the cell width and height. Click **OK**.

For this example, the spacing is 85 by 87.

10 Display the grid by clicking the **Grid** button above the vertical scroll bar on the image window. The grid should

describe the number of elements you want in each rank—**Rank 1** horizontally, and **Rank 2** vertically.
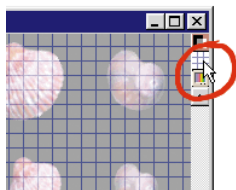
Click on the Grid button to display a grid in the image window.

Building the Nozzle

Once you have set up the nozzle images in the grid, you can build your nozzle.

To build and load a nozzle:

1 Place one image element in the center of each grid cell. The easiest way to do this is with floaters. Follow an appropriate progression, based on your intentions for controlling this nozzle.

For more information on setting up the nozzle progression, refer to "Controlling the Image Hose" on page 111.

2 Each image element must be included in the selection. If you bring image elements into the grid as floaters, they will bring their visibility mask with them.

3 Select all the floaters and choose **Objects palette: Floater menu▶ Drop and Select**. This is the ideal method to create the selection of all image elements.
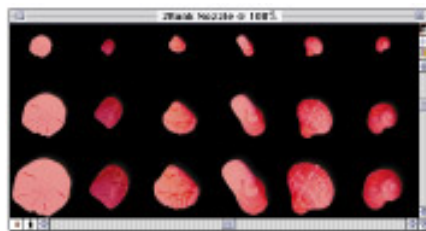
Here the selection is shown as a user mask.

4 Choose **File menu▶ Save As** and save the file in the RIFF format. You can now load the nozzle into the **Image Hose**.
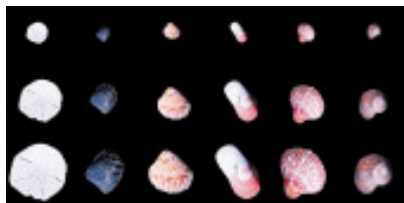
The finished 2-Rank Nozzle—Shell Scales.

5 Choose **Brushes palette: Nozzle menu▶ Load Nozzle**. A standard **Open** dialog appears.

6 Click **Open**. The first time you load the nozzle file, the **Nozzle Definition** dialog appears asking you for some important information. By providing it, you inform

Painter of the math you did when you created the file—the size of each cell and how many image elements there are. Painter needs this information to index images correctly.
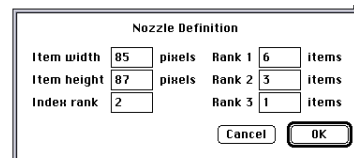
The Nozzle Definition dialog helps Painter index your nozzle images correctly. Note: A 2-Rank nozzle has 1 item in Rank 3.

Item width and **height** describe the cell grid size. Enter the values you set in the nozzle file.

In this example, the size is 85 by 87.

Index rank describes the number of progressions. Enter 2 for a 2-Rank Nozzle.

In the **Rank** columns on the right, enter the number of image elements in each progression.

This example has 6 items in rank 1 and 3 items in rank 2.

7 When you're done with the **Nozzle Definition** dialog, click **OK**.

If the values you enter do not describe the file, Painter will not accept them. In other words, the "number of items" multiplied by the "item size" *must* equal the dimensions of the nozzle file.

Remember, you'll still need to set the sliders in the **Nozzle** palette to describe the control factors for each rank.

8 You can add your new nozzle to the current library. Choose **Brushes palette: Nozzle menu▸ Add Nozzle to Library**.

Creating a 3-Rank Nozzle

You can create a **3-Rank Nozzle** using the grid method described above.

The following suggestions should help you build a **3-Rank Nozzle** with a minimum of fuss.

To create a 3-Rank Nozzle:

1 Build the first two ranks using the grid method described above. Open this 2-Rank file.

For this example, we'll continue the **2-Rank Shell Nozzle** we created earlier.
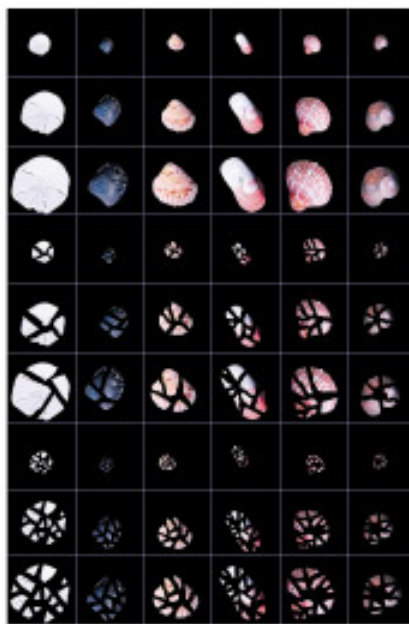
The Broken Shells—a 3-Rank Nozzle.

The shell nozzle file has 6 items in rank 1 and 3 items in rank 2. Each item is 85 pixels wide by 87 pixels high.

2 Determine the number of elements you want in the third rank.

In this example, we'll shatter the shells. We'll use 3 "broken" variations to build the third rank. This nozzle will have 3 items in the third rank. Each item in the third rank will be a *set of images*—the **2-Rank Nozzle**.

3 Check the height of the current nozzle file. Press on the information "i" at the bottom of the window.

4 Multiply the number of items in the third rank by the height of the file. The result you get will be the height of your **3-Rank Nozzle** file.

The **2-Rank Shell Nozzle** we created is 261 pixels high. 3*261=783 pixels.

5 Choose **Select menu▸ Reselect**.

6 Choose **Select menu▸ Float**.

7 Choose **Edit menu▸ Copy**.

Now you must extend this file vertically to accommodate the items in the third rank.

8 Choose **Canvas menu▸ Canvas Size**.

Add the correct number of pixels (to the bottom) to set the canvas to the height of your **3-Rank Nozzle**.

The example file is currently 261 pixels high, so we'll add 522 pixels to the bottom to make it 783 high.

Now you can develop imagery for each item (set) in the third rank.

9 The **2-Rank** image should still be in the Clipboard. Choose **Edit menu▸ Paste**.

10 Position the pasted floater in the area you added. The images should be centered in the grid cells.
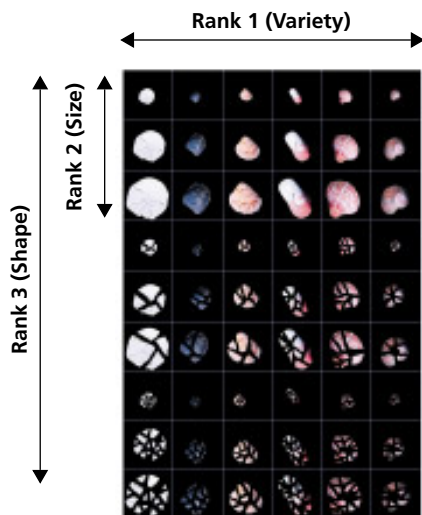
This nozzle file has 6 items in Rank 1, 3 items in Rank 2 and 3 items in Rank 3
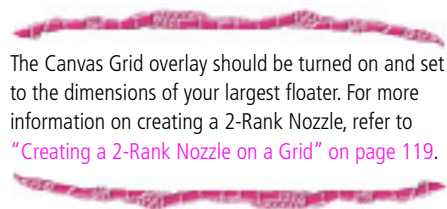
The Canvas Grid overlay should be turned on and set to the dimensions of your largest floater. For more information on creating a 2-Rank Nozzle, refer to

11 Modify the images in this floater according to the third rank progression.

In the example, the artist edited the floater mask to make cracks in the shells.

We used a change in the shape of the shells in this example. You might choose some other progression. Keep in mind that you'll use a different input factor to control image delivery in each of the three ranks.
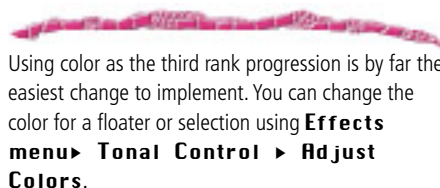
Using color as the third rank progression is by far the easiest change to implement. You can change the color for a floater or selection using **Effects menu▶ Tonal Control ▶ Adjust Colors**.

12 When you've finished modifying the 3-rank floaters, put them back on the canvas. Choose **Objects palette: Floater menu▶ Drop and Select**.

Remember, each image element must be included in the selection.

13 Save the file in RIFF format.

If this is a new file and you did not define it as a 1 or 2-Rank nozzle earlier, refer to

If you previously defined this file as a nozzle, you will need to edit the definition to describe the three ranks you created.

14 Choose **File menu▶ Get Info** or press **Command-I/Ctrl+I**. The **File Information** dialog displays the definition Painter uses to index in this file.

> **File Information**
> File Name: 3Rank Nozzle Elements
> image hose 6 by 3 by 3 items
> (height 87, width 85)
>
> ☐ WWW Map default URL
> [Cancel] [OK]
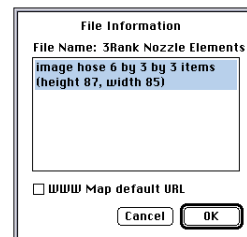
You can edit the nozzle definition from the FIle Information dialog.

Our sample file has items with a width of 85 pixels and a height of 87 pixels. It is a **3-Rank Nozzle** with 6 items in rank 1, 3 items in rank 2, and 3 items in rank 3.

Painting with the 3-Rank Nozzle "Broken Shells."

Nozzle Libraries

Nozzle libraries let you save and retrieve sets of Nozzle files.

For information on loading alternate libraries, creating new libraries, and moving items between libraries, refer to "Libraries and Movers" on page 10.

To add a nozzle to the library:

1 Create and save a nozzle file.

2 Choose **Brushes palette: Nozzle menu▸ Load Nozzle**.

3 Locate your nozzle file in the dialog and click **Open**.

4 If necessary, enter the values to define the number of elements, their size and rank.

5 Choose **Brushes palette: Nozzle menu▸ Add Nozzle to Library**.

To check out a nozzle:

1 In the **Nozzle** palette, choose the nozzle you want to work with.

2 Choose **Brushes palette: Nozzle menu▸ Check Out Nozzle**. Painter opens the nozzle file in an image window.

3 You may edit the file if you like.

4 To put it back in the library, choose **Brushes palette: Nozzle menu▸ Add Nozzle to Library**.

Creating a Nozzle from a Movie

Frame after frame of a Painter movie can flow from the Image Hose.

The frame size describes the "Item Size." If you're creating a movie just to turn it into a Nozzle, set the frame size just large enough to hold your largest image element.

You can use the selection in each frame to control the shape of the images.

To make a nozzle file from any Painter movie:

1 Open the movie you wish to turn into a nozzle file.

2 Choose **Brushes palette: Nozzle menu▸ Make Nozzle from Movie**. An untitled image file appears containing each movie frame.
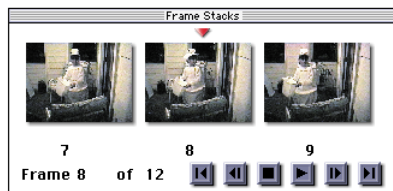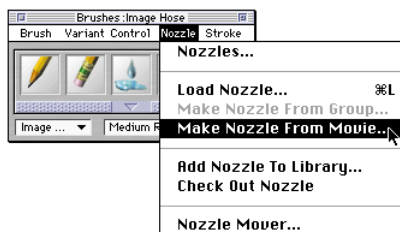
Making a nozzle from a movie.

3 If you didn't create selections in a frame of the Frame Stack, you can create the selections now. Remember each image element must be included in the selection.

The Selection defines the image elements. In this example, a new user mask was created and the mask was painted in to generate the selection.

4 Save it as a RIF file. It can now be opened and used like any **1-Rank Nozzle** file.

Creating a Two-Rank Nozzle from a Movie

The **Make Nozzle from Movie** command automatically creates a 1-Rank Nozzle. If you want, you can use this technique to create a 2-Rank Nozzle.

To create a 2-Rank Movie Nozzle:

1 Arrange the image elements in sets according to the second rank. For example, if the second rank is a progression in color, the movie should be arranged "a set of red, a set of purple, a set of blue... and so on. Each "set" is the first rank progression.

Do not allow empty frames at the end of the movie. The total number of frames must equal the number of elements in Rank 1 multiplied by the number of elements in Rank 2.

2 After you choose **Brushes palette: Nozzle menu▶ Make Nozzle from Movie**, choose **File menu▶ Get Info**. The **File Information** dialog holds the information Painter uses to index in this file.

3 Edit the statement to describe the Nozzle index you created. For example, "12 items" describes a 1-Rank Nozzle with 12 image elements. Changing this to "4 by 3 items" describes a 2-Rank Nozzle with 4 items in rank 1 and 3 items in rank 2.

Painting with an image hose nozzle that was made from a movie.

Select a portion of the image or fill the entire image

Fill, paint, or apply Effects using Art Materials

Color

Grad

Paper

Art Materials

Weave

Press to access pop-up menus

Art Materials
Color Paper Grad Pattern Weave

Press icons to access that material

Pattern

8
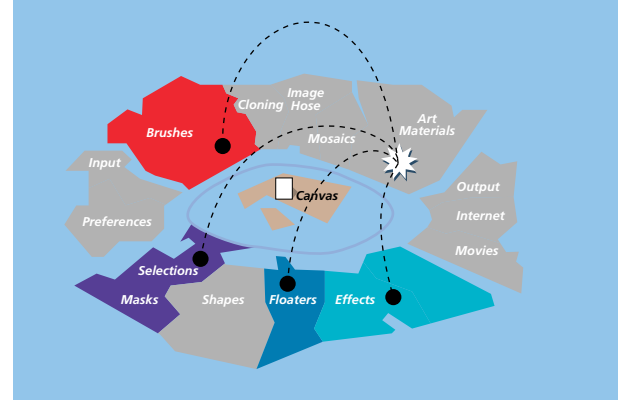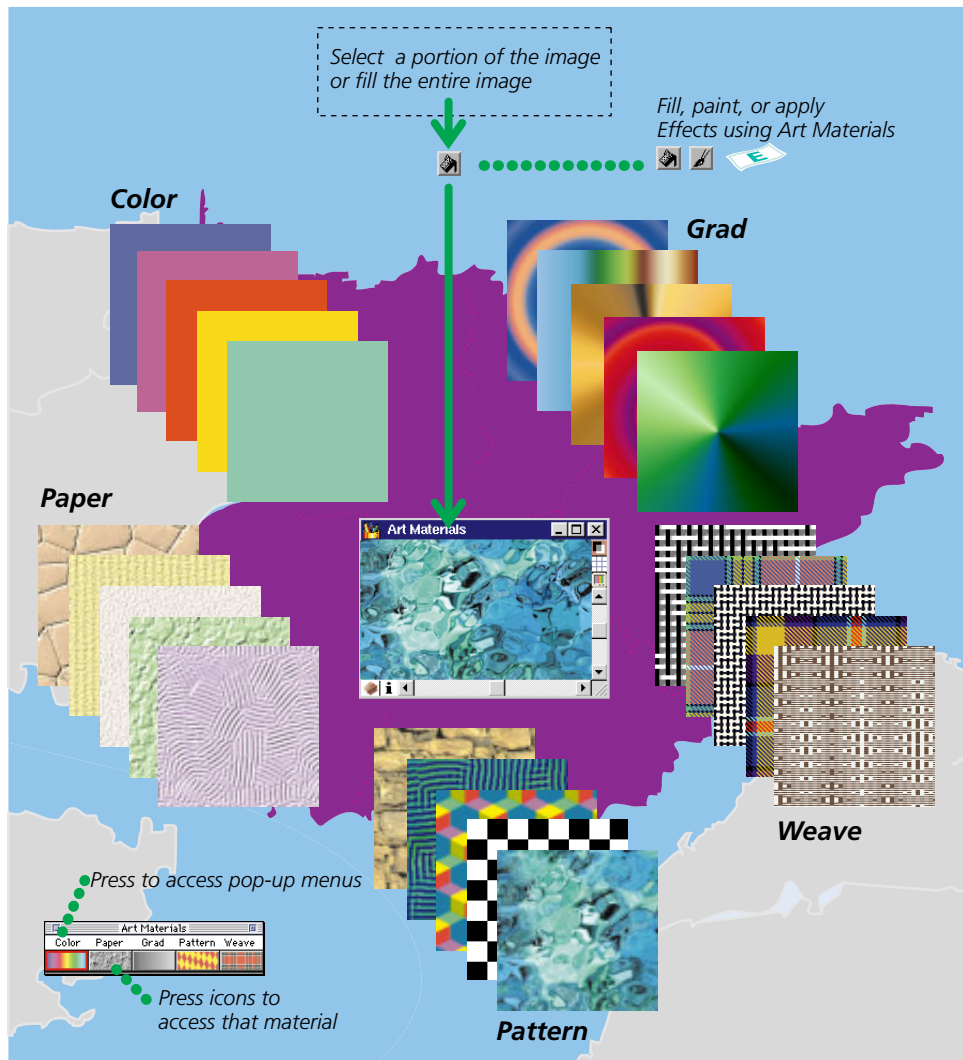
Applying Art Materials

Working with Art Materials

Painter's **Art Materials** palette holds the media you apply to the canvas—color, paper textures, gradations, patterns and weaves. You'll use the art materials in several ways:

- To load the **Brush** tool for painting.

- To fill selections with the **Effects menu▶ Fill** command or with the **Paint Bucket** tool.

- To control certain image effects, for example **Apply Surface Texture**.

In this chapter you'll learn how to select and customize the different Art Materials. You'll also learn how to create your own materials and save them to a library.

The Art Materials Palette

The **Art Materials** palette organizes all of Painter's art materials. It can be displayed in a variety of ways. In its smallest form, you see the face of the palette displaying the subpalette icons.

The **Art Materials** palette is a main palette, and each material is a subpalette. Click the icons to switch between subpalettes. You can tear off the subpalettes if you like, for example to use the **Color** palette and **Grad** palette at the same time.

If you do not see the **Art Materials** palette on your screen, you can display it by choosing **Window menu▶ Show Art Materials**.
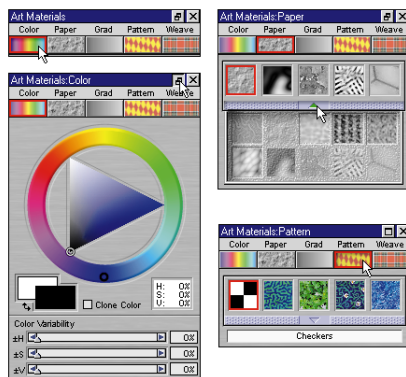
Click on the icon below the Art Materials palette menu names to display their subpalettes. Click on the grow box in the upper right to expand the palette.

For more information on palettes and subpalettes, refer to *"Using Palettes and Getting into Drawers" on page 7*.

For color, Painter offers **Color Sets**. All of the other art materials use libraries. The default libraries offer sample materials. You'll find more libraries with additional materials on the Painter CD-ROM and on our Web site.
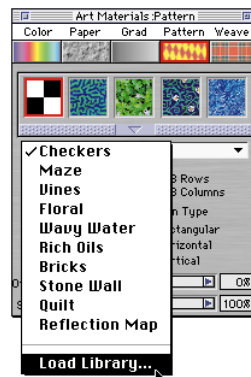
The Paper, Grad, Pattern and Weave palettes use libraries. Load other libraries for more materials.

For more information on libraries, including loading alternate libraries, creating your own libraries and managing library contents, refer to *"Libraries and Movers" on page 10*.

Filling with Art Materials

To fill an area with art materials—color, a gradation, pattern or weaving, use the **Effects menu▶ Fill** command or the **Paint Bucket** tool. More information about filling is found in *"Filling Techniques" on page 150*.

What about filling with Paper? The Paper is a texture. It has no color by itself. However you can get texture into the image with various image effects. Use **Effects menu▶ Surface Control▶ Express Texture** for pure texture. You can also try other Surface Control effects that let you use Paper as the control medium, for example **Apply Surface Texture**.

Working with Colors: The Color Palette

In Painter, you can add color to images in many ways. The **Color** palette is where you select the colors to use. You can also use the **Dropper** tool to sample or "pick up" a color from an image.

A feature unique to Painter is the ability to set color variability. Color variability can enhance the Natural-Media appearance of your work. The **Color** palettes contain sliders to adjust variability. Variability allows you to create brush strokes of several color levels.

This chapter describes how to work with color, apply color to your canvas and manage colorsets. Color Management for output is described in .

Using the Color Palettes

Painter provides three different types of **Color** palettes for you to use: **Standard Colors**, **Compact Colors**, and **RGB Colors**. You can choose between palette displays using the **Art Materials palette: Color menu▶ Color Picker▶**.

The **Standard Color** palette has a hue ring and color triangle.
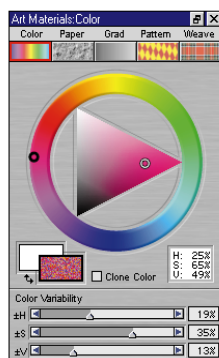
The Standard Color palette expanded to show Color Variability sliders.

The **Compact Colors** palette displays the hue ring as a single bar with a color triangle.

The **RGB Colors** palette provides simple RGB sliders for choosing color.

Click the grow box to expand the palette and to see the variability sliders.

To select a hue and color from the Standard Color palette:

1 Drag the circle on the color ring to select the predominant hue. You can also select the hue by clicking once anywhere on the ring.

The triangle displays all the available colors within a predominant hue.

2 Select a color on the triangle by dragging the circle or clicking on the color you want.

Within the triangle, the colors are organized by value and saturation. Values span the triangle from top to bottom, with the top of the triangle being the highest value (white), the bottom the lowest value (black).

Saturation levels go from left to right. Dragging to the right produces the purest color within the predominant hue. Dragging to the left gives muddier or grayer colors.
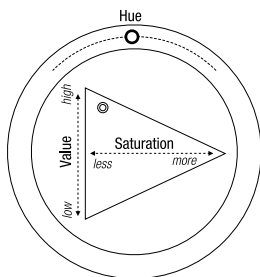
A diagram of the Standard Color palette.

Primary/Secondary Color Rectangles

The color you select appears on the front rectangle in the pair of overlapping rectangles. The front rectangle shows the selected primary color. The back rectangle shows the selected secondary color. Whenever you start Painter, black is the selected primary color and white is the selected secondary color.

You can swap the primary and secondary colors by clicking the "swap" icon.

Don't confuse the secondary color with what other graphics programs call "the background color." In Painter, the background color is the paper color. For more information about setting the paper color, refer to "Setting Paper Color" on page 21.

Most of the time you'll work with the primary color. The secondary color is for multicolor brush strokes, two-point gradations, and Image Hose effects.

You can change the secondary color by clicking on the back rectangle, then picking a color. After changing the secondary color, click the front rectangle again.

Sampling Colors from Imagery

In addition to choosing colors from the **Art Materials: Color palette**, you can use the **Dropper** tool to pick up a color from an existing image and use the color elsewhere. You can also choose the **Clone Color** option to use colors from the clone source image.

Dropper

To use the Dropper tool:

1 Click the front overlapping rectangle on the **Art Materials: Color palette** if you want to change the primary color. Click the back rectangle if you want to change the secondary color.

2 Choose the **Dropper** tool.

Note: From the **Brush** or **Paint Bucket** tools, you can temporarily switch to the **Dropper** by holding down the **Command/Ctrl** key.

3 Move the cursor to the color you want to pick up and click on it.

The **Dropper** tool does not sample color from a plug-in floater or the wet layer (water colors).

The color picker updates to the color. The **Controls palette: Dropper tool** shows the HSV and RGB values for the color. RGB values are given in both decimal and hexadecimal format (which can be useful in Web authoring).

Clone Color

The **Clone Color** option is another way to choose color. This feature lets the brush pick up color from the original (source image) while staying true to its own nature. **Clone Color** takes averaged samples of color from the clone source, resulting in an approximation of the original. For more information about cloning, refer to "Painting in the Clone" on page 82.

To use clone color:

1 Set up a clone source. If you don't set a file as the source, Painter uses the current Pattern.

2 Select any brush. You may also use this feature when creating a mosaic.

3 Click the **Color** icon on the **Art Materials** palette to open the **Art Materials: Color palette**.

4 Click **Clone Color**. You may also choose **Art Materials palette: Color menu▶ Use Clone Color**.

Enabling the **Clone Color** option disables the color picker. This is a reminder that your color information is coming from the clone source.

5 When you paint in the clone file, Painter uses colors from the clone source image.

Setting Color Variability

Use the **Art Materials: Color palette** to set up multiple colors for any of Painter's brushes.

To display the **Art Materials: Color palette**, click the **Color** icon on the **Art Materials** palette and expand the palette if necessary.
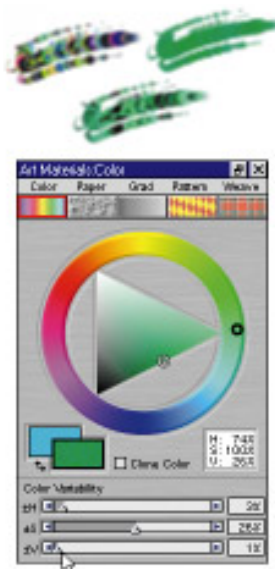
Use the Color Variability sliders in the Color palette to set up multiple colors for Painter's brushes. The variable colors are shown in the primary color rectangle.

The ±HSV sliders control ranges of hues, saturations, and values. Moving the ±**H**ue slider to the right increases the number of hues in the brush stroke. These colors are the ones adjacent to the selected color on the color wheel.

Moving the ±**S**aturation slider to the right increases the variability in the color intensity of the brush stroke.

Moving the ±**V**alue slider to the right increases the variability in the brightness of the brush stroke.

You can try different ±**HSV** slider settings with any of the brushes to get some interesting results. Moving these sliders to the right is most useful when you're working with brushes like Painter's **Loaded Oils** brush, and the **Van Gogh** and **Seurat** variants of the **Artists** brush.

When you save a brush variant, the current color variability setting is saved with that variant.

Using Two Colors at Once

Usually you work with only the primary color, the front rectangle of the two overlapping rectangles in the **Color** palettes. Using one color produces a solid brush stroke.

By selecting a secondary color, you can determine the colors for multicolored brush strokes. Many brush variants are able to paint with a variable range of colors.

The settings for the brush on the **Sliders** palette (**Brushes palette**: **Control menu▸ Sliders**) determine how Painter decides when to use one color or the other. For information on this palette, refer to "Sliders Palette" on page 71.
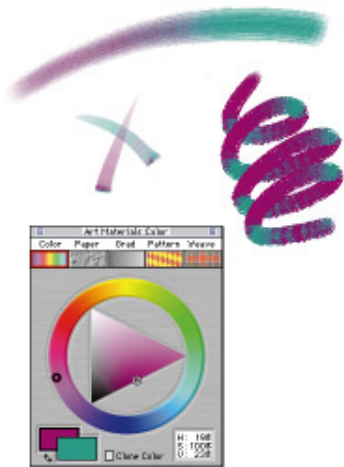
Set the primary and secondary colors to use two colors at once.

To set up a two-color brush stroke:

1 Select the **Graduated Brush** variant or another mark-making brush variant.

2 Click the front rectangle on the **Color** palette to select it.

3 Select a color on the **Color** palette or from a color set. The front rectangle shows your selection.

4 Click the back rectangle and select a secondary color.

5 Click the front rectangle again to make it active. This keeps the primary rectangle selected for the next time you pick a color.

6 Before you make a stroke, choose **Brushes palette: Control menu▸ Sliders**. The **Sliders** palette appears.

7 Set the **Color** slider to **Direction**.
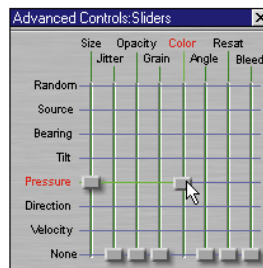
The sliders help you to set up a two color brush stroke.

8 In your document, paint an "X." Notice that the primary color is used in one mark and the secondary color is used in the other. Draw some loops and circles to see the transitions.

You might want to try a different setting for the **Color** slider. Try **Pressure** instead of **Direction**.

Color Sets

Color sets are used to organize groups of colors. Some color sets, like the Pantone color set, are organized both by name and color relationship.

Painter provides several color sets— Painter Colors, Macintosh and Windows system palettes, and the Pantone Matching System® are a few.

One color set is open at a time, but you can easily load a different set.

Using the Color Sets

To display the current color set:

Choose **Window menu▸ Show Color Set**. You may also press **Command-6/ Ctrl+6**. The **Color Set** palette appears on the screen.
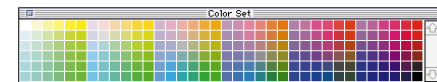
Painter's default color set.

To load a different color set:

1 Choose **Art Materials palette: Color menu▸ Load Color Set**. A standard **Open** dialog appears.

2 Locate and double-click on the color set or select the color set and click **Open**. The new color set is loaded.

You can set a default color set in the Preferences dialog. For more information, refer to .

To choose a color from a color set:

1 In the **Color** palette, click on the primary or secondary (front or back) rectangle to select the one you want to change.

2 In the **Color Set** palette, click the color you want.

Finding Colors

There are two ways to find a color on a color set—by searching for the color name or by matching the current color.

To name your colors, refer to .

To find a color:

1 On the **Art Materials palette: Color menu▶ Adjust Color Set**. The **Color Set** palette appears.

2 Click **Find Color**. The **Find Color** dialog appears.

3 Select a search method. You can find a color by name or find a color that's closest to the current color.
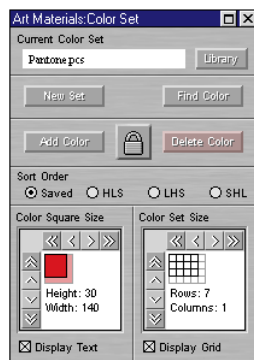
Use the Color Set palette to find colors.

4 Click **Search**. If the name isn't found, the **OK** button is grayed out.

5 Click **OK.** If the color set is visible, Painter surrounds the found color with the selection frame.

Customizing Color Sets

You can rearrange color set layouts, create new color sets, and add and delete colors from color sets.

Customizing Color Set Layouts

You can arrange a color set in a variety of ways. You can specify the number of rows and columns, the size of the color swatches, whether or not there are grid lines, and whether or not the colors are named.

You can make changes in any order until the color set is exactly the way you want it. The numbered steps in the next set of instructions give you a place to start.
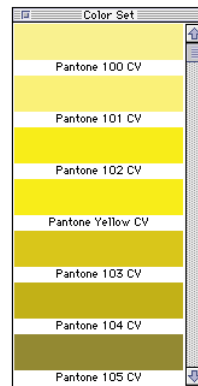
The Pantone Colors Color Set.

To customize a color set layout:

1 Choose **Art Materials palette: Color menu▶ Adjust Color Set**. The **Color Set** palette appears.

2 If the color set is locked (padlock closed), click the **Padlock** button on the **Color Set** palette to unlock it.

3 Click a **Sort Order** radio button to order the colors in the set.

Saved sorts colors in the order they were originally entered.
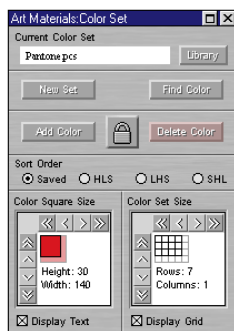
The Color Set palette provides tools for selecting and arranging color sets.

HLS sorts colors by hue, luminance, and saturation

LHS sorts colors for a luminance, hue, saturation order

SHL sorts colors by saturation, hue, and luminance.

4 Use the **Color Square Size** box to adjust the size of the individual squares in the color set. Click the single arrows to expand or contract each square by one pixel. Click the double arrows to double or halve the size of each square.

5 Use the **Color Set Size** box to change the number of rows and columns in the color set. Click the single arrows to add or delete rows or columns one at a time. Click the double arrows to double or halve the number of rows or columns in the color set.

6 Click the **Display Text** checkbox at the bottom of the **Color Square Size** box to turn the color names on and off.

7 Click the **Display Grid** checkbox at the bottom of the **Color Set Size** box to turn the grid on and off. Turning it off eliminates the lines between colors. You can see more colors, but the separations between colors are not as distinct as when the grid is on.

Creating Color Sets

You can create your own color sets to control the colors in particular projects or create groups of your favorite painting colors. You might call one color set "shades of purple." You might call another color set "crayons" or "watercolors."

If you want to pick up colors from an image, open the image before you begin creating the color set. You can customize the swatch size, grid lines, and names as described in .

To create a color set:

1 Choose **Art Materials palette: Color menu▸ Color Set**. The **Color Set** palette appears.

2 Click **New Set**. A new empty Color Set palette appears.

Sometimes when you create a new set, the title bar is hard to see. Once you add a color, the color set expands and will be easy to locate.

3 Choose a color you wish to add to the new color set. You can choose a color from the **Art Materials: Color palette** or from an existing image.

If the color set is locked, click the **Padlock** button on the **Color Set** palette to unlock it.

4 On the **Color Set** palette, click **Add Color**. The color is added to the color set. To name the newly added color, double-click the color swatch and enter a name in the dialog that appears.

5 Repeat this procedure until you have chosen all of your color set colors.

You may change the name of any color in a color set by double-clicking the color. A dialog appears asking you to name the color. Type the new name and click **OK**.

6 Click the **Library** button. A dialog appears asking if you want to save the changes you've made.

7 Click **Save**. Enter a name for the color set, choose a destination directory, and click **Save**.

8 The **Open Color Set** dialog appears. You can cancel this dialog to keep your saved color set as the active one.

Adding and Deleting Colors from a Set

Customize color sets further by changing, adding, or deleting colors.

To add a color to an existing color set:

1 Choose the color you want to add to an existing color set. You can choose a color from the **Art Materials: Color palette** or from an existing image.

If the color set is locked, click the **Padlock** button on the **Color Set** palette to unlock it.

If you want to add a color from an existing color set, select the color in the existing color set before you open the destination set. When you open or create a new set, Painter will first close the current set and then display the new set.

2 On the **Color Set** palette, click **Add Color**. The color is added to the color set. To name the newly added color, double-click the color swatch and enter a name in the dialog that appears.

To delete a color from an existing color set:

1 Choose the color set that contains the colors you want to delete.

If the color set is locked, click the **Padlock** button on the **Color Set** palette to unlock it.

2 Click to select the color you want to delete. The current selection frame surrounds it.

3 On the **Color Set** palette, click **Delete Color**. A dialog appears asking if you really want to delete the color.

4 Click **Yes**. Painter deletes the chosen color from the color set window.

To change a color in an existing color set:

1 Choose the new color you want to place into the open color set. You can choose a color from the **Art Materials: Color palette** or from an existing image.

If the color set is locked, click the **Padlock** button on the **Color Set** palette to unlock it.

2 Hold down the **Option**/**Alt** key and triple-click the color in the color set that you want to replace. The new color replaces the old one in the color set.

Naming Colors

Names can be used to search on a color name or for annotating colors in the image window.

The naming of colors is useful if you want to search on color names, or if you want to annotate colors. For more information on searching for a color, refer to "Finding Colors" on page 131. For more information on annotating colors, refer to "Annotating Colors" on page 134.

To name a color:

1 Double-click on a color swatch in the open **Color Set** palette. The **Color Name** dialog appears.

2 Enter the color name and click **OK**.

Annotating Colors

Painter's Annotation feature uses the color names to label the colors in your images. You can hide or show these labels in your on-screen or printed image (only color sets with names will annotate properly). Annotations can be up to 31 characters long.

To create annotations:

1 Create an image using a color set that includes names for the colors.

For more information on naming colors, refer to "Naming Colors" on page 133.

2 Choose **Canvas menu▸ Annotations▸ Annotate**. The **Annotation** dialog appears.

Painter will not update annotations if you have changed the names of colors in the color set after annotating. To rename an annotation, you must first delete the annotation, then you can rename the color in the color set and recreate the annotation.

3 Position the cursor on the color you wish to annotate and drag to an area outside the color. When you let go, the color's name appears with a line pointing to the annotated section. If a color isn't an exact match for a color in the color set—

for example, because you're annotating brush strokes applied at less than 100% opacity—Painter approximates the color and puts an asterisk after the color's name.

4 Continue to drag, once for each color, until all colors are annotated.
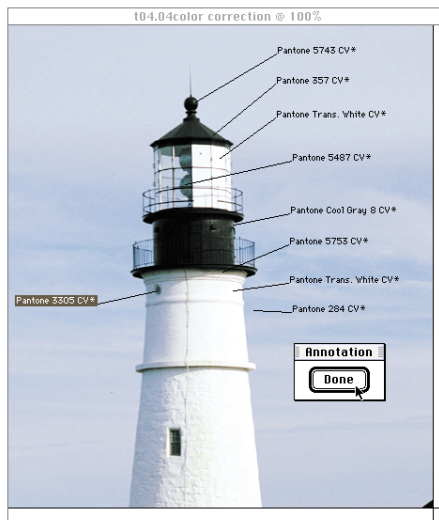
Drag from a color to create color annotations.

5 Click **Done**. If you refill an annotated area using the **Cartoon Cel** or **Contiguous Pixel Fill** palette options (described in "Using the Cartoon Cel Fill Method" on page 152), the annotation will be updated to reflect the new color.

To delete an annotation:

1 Choose **Canvas menu▸ Annotations▸ Annotate**. The **Annotation** dialog appears.

2 Click the annotation tag (name) to select it.

3 Press **Delete**/**Backspace**.

To show/hide an annotation:

1 Choose **Canvas menu▸ Annotations▸ Show Annotations**. The **Annotation** dialog appears.

2 To hide an annotation, choose **Canvas menu▸ Annotations▸ Hide Annotations**.

Annotations and Other Painter Features

Annotations float in a separate layer on top of the image and can be saved in the RIF format with your image.

Annotations are included when you record a session, and they are properly scaled when you play back at a different resolution.

When you move a floater, its annotations go with it. If you move an annotated floater on top of another, the visible annotation

might actually belong to the underlying floater, even though it appears to be labeling the top one.

Using Gradations: The Grad Palette

A gradation is a gradual transformation of one color into another. Sometimes they are called *blends* or *fountains*. Painter provides several different types of gradations: **linear**, **radial**, **spiral** and **circular**.

What you can do with gradations:

- Fill an image selection, floater or mask.
- Control the Pop-Art Fill effect. (For other effects, fill a mask and use it.)
- Express the gradation in an existing image by mapping its colors to image luminance.

Although Painter comes with libraries full of gradations, you'll want to create some of your own. You can define two colors and create a gradation between them. You can also capture gradations from existing images and save them for use in other images. You can create libraries for your gradations.

Working with Gradations

Use the **Art Materials: Grad palette** to select and adjust Painter's gradations.

Click the **Grad** icon on the **Art Materials** palette to display the **Art Materials: Grad palette**. Click the palette push bar to display additional gradations stored inside the drawer. Click the grow box to expand the palette.
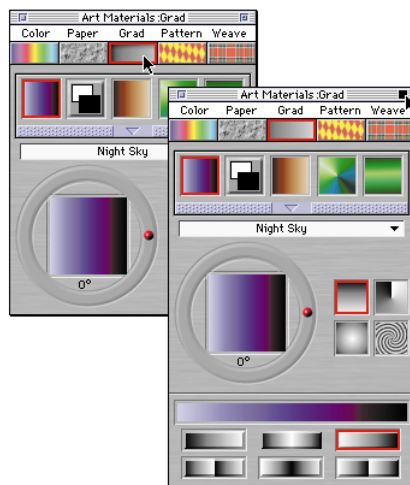
Click on the Grad icon to display the Grad palette.

Remember that gradations are stored in libraries. You can load alternate libraries for more grad choices. For more information on working with libraries, refer to "Loading Alternate Libraries" on page 11.

In the center of the palette, the **Preview window** shows how the current settings affect the selected gradation.

The **Rotation Ring** changes the angle of the gradation. Drag the red ball in the ring to change the angle. You can also select the angle by clicking once anywhere on the ring. The numeric value appears below the preview.

For a spiral gradation, you can use the **Rotation Ring** to change how tightly the spiral is wound. Hold down the **Command/Ctrl** key and drag around the **Rotation Ring**.

You can click inside the gradation preview and Painter rotates the gradation for you. Click anywhere outside the preview to stop the rotation.

The **Gradation Types** on the right of the palette let you select from four types of gradations—linear, radial, spiral or circular.
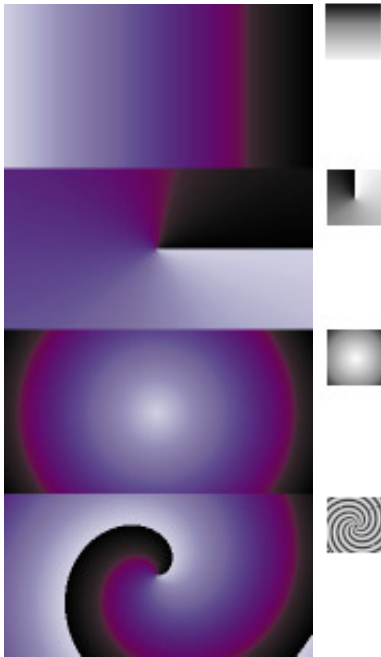
Examples of the gradation types.

The **Gradation Orders** at the bottom of the expanded **Grad** palette determine how a gradation behaves. The **Preview Strip** (above the gradation orders) shows the selected gradation order.

The top row (from left to right) orders the current gradation from left to right, left to right and mirrored, and right to left. The bottom row orders the current gradation from left to right and doubled, right to left and mirrored, and right to left and doubled.
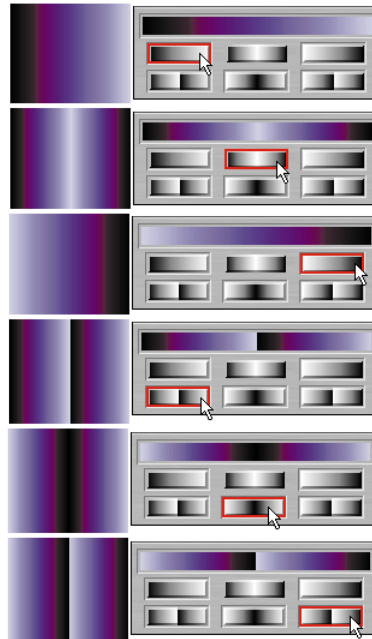
Examples of the gradation orders.

Creating Gradations

You can create your own gradations from simple to complex. For a simple gradation, choose primary and secondary colors to define a two-point gradation. For more complex gradations, use the Gradation Editor or capture gradations from existing artwork.

Creating a Two-Point Gradation

You can define a two-point gradation by defining two colors in the **Art Materials: Color palette** and then having Painter create the gradation between them.

You might want to tear off the **Grad** palette or the **Color** palette, so you can see both at once. For more information on tearing palettes, refer to "Tearing Off to Create a New Palette" on page 14.

To create a two-point gradation:

1 Open the **Art Materials: Color palette**.

2 Choose a primary color.

3 Choose a secondary color.

Now that you have defined the two colors, you can make the gradation in the **Grad** palette.

4 Open the **Art Materials: Grad palette**.

5 Select the **Two-Point** icon in one of the following ways:

- Choose Two-Point from the Library pop-up.

- Alternatively, you can open the drawer and click to select the **Two-Point** icon (the one that looks like overlapping

rectangles). If necessary, open the drawer to find the icon. If it's in the drawer, drag it to the drawer front.
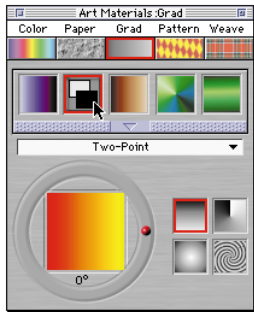
Click on the Two-Point icon or select Two-Point from the Library pop-up menu.

6 Make sure the drawer is closed, so you can see the preview of your gradation.

7 Try changing the color order by clicking the different icons at the bottom of the window. You can also try out different gradation types.

You can save the gradation or use it to fill a selected object. For more information on filling an object, refer to "Filling Techniques" on page 150.

Saving a Gradation

To save a gradation:

1 Once you have created your gradation, choose Choose **Art Materials palette: Grad menu▸ Save Grad**. The **Save Grad** dialog appears.

2 Enter the name for your gradation.

3 Click **OK**.

Creating Gradations with the Gradations Editor

Use the gradations editor to create new gradations or edit simple, two-point gradations into a more complex blend.

To edit a gradation:

1 Choose **Art Materials palette: Grad menu▸ Edit Grad**. The **Edit Grad** dialog appears.
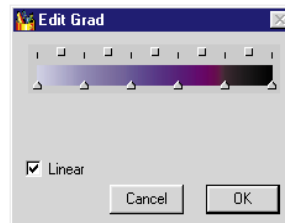
Use the gradation editor to edit saved gradations.

It is often convenient to have both the **Color** palette and the **Grad** palette available during editing.

The colored ramp across the top of the dialog displays the current gradation bar.

The pointed gray markers along the bottom of the bar are the color control points. You can select these points and change the color of the blend at this point.

2 Make your changes to the gradation as discussed in the following sections.

3 Click **OK** to exit the **Edit Grad** dialog.

Changing Color Control Points

To change a control point color:

1 Click a color control point (pointed gray marker) to select it.

2 Select a new color from the **Color** palette.

To start with a two-point gradation, click on the far right control point and then choose a color. Click on the far left control point and choose a different

color. Now you can generate additional colors in between by adding new control points.
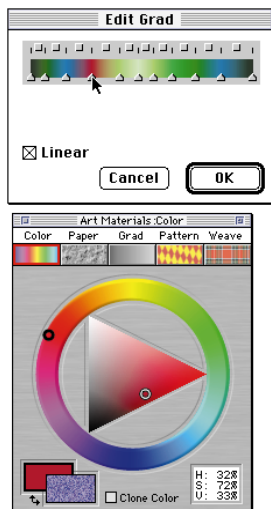
Click the color ramp bar to add a color.

Adding and Deleting Color Control Points

You can easily add new color control points by clicking in the gradation bar. Click anywhere in the color ramp bar and a new control point is added without changing the color at this location in the bar. If you **Option**-click/**Alt**-click in the bar, a new control point is added and set to the current color. You can also press the **Delete**/**Backspace** key to remove the selected color control point.

Using the Linear Check Box

Leave the **Linear** check box checked to create ramps that blend linearly between colors. When editing non-linear gradations (**Linear** is unchecked), all ramps within the gradation are non-linearly blended using smooth curves. When using non-linear ramps, you should use the **Color Spread** slider to control the color smoothness at each color control point.

Changing the Color Space

The color space is represented by boxes located at the midpoints between the adjacent color control points. They allow you to change the hue of the blend within that segment.

To change the color space:

1 Click on a square box above the color ramp bar.

The **Color** pop-up menu appears.
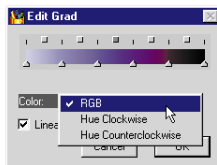
The Color pop-up appears with you select a Color Space square at the top of the color ramp bar.

2 Select an option from the Color pop-up.

RGB blends directly between the red, green, and blue components of the two colors.

Hue Clockwise and **Hue Counterclockwise** Blends between the endpoint colors by rotating around the color wheel. For a better understanding of this concept, refer to the standard Color Picker (ring and triangle) and note the order of the colors on the Hue ring.

Notice that as you change the parameters within the **Edit Grad** dialog, the gradation previews are updated within the **Grad** palette.

3 Click **OK** when you're finished. You can now save your new gradation. For more information on saving, refer to "Saving a Gradation" on page 137.

Capturing a Gradation from an Image

You can use any existing imagery as a source for creating new gradations.You could capture the colors in a photo of a sunset or paint your own range of colors as the content of a gradation.

To capture a gradation:

1 Use any tool to draw a gradation or open an existing image.
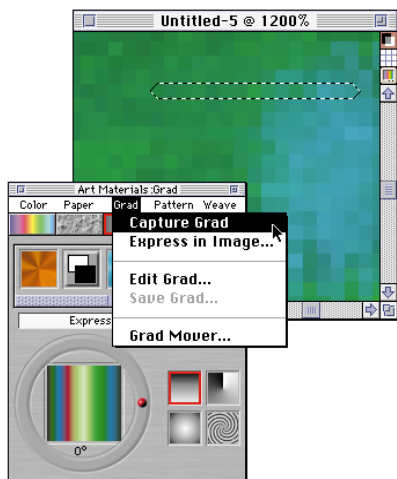
To make perfect blends between a series of colors, it's better to work with a row of single pixels rather than a large piece of an image. The image window at left shows a selected row of single pixels. The gradation they make is shown on the Grad palette.

2 Using the **Rectangular Selection** tool, select a horizontal or vertical area. Make the selection as narrow as possible. If the selection is horizontal, Painter uses the first row of pixels starting at the upper left for the gradation. If the selection is vertical, Painter uses the first column of pixels starting at the upper left for the gradation.

3 Choose **Art Materials palette: Grad menu▸ Capture Grad**. The **Save Grad** dialog appears.

4 Type a name for the gradation and click **OK**. The new gradation is saved in the current library. In the future you can choose it by name from the **Grad** palette Library pop-up menu.

For information on working with libraries, refer to "Libraries and Movers" on page 10.

Mapping a Gradation to Image Luminance

You can also map a gradation to an existing image, replacing an image's colors with those of the gradation. This effect applies gradation colors to the pixels of the image based on their luminance values.

Painter allows you to apply a gradation based on the luminance value of existing colors.

To express a gradation in an image:

1 Open the image you want to use. You can select part of the image or use the entire image. Patterns created with **Make Fractal Pattern** provide excellent source images.

2 On the **Art Materials: Grad palette**, select the gradation you want to use.

3 Choose **Art Materials palette: Grad menu▸ Express in Image**. The **Express in Image** dialog appears.

4 Adjust the **Bias** slider to define how the gradation is mapped. Painter replaces the colors in the image with the colors in the gradation, based on matching luminance.

5 Click **OK**.

Using Texture: The Paper Palette

Paper textures are useful in many ways. Painter's brushes interact with the grain just as natural tools react with the texture of the surfaces on which you mark. Paper grains are also useful in applying Surface Texture and other Effects, like Glass Distortion.

Note: The terms "paper grain" and "paper texture" are synonymous.

When you choose a brush that interacts with paper grain, you see the results with each stroke. If you find a brush and paper combination you like, you can save it as a brush look.

You can select different paper textures, modify them, organize them in libraries, and even create your own custom textures.

Click the **Paper** icon on the **Art Materials** palette to display the **Art Materials: Paper palette**. Click the palette push bar to display additional papers stored inside the drawer. Click the grow box to expand the palette.

The **Paper** palette is where all your paper textures are stored. In addition to using it to select papers, you can use this palette to invert or resize the grain and to open other paper libraries.
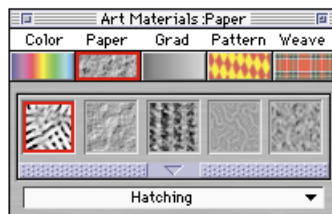
Click on the Paper icon to display the Paper palette.

Selecting a Paper Texture

To select a paper texture:

1 Click the **Paper** icon on the **Art Materials** palette to open the **Art Materials: Paper palette**.

2 Click the push bar and open the drawer to see more selections.

3 Click a paper texture to select it.

The palette shows the dimensions of the paper (in pixels). Painter tiles the paper to cover as much canvas as needed.

Remember that paper textures are stored in libraries. You can load alternate libraries for more paper choices. For more information on working with libraries, refer to .

Inverting Paper Grain

You can think of paper grain as a three-dimensional landscape. Usually brushes react to paper texture by coloring the peaks and ignoring the valleys. Enabling the **Invert Paper** option (either in the **Paper** menu or the checkbox in the palette) makes color fill the valleys and ignore the peaks.
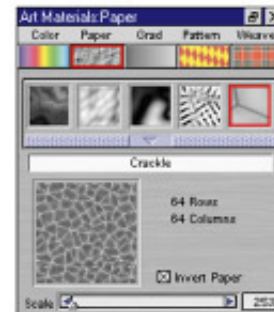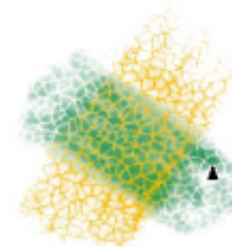
Two brush strokes overlapping, the green was painted with grain inverted.

If you want paper grain to appear uniformly across the image, you should create the artwork first, then apply the grain as a surface texture. If you apply a paper texture when you create an image, the paper is erasable. You can't erase brush strokes without erasing the paper. Generally, you'll add the paper texture as the last step, not the first step, in developing your image.

Scaling Paper Grain

Use the **Scale** slider at the bottom of the **Paper** palette to resize the paper grain. As you move the slider, the texture preview updates to display the new size. You can scale the texture down to 25% and up to 400%.

Scaling large textures can use a great deal of RAM. Most textures in Painter are from 50 to 400 pixels square, at 100% scaling.
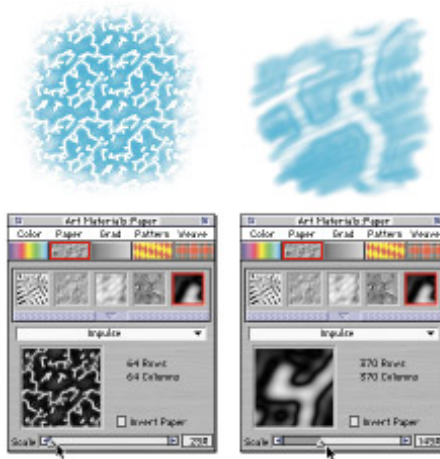
Scaling paper grain affects how the grain appears in brush strokes and image effects.

Capturing Paper Textures

The **Capture Paper** command lets you turn a section of an image into a paper texture. Once textures are saved, they are available from the **Paper** palette drawer and Library pop-up menu.

To capture paper texture:

1 Open or create an image. The **Make Fractal Pattern** feature creates excellent textures. Certain weaves also produce good textures.

2 Using the **Rectangular Selection** tool, select all or a piece of the image.

3 Select **Art Materials palette: Paper menu▸ Capture Paper**. The **Save Paper** dialog appears.

4 If necessary, move the **Crossfade** slider to the right to blend the distinction between tile borders.

5 Type the name of your new texture and click **OK**.

Your texture now appears in the **Paper** palette drawer and is added to the current library.

Making Paper Textures

The **Make Paper** command lets you make your own paper textures.

To create paper textures:

1 Choose **Art Materials palette: Paper menu▸ Make Paper**. The **Make Paper** dialog appears. The Preview window reflects your changes.
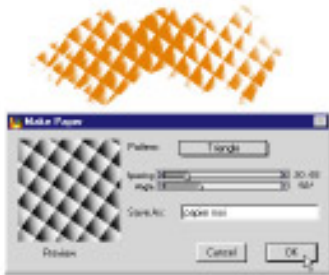
Make Paper Texture dialog allows you to create your own Painter textures based on the patterns in the Pattern pop-up menu.

2 Choose a pattern from the **Pattern** pop-up menu to use as the basis of your paper texture.

The reference to patterns in this discussion has no relation to the Pattern palette or the Define Pattern and Capture Pattern features. "Pattern" is only used to describe the nature of the paper texture.

3 Adjust the **Spacing** and **Angle** sliders. Moving the **Spacing** slider to the right opens up space between rows and columns in the selected pattern. Moving the **Angle** slider changes the direction in which the pattern rows are lined up.

4 When you like the look of the texture, type a name for it and click **OK**. Your new texture appears as the last item in the **Paper** palette.

Randomizing Paper Grain

Normally, paper grain is fixed—the texture is in the same position each time you apply a brush stroke. You may change this if you want the grain to move randomly.

To randomize the paper grain:

1 Choose **Brushes palette: Control menu▸ Random**. The **Random** palette appears.

2 Enable the **Random Brush Stroke Grain** option.
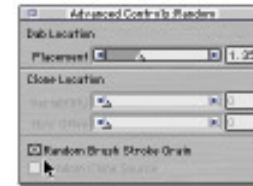
Randomize paper grain to create a cool effect.

Using Patterns: The Pattern Palette

A pattern is a repeating design. The smallest unit of a pattern is known as a *tile*. When you fill with a pattern, the tile is repeated across the area. Painter saves tiles in separate files and in libraries.

You'll find a sampling of patterns in the default library. You'll find other pattern libraries on the Painter CD-ROM.

All of the patterns are displayed in the **Pattern** palette. Click the **Pattern** icon on the **Art Materials** palette to display the **Art Materials: Pattern palette**. Click the palette push bar to display additional patterns stored inside the drawer. Click the grow box to expand the palette.
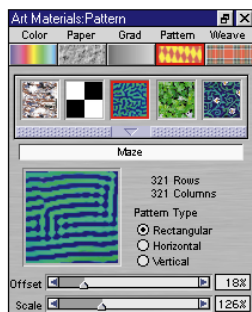
Click on the Pattern icon to display the Pattern palette.

Patterns are created by repeating a rectangular image tile across the area. Ideally, the images are created so that they tile seamlessly. Painter provides several features to help you generate seamless tiles.

Once a pattern is defined as a tile, you can paint off the side of the canvas and your stroke appears on the opposite side of the canvas. Or you can capture the pattern after you create it and manipulate it to be a half-drop design, traditionally used in wallpaper design.

What you can do with Patterns:

• Fill selections with imagery.

• Paint using a cloning brush.

• Control image effects.

If you have not set a clone source, the current pattern is used in any operation referring to clone source colors or luminance. This means you can paint with the pattern using a **Cloner** brush.

To choose a pattern:

❶ Click the **Pattern** icon on the **Art Materials** palette to open the **Art Materials: Pattern palette**.

❷ Click the icon for the pattern you want. You can click the push bar to open the drawer and display more choices.

❸ When you've selected a pattern, close the drawer.

The palette shows a preview of the pattern, gives the dimensions of the tile image (**Rows** and **Columns** describe the number of pixels horizontally and vertically), and gives you options for scaling and arranging the tile in fills.

Rectangular places the tile in a regular grid for fills. The **Offset** slider does not apply.

Horizontal offsets the tiles in subsequent rows. The **Offset** slider controls the amount of offset.

Vertical offsets the tiles in subsequent columns. The **Offset** slider controls the amount of offset.

When you've set these options, you can use the pattern. To test it, open a new image. (To see the tiling, the image must be larger than the tile.)

To fill an image with multiple pattern tiles:

❶ Choose **Effects menu▶ Fill**. The **Fill** dialog appears.

❷ Choose **Pattern** as the art material source.

❸ Click **OK**.

Editing the Pattern tile with Check Out Pattern

If the preview isn't detailed enough, or you want to edit an existing pattern, you can open the pattern tile in its own window. By checking out the pattern as a file, you can view the pattern tile or modify it.

To edit a pattern, check out its pattern tile:

❶ In the **Pattern** palette, select the pattern you want to work with.

❷ Choose **Art Materials palette: Pattern menu▶ Check Out Pattern**.

Painter opens the selected pattern tile in its own document window.
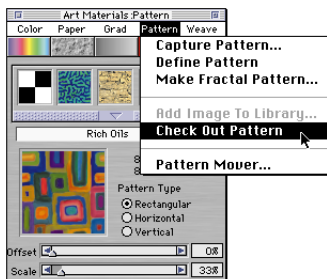
Check out a pattern to view it close-up or to modify it.

You can edit the pattern tile as you would any image. To put the modified pattern back in the palette, you'll need to use the save the pattern to the library. For more information, refer to "Adding Images to the Pattern Library" on page 144.

Creating Patterns

Painter offers three ways to create patterns:

- By defining the current image as a pattern and adding it to the pattern library.
- By creating a rectangular selection and capturing it as a pattern.
- By making a Fractal pattern and adding it to the library.

After creating a pattern tile, you'll probably want to work with it to improve the way it tiles. Refer to "Tips for Creating Seamless Tiles" on page 145.

Creating patterns can become addictive. It's a good idea to keep libraries small. Use the Patterns Mover to create new libraries and delete unwanted patterns. You can switch libraries whenever you want to use a different set of patterns. For more information about movers, refer to "Moving Items Between Libraries" on page 12.

Defining Patterns

You can give any image the pattern tile characteristics. This will help if you want to create seamless tiles.

To define a pattern:

1 Open the image file you want to work with.

2 Choose **Art Materials palette: Pattern menu▶ Define Pattern**.

3 Defining the image as a pattern gives it the wrap-around characteristics:

- A brush stroke dragged off the edge reappears on the opposite side of the image.
- With the **Grabber** tool selected, you can hold down the **Shift** key and drag the seams to the center of the image. For best results, do this at 100% scale, not when you're zoomed in.

If you want the defined pattern in your **Pattern** palette drawer, you'll need to add it to the library.

Images tagged as patterns using the Define Pattern command, and saved in RIF format, will maintain these characteristics even after they have been saved and reopened.

Adding Images to the Pattern Library

You can add any image to the current library as a pattern tile.

To add a pattern to the current library:

1 Open the image you want to add to the pattern library.

2 Choose **Art Materials palette: Pattern menu▶ Define Pattern**.

3 Choose **Art Materials palette: Pattern menu▶ Add Image to Library**. Painter prompts you to name the pattern.

4 Give it a descriptive name and click **OK**. If a pattern of that name already exists in this library, Painter will ask if it's okay to replace it. If not, click **No** and try again with a different name.

Capture Pattern

To capture a pattern:

1 Open the image that contains the area you want to use.

2 Using the **Rectangular Selection** tool, select the area you want. Remember, the edges of the selection will meet when the image is tiled, so select carefully.

To capture a pattern, make a selection and choose Capture Pattern.

3 Choose **Art Materials palette: Pattern menu▸ Capture Pattern**. The **Capture Pattern** dialog appears.

4 Make other selections as needed. You have the following options:

Rectangular Tile places the tile in a regular grid for fills. The **Bias** slider does not apply.

The Capture Pattern dialog lets you decide how much to offset pattern tiles and in which direction.

Horizontal Shift offsets the tiles in subsequent rows. The **Bias** slider controls the amount of offset.

Vertical Shift offsets the tiles in subsequent columns. The **Bias** slider controls the amount of offset.

As you try different tile arrangements and Bias settings, the Preview window shows their result. Don't worry about making it perfect, you can change the direction and **Bias** setting in the **Pattern** palette.

5 Enter a descriptive name for the pattern and click **OK**.

Painter captures the pattern and saves it to the current library. You can find your captured pattern in the **Pattern** palette. If you want to edit it, you can check it out of the library.

Tips for Creating Seamless Tiles

Patterns are created by repeating a rectangular image tile across an area. When you develop patterns, you're creating images for tiling. Ideally, the images will tile seamlessly. That is, the eye will not be able to distinguish between tiles. Painter provides several features to help you generate such pattern tiles.

Wrap-around colors lets you paint off one side of your image onto the other side.

To help in making seamless tiles, Painter gives documents defined as pattern tiles two special characteristics: wrap-around colors and wrap-around seams.

- Wrap-around colors means that a brush stroke dragged off one edge of an image appears on the other side. This makes it easy to paint seamless, self-tiling patterns.

- The wrap-around seams feature lets you move the edges of the pattern tile to the center of the image, where their tonal differences are more apparent and easier to correct.

To wrap-around the seams:

1 Open an image.

2 Choose `Art Materials palette: Pattern menu▶ Define Pattern`.

3 Click the **Grabber** tool on the **Tools** palette.

4 Hold down the **Shift** key and drag in the image. You'll see a horizontal and vertical line where the image edges meet. When the crossing lines are centered, release the mouse button.

To create a seamless tile, you'll need to edit the image to get rid of the edge lines. Several techniques are possible, depending on the type of image.

- The **Straight Cloner** brush set to clone from somewhere in this image is an excellent choice for preserving detailed imagery. To set the cloning source in this image, hold down the **Control/Shift** key and click on the point you want to clone from. Release the keys. Now click on the point you want to clone to. Further brush strokes maintain this clone source-destination relationship.

- You might paint out the lines using any color brush or smear across them with a **Water** or **Drip** brush.
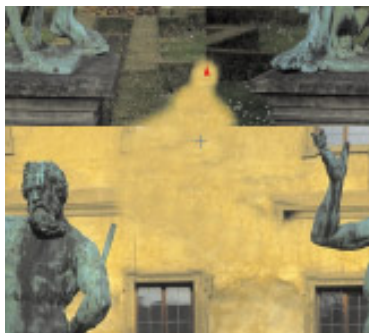
Wrap-around seams lets you move the pattern tile edges to the middle so you can edit them.

- Floating a copy of a selection and moving it over the line is another good choice. Sometimes feathering the floater and reducing its opacity can help produce a clean transition. You'll probably want to hide the selection marquee while you work. Drop the floater when you're satisfied.

Make Fractal Pattern

Make Fractal Pattern is a pattern generator that creates interesting landscapes. These topographic patterns can be filled with color and embossed with a paper texture.

To use the Make Fractal Pattern command:

1 Choose `Art Materials palette: Pattern menu▶ Make Fractal Pattern`. The **Make Fractal Pattern** dialog appears.
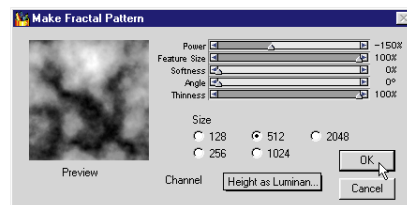
Make Fractal Pattern is a pattern generator.

2 Select your options as described in the following paragraphs. Any changes you make appear in the dialog Preview window.

3 When you are satisfied with your selections, click **OK**.

Wait a moment while Painter creates your new pattern file. When Painter is finished, your pattern file will be displayed in its own window.

Sizing the Tile

The **Size** describes the exact size of the tile you are creating. If you have a lot of memory, you can make a larger file with a higher resolution.

Depending on the amount of memory you have available to Painter, some of the size options may be unavailable.

Make Fractal Pattern Sliders

The sliders within the **Make Fractal Pattern** dialog affect the look of the pattern.

The Power Slider

The **Power** slider controls the intricacy of the pattern's definition, as if you were "zooming" in and out on a textured surface with a microscope. Move the **Power** slider to the right to zoom out and you will see many, smaller patterns. Move the **Power** slider to the left to zoom in and you will see few, larger patterns.
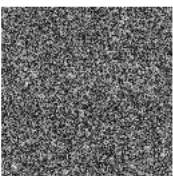
The Power slider determines the degree of detail.

The Feature Size Slider

The **Feature Size** slider defines the number of prominent features within the tile. Move the slider to the left to increase the number of repetitions per tile.
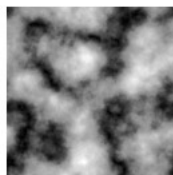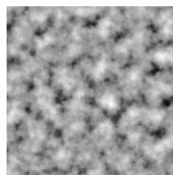
The Feature Size slider determines the number of repetitions.

The Softness Slider

The **Softness** slider adjusts the softness of the edges of the pattern.

The Angle Slider

The **Angle** slider changes the direction from which you view the fractal.

The Thinness Slider

The **Thinness** slider controls directional tendencies of the fractal pattern. Reducing thinness introduces linearity.

Low Thinness settings show the fractal as streaks. Use the Angle slider to change the direction of streaking.

Channel Options

Painter uses four channels to store graphic information: Red, Green, Blue, and Alpha (or Mask). Information other than color values can be placed in these channels as well. The channel options allow you to visualize this information in new and different ways.

Height as Luminance

Height as Luminance displays pseudo-height information as luminance.

Images generated with this option are useful in conjunction with the **Apply Surface Texture** feature. White areas are represented as peaks, and dark areas become depressions.

You can also create interesting patterns by choosing a colorful gradation and using the **Art Materials palette: Grad menu▸ Express in Image** command.

Gradient Bearing

Gradient Bearing uses the Red channel to display the bearing of the down angle of a height field.

Surface Normal

Surface Normal uses the Green and Blue channels to represent the X and Y components of the surface normal (angle perpendicular to the surface at a given point) of the height field (Green=X, Blue=Y).

These two latter options for viewing a fractal texture are offered for purely aesthetic reasons. One way to take advantage of them is to create color variations of the texture with the **Adjust Colors** feature. Other Effects can lead quite a ways from the original image.

To colorize a fractal pattern, choose an appropriate gradation and use the Express in Image feature.

Converting a Pattern to a Paper Texture

Fractal Patterns you create make great paper textures.

To convert a fractal pattern to a texture:

1 Check out the pattern to display it in an image window.

2 The luminance and contrast are all that matters. You might want to adjust the contrast and brightness.

3 When you're satisfied with the tonal balance, choose **Select menu▸ All**.

4 Choose **Art Materials palette: Paper menu▸ Capture Paper**. The **Save Paper** dialog appears.

5 Name the Paper and click **OK**.

Using Weaves: The Weave Palette

The **Weave** palette is, in effect, a virtual loom you can use to create weaves to use as fill patterns.

Two libraries of weaves are included with Painter. You can modify a weave by changing its fiber type, the scaling and

thickness of its threads, or its color. You can also create and save new weaves of your own.

Click the **Weave** icon on the **Art Materials** palette to display the **Art Materials: Weave palette**. Click the palette push bar to display additional weaves stored inside the drawer. Click the grow box to expand the palette.
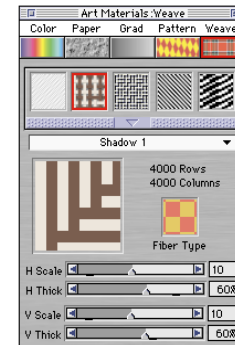
Click on the Weave icon to display the Weave palette.

Below the drawer are controls that let you preview a selected weaving, choose its fiber type, change colors, vary the scale of the weave and the thickness of its threads, and open the advanced editing palette.

Changing Weave Fiber Type

Painter can display a weave as two-dimensional or show the interwoven threads three-dimensionally, complete with shadows.
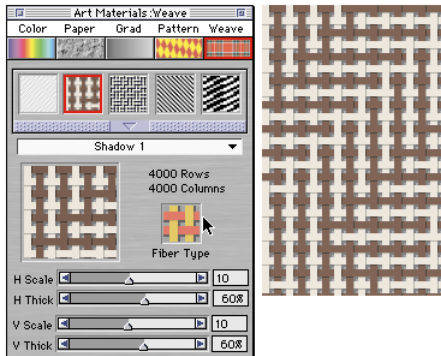
The weave can appear differently when displayed as a three-dimensional fiber type.

On the **Art Materials: Weave palette**, click the **Fiber Type** icon. The button changes to show either a two-dimensional or three-dimensional weave.

Depending on which weave is selected, you may or may not see a change in the Preview window. For different two- and three-dimensional effects, you can adjust the scaling and thickness sliders at the bottom of the **Weave** palette.

Adjusting Scaling and Thickness

The four sliders at the bottom of the **Weave** palette control the thickness of threads and the spacing between them. The top two sliders control horizontal dimensions; the bottom two control vertical dimensions. By adjusting these sliders, you can create a wide variety of weaves with any one of the patterns supplied.

1 Select the weave you want to adjust. Its image appears in the Preview window.

2 Click **Fiber Type** until the button shows a three-dimensional weave. For most weaves, you won't see a change in the Preview window yet. In order to see a change, you have to enlarge the weave by increasing its scale and reducing its thickness.

3 Adjust the horizontal and vertical scale sliders. You still might not see a change in the Preview window until you also adjust the thickness sliders.

4 Adjust the horizontal and vertical thickness sliders.

The thickness sliders have no effect when the two-dimensional fiber type is selected.

Editing Weave Colors

Each weave uses its own color set. You can display the color set used for a weave, change the colors in the set, and apply them to the weave. Remember that you can tear off palettes to see more than one at a time.

1 Select the weave in the palette and close the drawer.

2 Choose **Art Materials palette: Weave menu▶ Get Color Set**. The color set for the selected weave appears.

1 Select a new color from the **Art Materials: Color palette**.

2 Hold down the **Option**/**Alt** key and click the color chip on the weave color set (**Weave menu▶ Get Color Set**) that you want to replace. The new color replaces the old one.

3 Choose **Art Materials palette: Weave menu▶ Put Color Set**. The Preview window shows the weave with the new colors. If you fill an image with the weave pattern, now Painter uses the new color set.

To change the color patterns within a weave, you must work in the **Edit Weave** dialog.

Saving Weave Changes

After altering the scaling and thickness or color of a weave, you can save your changes as a new weave pattern.

To save weave changes:

1 Choose **Art Materials palette: Weave menu▸ Save Weave**. A dialog appears asking you to name the new weave.

2 Type a name for the weave and click **OK**. If you don't type a new name, Painter replaces the existing weave with the changed weave. The new weave pattern appears in the current weaves library.

Advanced Weaving

Painter lets you create woven fabrics of virtually any description. You can create fabrics for wall papers, carpets, clothes and furniture.

Choose **Art Materials palette: Weave menu▸ Edit Weave**. The **Edit Weave** dialog appear. This dialog contains the controls for drafting a weave on Painter's 8-harness, 8-treadle loom.

The loom uses Fractal Design's own weaving language. The **Edit Weave** dialog and Painter's weaving language are

The Edit Weave dialog allows you to specify how you want your weave designed.

explained in the **Weaving PDF file** in the Documentation folder on the Painter CD-ROM.

Filling Techniques

Filling an Area

To fill an area with color, gradations, pattern or a weaving, use the **Effects menu▸ Fill** command or the **Paint Bucket** tool.

To use the Fill command:

1 Select part of your image. Refer to .

2 Choose **Effects menu▸ Fill**. You may also press **Command-F/Ctrl+F**. The **Fill** dialog appears.

3 Select what you want to fill with—the current color, gradation, clone source/ pattern, or weaving.
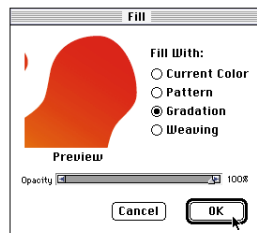
Use the Fill command to fill a selection.

If no **Clone Source** file is selected, Painter uses the current Pattern.

4 Adjust fill opacity if you like.

5 Click **OK**. Painter fills the selection.

You can also fill a user mask. Just select the mask in the Mask List before choosing **Effects menu▸ Fill**.

To fill with the Paint Bucket:

1 Select the **Paint Bucket** tool from the **Tools** palette.

2 Make sure the **Controls palette**: **Paint Bucket tool** is visible. You need it to set your **Paint Bucket** controls.
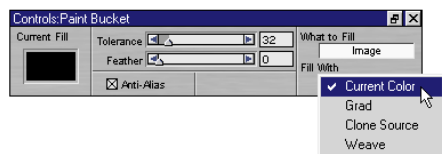
The Controls palette: Paint Bucket tool lets you choose what to fill and what to fill it with.

3 Use the **What to Fill** pop-up to choose the type of fill you want.

Image fills the canvas selection based on where you click and the current Tolerance and Feather settings.

Note: If you click outside the selection, Painter keeps the fill out of the selection.

Cartoon Cel fills the interior of areas whose bounded by lines in the selection mask. For more information about Cartoon Cel fills, refer to "Using the Cartoon Cel Fill Method" on page 152.

4 Use the **Fill With** pop-up to choose the material you want in the fill. The **Current Fill** preview at the left of the **Controls** palette shows the selected fill material.

Current Color Uses the selected color.

Grad uses the selected gradation.

Clone Source uses the current clone source image. If you haven't defined a clone source, Painter uses the current Pattern. For more information, refer to "Filling an Area with Warped Cloning" on page 92

Weave uses the selected weave.

What about filling with Paper? The Paper is a texture. It has no color by itself. However you can get texture into the image with various image effects. Use **Effects menu▶ Surface Control▶ Express Texture** for pure texture. You can also try other Surface Control effects that let you use Paper as the control medium.

5 Use the **Art Materials** palette to choose the specific material you want.

6 If you are doing an Image fill, adjust the Controls palette sliders for **Tolerance** and **Color Feather** and the setting of the **Anti-alias** option. (These settings do not apply to **Cartoon Cel** filling.)

Tolerance sets the amount of variance allowed from the color of the pixel you click on. With **Tolerance** set low, the **Paint Bucket** fills only contiguous pixels that are very close to the color of the pixel you click on. With **Tolerance** high, the **Paint Bucket** fills a greater range of colors.

Color Feather controls the fill opacity for pixels outside the **Tolerance** range. With **Color Feather** low, pixels with neighboring colors receive partial fill. Increasing the **Color Feather** "expands the neighborhood." (Typically, Tolerance is set low when **Color Feather** is high.) The more distant a pixel's color is, the less opaque the fill.

Anti-alias creates intermediate fill values on the boundaries. This gives soft edges to the fill. (Anti-aliasing is desirable when Color Feather is zero or extremely low.)

7 Click in the area of the image you want to fill.

If the result is not what you want, undo the fill, change the settings and try again.

Leaky Line Work

In complex drawings, the lines don't always meet. This creates a leak that can send Cartoon Cel or contiguous pixel fills into areas where you don't want them— sometimes even through the whole image.

To limit leakage:

1 With **Cartoon Cel** or **Image** selected on the **Controls palette**: **Paint Bucket tool**, click within the image section you wish to fill.

2 Without releasing the mouse or stylus, drag a rectangle that is a bit larger than the area you are filling.

3 Let go. If there is no leak, only the area within the black lines will be filled. If there is a leak, the fill will go outside the area, but not beyond the constraints of your rectangle.

Sometimes you can't tell if there's a leak just by looking at your image. But if you click in a small area and see the prompt, "Now Looking for Extent of Fill," there probably is a leak and Painter is preparing to fill a bigger area than you had in mind. To abort the fill, press **Command-./Ctrl+.** or choose **Edit menu▸ Undo**, press **Command-Z/Ctrl+Z** if you don't catch it.

Lock-Out Color

The Lock-Out Color feature protects areas of a given color from accidental filling. The Lock-Out Color sets a color that *will not accept filling* when clicked on with the Paint Bucket. Black is the default.

This feature applies when filling the Image—not Cartoon Cels.

To change the Lock-Out Color:

1 In the **Color** palette, choose the color you want protected.

2 Double-click the **Paint Bucket** tool icon in the **Tools** palette. The **Mask Threshold** dialog appears.

3 Click **Set**. The **Lock out color** color chip updates to the new color.

4 Click **OK** to close the dialog.

Using the Cartoon Cel Fill Method

The Cartoon Cel fill method is especially good for producing solid fills of regions bounded by anti-aliased lines. The Cartoon Cel fill method works in conjunction with the selection to fill the regions completely and without damaging the lines.

Cartoon animators paint the lines first, then fill them by painting on the back of the cel.

After you've drawn your lines, the Cartoon Cel Fill method is a three-step process:

- Copy the lines into the selection.

- Set the Mask Threshold for the Paint Bucket.

- Use the Cartoon Cel fill method to click in and fill each region.

To copy the lines to the selection:

1 Choose **Select menu▸ Auto Select**.

2 Choose **Image Luminance** from the **Using** pop-up.

3 Click **OK**. Painter creates a selection that will protect the dark lines.

When you protect anti-aliased or non-black lines in this way, the lines in the selection mask have varying levels of transparency—depending on the pixel luminance. The **Mask Threshold** lets you compensate for the semi-transparency of the selection mask to get just the fill you want.

To set Mask Threshold for the Paint Bucket:

1 Double-click the **Paint Bucket** tool icon in the **Tools** palette. The **Mask Threshold** dialog appears.

2 Set the **Mask Threshold** slider for the softness of your lines. This slider controls how much the Cartoon Cel fill respects the mask. At zero, the fill will overrun the mask boundaries. Higher threshold values force the fill to respect the boundaries.

The appropriate threshold setting depends on the softness of your lines. You'll have to experiment with the **Mask Threshold** slider settings until the fill is limited to the area within the line.
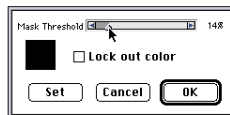
14% is a good setting for lines created with the Scratchboard tool variant.

3 Click **OK**.

To fill with the Cartoon Cel fill method:

1 Choose the **Paint Bucket** tool from the **Tools** palette.

2 On the `Controls palette`: `Paint Bucket tool`, choose **Cartoon Cel**, from the **What to Fill** pop-up.

3 Choose what you want to fill with— **Color**, **Grad**, **Clone Source** (Pattern) or **Weave**.

4 Use the **Art Materials** palette to choose the material you want.

5 Click inside a bounded region. Painter fills the area.

If the fill overruns the lines, you should increase the **Mask Threshold** setting. If the fill leaves line pixels anti-aliased to the background color, you should reduce the **Mask Threshold** setting.

The finished cartoon cell.

If you are recording your session as a script, Cartoon Cel fills are captured as well. When playing back at a different resolution, Cartoon Cel fills (and their limiting rectangles) are properly scaled. For information on recording and playing back sessions, refer to Chapter 15, "Scripts." For information on limiting rectangles, refer to "Leaky Line Work" on page 152.

Closing Leaks

When you use the Cartoon Cel fill method, you can fix leaks by saving the selection to a mask, editing it by hand, then reloading it to the selection.

To close a leak:

1 Make sure you have an active selection.

2 Choose **Select menu▶ Save Selection**. The **Save Selection** dialog appears.

3 Choose **New** from the **Save to** pop-up.

4 Click **OK**. A new mask appears in the **Objects palette: Mask List**.

5 Select the mask from the **Objects palette: Mask List**

6 Choose a brush for masking. The same brush you created the lines with would be ideal.

7 Set Black as the current primary color.

8 Paint in the mask to close the gaps that allow the Cartoon Cel fill to escape.
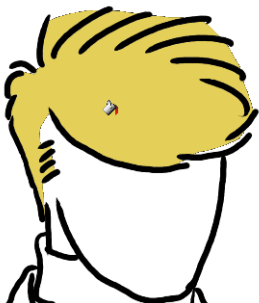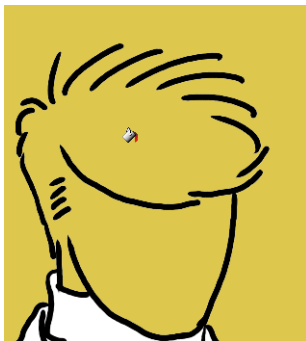
Edit the mask to close leaks. Remember to load the mask back into the selection after editing.

In typical cartoon line work, unbounded areas—for example, hair, tail feathers, and brush bristles—sometimes need to be filled. You can use the above technique to make these items closed off in the selection mask. This technique works only with Cartoon Cel.

Create selections with Selection tools

Move selections with the Selection Adjuster

Selections convert to Shapes

Use selections to create Floaters

Shapes convert to Selections

Paint inside, outside, or disregarding the Selection

A mask made visible appears in grayscale

A Selection ready to transform shows control points

Replace

Add To

Subtract From

Intersect With

Load Selections and Save Selections from the Select menu

9

Selections and Masks

Understanding Selections and Masks

The selection marks off areas of the canvas for "special treatment." The selection may protect an area from change or describe the area that you want to change. At any moment, there may be only one selection.

To extend your capabilities for working with the selection, Painter offers user masks. User masks let you store selections for later and edit them with the **Brush** tool and image effects.

You can save the selection to a user mask and create masks in other ways. Painter lets you create up to 32 user masks in a document.

User masks do not influence operations on the canvas. You can think of a user mask as a "dormant selection. "

User masks can be used as the control medium for some image effects. This is the only way that they can influence an operation on the canvas.

User masks are stored in the **Objects: Mask List palette**. When you're ready to use one of them, you can easily load it into the selection.

Having one selection, but multiple masks, is convenient and powerful. It's easy to save selections, then re-activate them later. And you can create a selection from multiple masks by adding, subtracting or intersecting them.
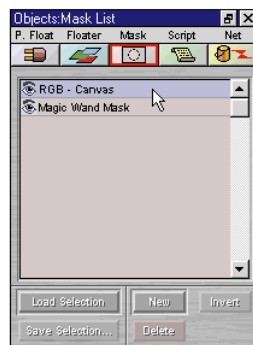
A mask is like a selection, but it has no control on the canvas. You can save up to 32 masks, loading them into the selection whenever you want any of them active.

Working with Selections in Painter

You can use any of the selection tools or commands to create a selection in the document. Each time you create a new selection, Painter replaces the old one.

If you want to, you can save a selection by choosing **Select menu▸ Save Selection**. Saved selections go to the **Mask List** palette, where you can keep up to 32 user masks.

You might want to create a selection by painting with the **Brush** tool. To do this, you'll need to work in a user mask. Create a new user mask by choosing **Objects palette**: **Mask menu▸ New Mask**. Paint in the mask to describe your selection area.

Whenever you want to use one of the selections from the Mask List, you can load it by choosing **Select menu▸ Load Selection**. Loading the selection brings it back to the canvas where it will control your painting and image effects.

Saving selections offers one more advantage. When you load a saved selection, Painter gives you the chance to use Boolean operations. You can take advantage of this feature to combine selections in powerful ways. When you load a saved selection, you can add it to the current selection, subtract it from the current selection, find the intersection of the two or replace the selection. All of these loading options are useful at one time or another.

The Selection

The selection may have one of two data types in it—a mask or paths.

- A mask-based selection is an 8-bit image. It provides 256 levels of protection to the canvas. Each pixel in the selection sets a selection value for its corresponding color pixel in the RGB image.

- Path-based selections provide only two levels of selection—what's inside the path is selected, and what's outside is not. You can move path-based selections around,

scale and rotate them with the **Selection Adjuster** tool. Path-based selections offer some other advantages you'll learn about later.

The method you use to create the selection determines its data type. Selections created with the **Lasso**, **Rectangular** and **Oval** selection tools and selections converted from **shapes** are path-based. All other selections are mask-based. However, you can generate a path-based selection from a mask-based selection with the **Select menu▸ Transform Selection** command.

How Selections are Used

You may use the selection in several ways:

- To constrain brush strokes. This works like putting a cardboard stencil over the paper you're painting on. However, because the selection mask has 256 levels of intensity, it can protect the canvas at varying strengths. Intermediate selection values allow semi-opaque brush strokes.

- To isolate an area of the canvas for applying an image effect—Adjust Colors, for example. Painter changes the colors only inside the selection. Intermediate selection values create partial intensity of the effect.

- To choose the area of the canvas that you want to Cut, Copy or Float. When floating the selection, intermediate values create semi-transparency in the floater.

- You may also apply a brush stroke along a path-based selection with **Select menu▸ Stroke Selection**.

- You may also use the selection to control display of a floater. For more information, refer to

Drawing Modes

The drawing mode determines whether the inside or outside of the selection is protected when you paint on an image. You can use the pop-up icon in the bottom left corner of the document window to change modes.

Draw Anywhere

The selection is disabled. Brush strokes are allowed anywhere on the canvas.

Click the Draw Anywhere icon to draw anywhere on the canvas

Draw Outside

The selection protects the areas it encloses or covers. Opaque areas of the selection prevent brush strokes from reaching the canvas. Clear areas of the selection allow brush strokes to go directly to the canvas.

Where the selection is shaded, a portion of the brush stroke is applied semi-transparent.

Click the Draw Outside icon to draw outside your selection.

Draw Inside

Draw Inside effectively inverts the selection. Only the selected region accepts brush strokes. Where the selection is shaded, a portion of the brush stroke is applied semi-transparent.

Click the Draw Inside icon to draw anywhere inside your selection

The "Visibility Mode" controls from earlier versions of Painter have been replaced with more flexible selection and masking controls on the **Select** menu and in the **Objects: Mask List palette: Mask menu▸**.

Creating a Selection

To select the entire image, choose **Select menu▸ All**.

You can select a portion of the image in any of several ways:

- With one of the Selection tools—**Rectangle**, **Oval** or **Lasso**.

- With the **Magic Wand** tool.

- By command—**Auto Select** or **Color Select**.

- By creating (or acquiring) a **shape** and converting it to a selection. For example, you can use the **Pen** tool to create a Bézier curve shape, then convert it to a selection.

- By loading a user mask (from the Mask List) to the selection.

You may not create a selection inside a floater. You can get around this restriction by copying the floater to a temporary document and dropping it there.

You may not create a selection in a user mask. You can get around this restriction by creating the selection on the canvas, then loading the user mask with the intersect operation.

Some files you open will already have a selection in them. For example, Fractal Design Poser, Detailer, and Ray Dream

Studio renderings save files with a mask-based selection. This makes it easy to select the rendered subject, float it and composite it with other imagery.

If you have a selection active when you save the file in RIF format, that selection will be available the next time you open the document.

The Selection Tools

You may use the **Rectangular Selection** tool, the **Oval Selection** tool or the **Lasso** tool. These tools create path-based selections.

The Rectangular and Oval Selection tools and the Lasso tool.

The Rectangular and Oval Selection Tools

To select an area using the Rectangular or Oval selection tools:

1 Choose the **Rectangular** or **Oval Selection** tool from the **Tools** palette.

The **Rectangle** or **Oval Selection** tool icon "pops up" to let you select the other version.

2 Position the cursor in the image and drag diagonally. When the selection is the size you want, let up.

You can hold down the **Shift** key (after mouse-down) to constrain the selection to a square or circle.

The **Controls** palette provides information on the size and location of the selection you create.

The Lasso Tool

To select an area using the Lasso tool:

1 Choose the **Lasso** tool from the **Tools** palette.

2 Draw freehand around the area you want.
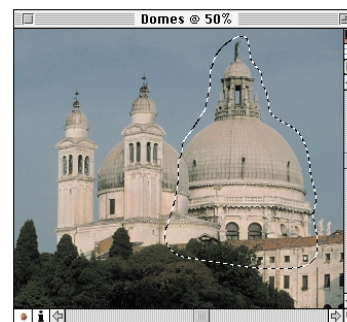
Use the Lasso tool to draw freehand selections.

Adding to and Subtracting from a Selection

Normally, using a selection tool a second time replaces the first selection path. However, using a key combination, you can add to or subtract from the current selection.

Hold down the **Shift** key (before mouse-down) to add to the selection.
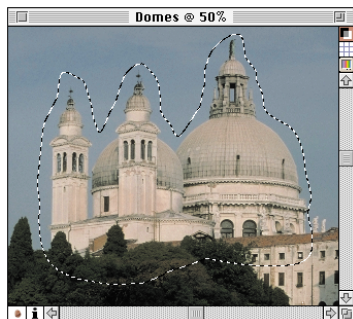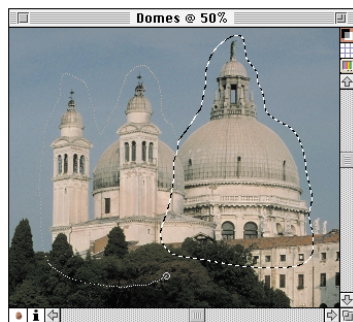
Hold down the Shift key and drag to add to the selection.

Hold down the **Command**/**Ctrl** key to subtract from a selection. The next selection path you draw "cuts out" from the current selection.
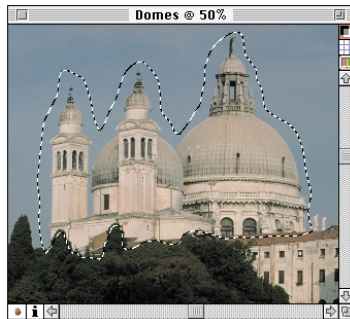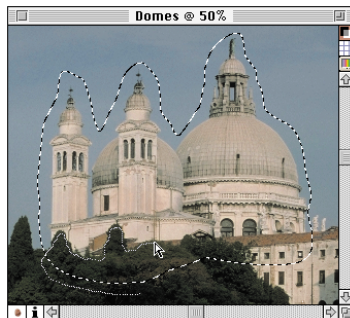
Hold down the Command/Ctrl key to subtract from a selection.

The Magic Wand

Pixels come in groups of related colors. The Magic Wand allows you to select a contiguous area based on color similarity.

To select an area using the Magic Wand tool:

1 Choose the **Magic Wand** tool from the **Tools** palette.

The Magic Wand tool.

2 The **Controls** palette lets you choose to create either a selection or a user mask. Click the radio button for your choice.

If you choose to create a user mask, you'll need to load it before using it as a selection.

3 Click or drag in the image on the central color of the region you want to select.

It might take a moment for Painter to calculate and load the selection or display the mask.

If you've chosen to create a selection, Painter displays the selection marquee.

If you've chosen to create a user mask, Painter displays the mask as a red overlay.
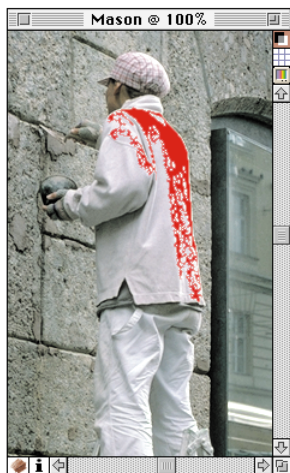
The start of a Magic Wand user mask.

4 You can hold down the **Shift** key and click or drag over neighboring colors to add to the Magic Wand selection/mask.

You can hold down the **Command/Ctrl** key and click or drag over neighboring colors to remove from the Magic Wand selection/mask.

5 If necessary, in the **Controls palette: Magic Wand tool**, adjust the sliders for **Tolerance** and Color **Feather**. Painter updates the selection automatically.

Tolerance controls the amount of variance allowed from the last color you click on.

Color **Feather** spreads the selection with soft, intermediate values.

Anti-Alias creates intermediate selection values on the boundaries. This gives soft edges to the work you do with the selection.

6 When the marquee or mask describes the selection you want, you're ready to proceed.

- If you've created a selection, you can go ahead and use it. Or, if you like, save it to a mask now.

- If you've created a mask you can edit it with the **Brush** tool or load it directly to the selection.

The default state of the **Magic Wand** selects contiguous pixels. To select non-contiguous pixels, hold the **Control-Shift**/**Ctrl+Shift** keys and click anywhere in your image. This mode is a toggle, click again to return to contiguous mode. If you want to restrict to a rectangle, press the **Control-Shift**/**Ctrl+Shift** keys and drag a bounding rectangle in your image.

The Magic Wand user mask has been extended over the coat with Shift-clicking.

Creating an Auto Selection

Auto Select creates a selection based on your choice of image characteristics. The Invert option allows you to invert the selection you create.

To generate an Auto Selection:

1 Choose **Select menu▶ Auto Select**. The **Auto Select** dialog appears.

2 Use the **Using** pop-up menu to choose an image characteristics for the selection.

Paper creates a selection using the current paper texture.

3D Brush Strokes creates a selection based on the difference between the current image and the clone source.

If no Clone Source is selected, Painter uses the current pattern. For information about clones, refer to Chapter 5, "Cloning and Tracing."

Original Selection imports the selection from the clone source document. You can use this feature to transfer a selection from one document to another or from a pattern (if no source is specified). For best results, the dimensions of the source and working document should match. You must establish a clone source for this option to be valid. For information about clones, refer to Chapter 5, "Cloning and Tracing."

Image Luminance creates a selection based on the current image's light and dark areas.

Original Luminance produces a selection in the current document based on the clone source's light and dark areas. This option lets you import an image to the selection. If no Clone Source is selected, Painter uses the current Pattern.

Current Color creates a selection of pixels of the current primary color. Enabling the **Invert** option means that everything but the current color will be selected.

You might want to use the **Dropper** tool to pick a color from the image before using the **Current Color** option.

3 Click **OK** to generate the selection.

Selecting By Color

The Color Select feature lets you create a non-contiguous selection based on a range of colors.

To generate a color-based selection:

1 Choose **Select menu▶ Color Select**. The **Color Select** dialog appears.

2 Click in the image to pick up the central color of interest.

3 Adjust the **HSV Extent** sliders to control the range of colors. The colored regions of the HSV sliders describes the selected range. You can drag the limits of the range in either direction.

4 Adjust the **HSV Feather** sliders to control the feathering at the edges of the color space extents in hue, saturation, and value, respectively. This can help soften the selection edge.

5 The Preview window shows the selected area as a red overlay on the image. Drag the in the Preview to see other parts of the document.

6 When the overlay looks the way you want it, click **OK**.

Basic Selection Commands

Turning the Selection On and Off

Choose **Select menu▶ None** to disable the current selection. This is equivalent to a "deselect" command because it renders a selection inactive and invisible without clearing it.

To retrieve the disabled selection, choose **Select menu▶ Reselect**.

Hiding and Showing the Marquee

You can control display of the selection marquee (marching ants) with **Select menu▶ Hide/Show Marquee**. The selection will be active even if the marquee is hidden, but the ants won't be visible.

Inverting the Selection

Inverting selects the opposite. For example, you have an image of a boat on the water and you've created a precise selection of the boat, you can select everything but the boat by inverting the boat selection.

If you want the selection inverted to change the control of your brush strokes, you can switch the drawing mode between **Draw**

Inside and **Draw Outside**. For more information on the drawing modes, refer to "Drawing Modes" on page 157.

To invert the selection image, choose **Select menu▶ Invert**.
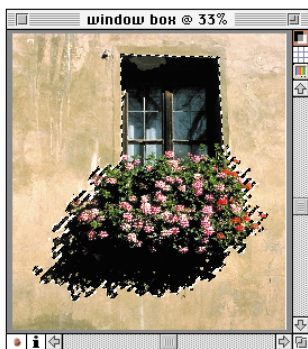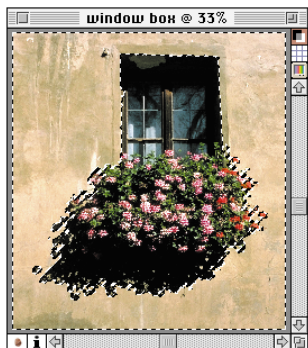
Because the stucco wall is of a single, basic color, it was easy to select it with the Magic Wand. By inverting the selection, only the window, flowers and their shadow are selected.

The selection is 8-bit, like a grayscale image. Inverting the selection mask is equivalent to the negative of a grayscale image. For example, a pixel that has 80% luminance will have 20% luminance when inverted.

Saving the Selection to a Mask

You can save the current selection to a user mask. You'd do this if you wanted to save it for later or if you wanted the additional editing control available in a mask. You can also use the current selection to modify an existing mask.

The selection must be active to save it to a mask.

To save the selection to a mask:

1 Choose **Select menu▶ Save Selection**. For convenience, this command also appears as a button on the **Objects: Mask List palette**.

The **Save Selection** dialog appears.
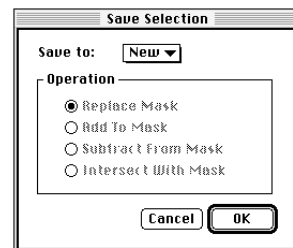
Use the Save Selection dialog to save your current selections.

2 Use the **Save To** pop-up to choose a mask to hold the saved selection.

New is the default. It creates a new mask from the current selection. The pop-up will list any other masks in the document. You might choose to put the selection into one of these.

3 If you are saving the selection to an existing mask, choose the operation you want. The Boolean operations will, in effect, edit the mask.

Replace Mask eliminates what was in the mask and replaces it with the saved selection.

Add to Mask combines the current selection with the chosen mask.

Subtract from Mask removes the current selection from the chosen mask.

Intersect with Mask determines the intersection of the selection and the chosen mask, and saves this into the mask.

4 When you've set the options you want, click **OK**.

You'll find more information on working with masks in "Working with Masks" on page 170.

Loading the Selection from a Mask

To load the selection from a mask:

1 Choose **Select menu▸ Load Selection**. For convenience, this command also appears as a button on the **Objects: Mask List palette**.

2 Use the **Load From** pop-up to choose which mask you want.

You can select the mask you want in the Mask List before displaying the **Load Selection** dialog. In this case, Painter chooses the mask in the pop-up for you.
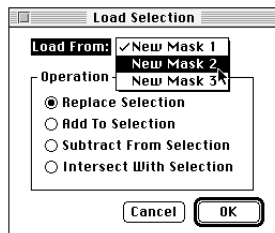
Use the Load Selection dialog to load user masks

3 Select the loading operation, you have the following options:

Replace Selection eliminates the current selection and loads the chosen mask into the selection.

Add to Selection adds the mask to the current selection.

Subtract from Selection removes the loaded mask from the current selection. In other words, the mask "cuts away" from the selection.

Intersect with Selection determines the intersection of the mask and the current selection. This intersection becomes the new selection.

4 When you've set the options you want, click **OK**.

A Practical Example of Loading from a Mask

You'll find practical uses for these loading options. For example, in the "Before the King" image, the artist created and saved selections for each area he wanted to work with separately—the collar, the helmet, the plume.

To make the work easier, some of the selections were created large—with the expectation of using the subtract and intersect operations when they are loaded from the Mask List.
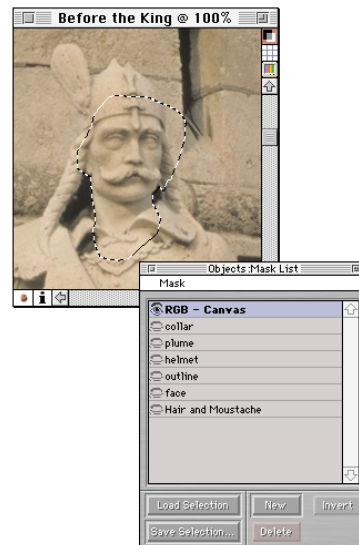
A number of selections were created and saved to the Mask List. The masks were named for easy identification. In the above graphic, the "face" selection is loaded.

Notice that the "face" selection includes some of the helmet, hair, collar and background. These extraneous regions can be easily corrected by loading some of the other masks with subtract or intersect operations.
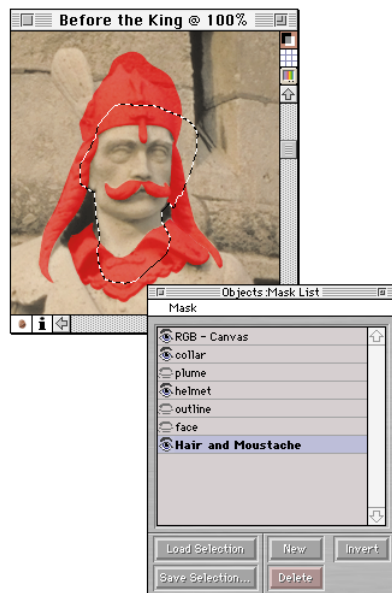
This graphic shows the "Hair and Moustache," "collar" and "helmet" masks displayed as a red overlay.

By loading the "Hair and Moustache", "collar" and "helmet" masks *using the subtract operation*, the "face" selection becomes much more accurate.
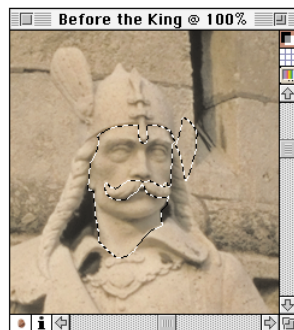
The selection after the "Hair and Moustache", "collar" and "helmet" were subtracted.

One of the major advantages to selecting with subtract operations is that the borders between selections are perfect. There are no gaps and no pixels are included in both selections.

The only problem now is the selected scrap of background to the right of the King's temple. The "outline" mask takes care of this nicely.
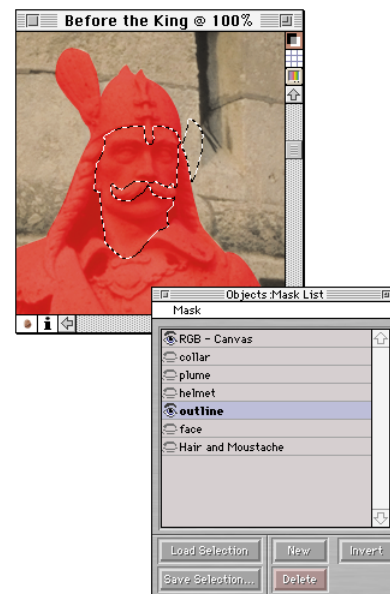
The scrap is outside of the "outline" mask, which makes it easy to discard.

By loading the "outline" mask *using the intersect operation*, only regions where the "outline" mask and the old selection overlap are placed in the new selection.
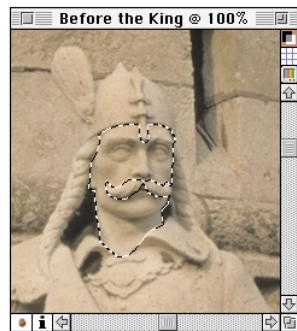
After loading the "outline" mask with the intersect operation, the selection of the face is precise.

Now, with a perfect selection of the face, it's easy to control your brush strokes and constrain effects, like Adjust Color.

It's a good idea to save the calculated selection. You wouldn't want to go through those operations again.

Converting Selections to and from Shapes

Shape to Selection conversion is a two-way street. You can create a selection, then convert it to a shape (Selection to Shape). You'll be able to use the Shape Edit tools to adjust the path and define exactly the

The artist used these masking techniques extensively in developing this image.

selection area you want. Then you can convert the shape back to a selection (Shape to Selection).

When the selection is an 8-bit mask, Painter must determine outline paths for the selected area. The marquee is an approximation of the mask data. Painter uses these paths for the shape outlines. When the selection has a lot of intermediate grayscale values, the result might not be what you want. Save the selection to a mask, then use Brightness/Contrast to increase definition. Load the mask to the selection, and now convert it to a shape.

Creating a Selection from a Shape

In some cases, the path you want for a selection might exist as a shape. This will be the case for text or if you've been using the shape tools to edit the selection path. Before you finish editing, make sure the shape path is closed.

Converting a shape creates a path-based selection.

To convert a shape to a selection:

1 Select the shape you want to convert. You can either click on it with the **Adjuster** tool or select it in the Floater List. The shape must be closed.

2 Choose **Shapes menu▶ Convert to Selection**.

The outline of the shape creates the selection path. Everything within the outline is 100% selected.

Converting a Selection to a Shape

To convert the current selection to a shape:

Choose **Select menu▶ Convert to Shape**.

Painter creates the shape, giving it the default attributes. For more information, refer to Chapter 10, "Shapes."

Manipulating Selections

Path-based selections support transformations. You can convert a mask selection to a path selection if you want to apply transformations to it.

To convert a mask selection to a path selection:

1 Make sure the mask you want to convert is in the active selection.

2 Choose **Select menu▶ Transform Selection**.

Painter generates paths from the mask. You can now use the **Selection Adjuster** tool for transformations.

Using the Selection Adjuster Tool

The **Selection Adjuster** tool lets you move selections. You can also scale, rotate and slant path-based selections.

The **Selection Adjuster** tool shares a space on the **Tools** palette with the **Adjuster** and **Direct Selection** tool (which is for shapes).

The Selection Adjuster tool.

To move the selection:

Drag inside the selection with the **Selection Adjuster** tool.
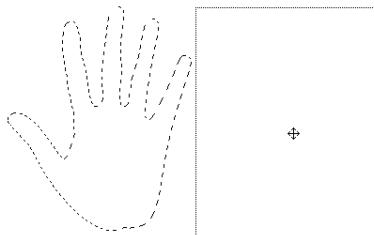
Drag inside a selection with the Selection Adjuster to move it.

You can move a mask-based selection with the **Selection Adjuster** tool. However, the portion that moves outside the document area gets cut off.

To move a path selection with the Arrow keys:

1 Using the **Selection Adjuster** tool, click inside the selection once.

Square handles should appear on the corners and sides of the selection bounding rectangle.

2 Press the **Arrow** keys to nudge the selection path in the direction you want to move it.

To scale a path selection:

1 Using the **Selection Adjuster** tool, click inside the selection once.

Square handles appear on the corners and sides of the selection bounding rectangle.

2 Drag a handle to scale the selection.

- Drag a corner handle to scale in two dimensions. Hold down the **Shift** key to constrain the aspect ratio.

- Drag a side, top or bottom handle to scale in one dimension.
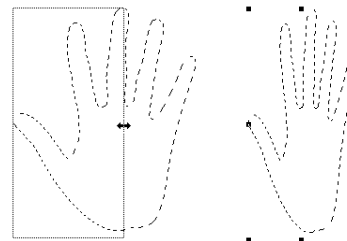
Drag a side handle to scale horizontally.

If the handles don't appear when you click on the selection with the **Selection Adjuster** tool, the selection might be mask-based. Use **Select menu▶ Transform Selection** to make the selection path-based.

To rotate a path selection:

1 Using the **Selection Adjuster** tool, click inside the selection once.

2 Hold down the **Command**/**Ctrl** key and drag a corner handle.
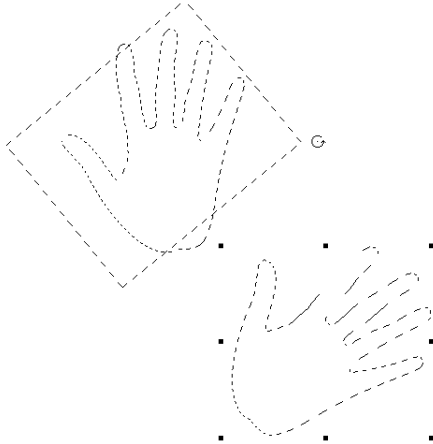
Rotate a selection.

To slant (skew) a path selection:

1 Using the **Selection Adjuster** tool, click inside the selection once.

2 Hold down the **Command**/**Ctrl** key and drag a side handle.
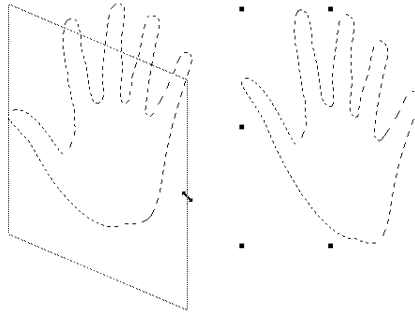
Slant a selection.

Modifying the Selection

The **Select** menu offers feathering and several commands for modifying a selection. Modify commands are available only for path-based selections.

Feathering a Selection

You can feather the selection to soften the transitions between selected and un-selected areas.

To feather a selection:

1 Choose **Select menu▸ Feather**. The **Feather Selection** dialog appears.

2 Enter the number of pixels you want to feather your selection.

3 Click **OK**.

With marching ants, feathering is difficult to judge. You can see the effect of feathering much better if you save the selection to a user mask and view the mask.

If the effect is not what you intended, Undo it and try again with a different feathering radius.

Widening a Selection

Widen increases the selection path by a set number of pixels.

To widen a selection:

1 Choose **Select menu▸ Modify ▸ Widen**. The **Widen Selection** dialog appears.

2 Enter the number of pixels to widen by.

3 Click **OK**.

All Modify commands require a path-based selection.

Contracting a Selection

Contract shrinks the selection path by a set number of pixels.

To contract a selection:

1 Choose **Select menu▸ Modify ▸ Contract**. The **Contract Selection** dialog appears.

2 Enter the number of pixels to shrink by.

3 Click **OK**.

Smoothing a Selection

Smooth removes sharp edges, rounds corners, and straightens out wiggles in the path of the marching ants.

To smooth a selection:

Choose **Select menu▸ Modify▸ Smooth**. You'll probably need to choose the command several times before the path is as smooth as you want it.

The selection—before and after smoothing.

Creating a Border Selection

Border creates a selection along the path.

To create a selection border:

1 Choose **Select menu▸ Modify▸ Border**. The **Border Selection** dialog appears.

2 Enter the number of pixels for the width of the border swathe.

3 Click **OK**.
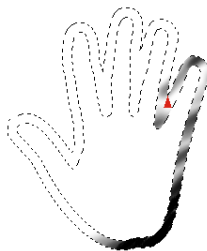
A border selection. For clarity, some Air Brush strokes were painted into the selection.

Stroking a Selection with the Brush

In some cases, you might want to border a selected region with a brush stroke. Painter will do this for you, stroking the current brush along the selection path. This is an excellent way to get brush strokes to follow specific contours.

To use Stroke Selection:

1 Set up the selection paths you want to stroke. Only path-based selections can be stroked.

2 Choose the brush variant, color, and paper texture you want to use. This feature uses the current brush variant.

3 Choose the Drawing Mode you want to use. If you want the brush dab to straddle the selection path, choose the Draw Anywhere mode.

4 Choose **Select menu▸ Stroke Selection**. Painter applies a brush stroke to the canvas, following the selection path.

You may repeat the command to build strokes. Change brushes if you like. You might want to move the path a few pixels and choose the command again.
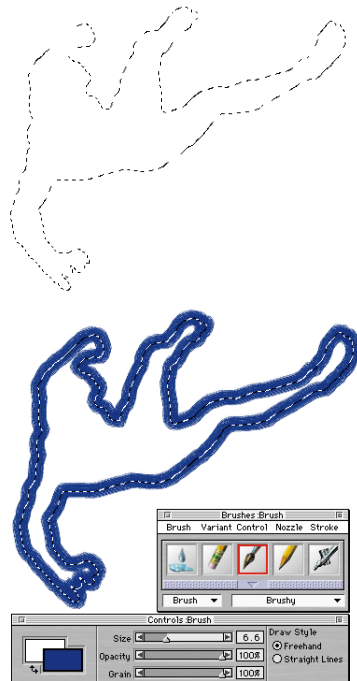
Applying a brush stroke to a selection.

The Selections Portfolio: Storing and Retrieving Selection Paths

If you create a selection path that you'll use again, you can store it in the **Selections Portfolio** library. Painter provides a library of sample selection paths, but you can create as many additional libraries as you need.

To store a selection path in the current library:

1 Create the selection you want to store.

2 Choose **Select menu▸ Selection Portfolio**. The **Selections Portfolio** palette appears.

The Selections Portfolio supports libraries. For information on working with libraries, refer to "Libraries and Movers" on page 10.

3 Choose the **Selection Adjuster** tool.

4 Make sure the selection is path-based. If **Select menu▸ Transform Selection** is grayed out on the menu, the selection is path-based.

5 Drag the selection into the **Selections Portfolio** palette. The **Save Selection** dialog appears.

6 Type a name for the selection path.

7 Click **OK**.
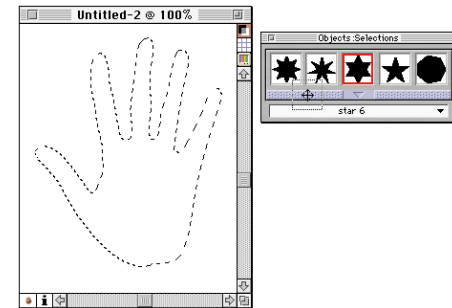
Drag a selection to the portfolio to store it for another day.

To use a selection from the portfolio:

1 Open the **Selections Portfolio** palette and locate the selection path you want to use.

2 Drag the icon from the palette to the image window.

Note: You may also double-click the icon. This will place the selection in its original position (when it was dragged into the portfolio) provided the file sizes are the same.

Dragging a selection from the Selections Portfolio will replace the current active selection.

Working with Masks

Like the selection, a user mask is an 8-bit image that corresponds pixel-for-pixel with the canvas RGB image.

The primary function for a user mask is to store a selection you might want later. You can save multiple selections in masks. The masks remain inactive (for canvas control) until you load them to the selection.

Note: Although user masks are inactive on the canvas, they may be used to control certain image effects.

Painter allows you to create up to 32 user masks. The masks are listed in the **Objects: Mask List palette**, where you can select and control them.

You can edit a mask in a number of ways, then load it as the selection.

Floaters use a mask to define their visibility. For information on floater visibility masks, refer to "Floater Visibility Mask" on page 215.

Your stored masks remain part of the file when you save in RIF or Photoshop format. No matter how many sessions you work on a project, the saved masks will be ready any time you want them.

Creating a Mask

Masks can be created in the following ways:

- You can create a mask by saving the current selection.

  This is probably what you'll do most often—create a selection, then choose **Select menu▸ Save Selection** to put it into a mask. For complete information, refer to "Saving the Selection to a Mask" on page 162.

- You can create a new, blank mask by choosing **Objects palette: Mask menu▸ New Mask**.

  With a blank mask, you can use any of the editing techniques, described later, to develop imagery in it.

- You can create a new mask by command—**Objects palette: Mask menu▸ Auto Mask** or **Color Mask**.

- You can also create a new mask by copying an existing mask with **Object palette: Mask menu▸ Copy Mask**.

Creating an Auto Mask

Auto Mask creates a mask based on your choice of image characteristics. The **Invert Mask** option allows you to invert the mask you create.

Note: Auto Select creates a selection. **Auto Mask** creates a user mask. Otherwise, the commands function identically.

To generate an Auto Mask:

1 Select the destination for the mask.

- If you want to generate a new mask, you should select **RGB** in the **Mask List**.

- If you want to replace an existing mask, you should select that mask in the **Mask List**.

2 Choose **Objects palette: Mask menu▸ Auto Mask**. The **Auto Mask** dialog appears.

3 Use the pop-up menu to choose which image characteristics to base the mask on—**Paper**, **3D Brush Strokes**, **Original Selection**, **Image Luminance**, **Original Luminance** or **Current Color**. These options are covered in "Creating an Auto Selection" on page 160.

4 When you've chosen an option, click **OK**. Painter generates the mask.
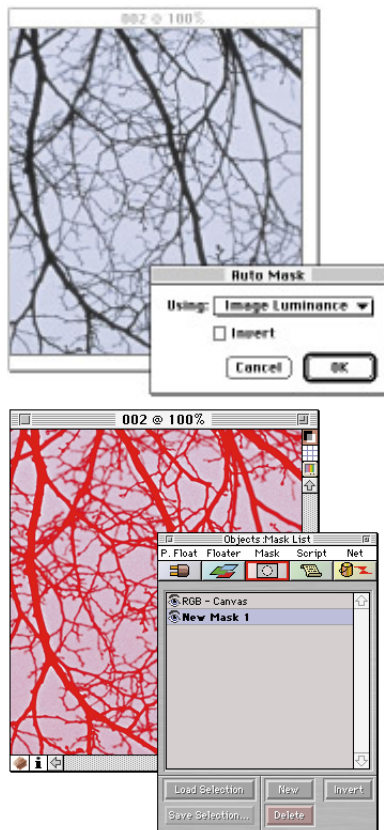
An image and the mask created with Auto Mask: Image Luminance.

Creating a Color Mask

The **Color Mask** feature lets you create a non-contiguous mask area based on a range of colors.

Note: Color Select creates a selection. **Color Mask** creates a user mask. Otherwise, the commands function identically.

To generate a color-based mask:

1 Select the destination for the mask.

- If you want to generate a new mask, you should select **RGB** in the **Mask List**.

- If you want to replace an existing mask, you should select that mask in the **Mask List**.

2 Choose **Objects palette: Mask menu▸ Color Mask**. The **Color Mask** dialog appears.

3 Click in the image to pick up the central color of interest.

4 Adjust the **HSV Extent** sliders to control the range of colors. The colored regions of the HSV sliders describes the selected range. You can drag the limits of the range in either direction.

5 Adjust the **HSV Feather** sliders to control the feathering at the edges of the color space extents in hue, saturation, and value, respectively. This can help soften the mask edge.

6 The Preview window shows the masked area as a red overlay on the image. Drag in the Preview to see other parts of the document.

7 When the overlay looks the way you want it, click **OK**. Painter generates a mask of the selected color range.

Bringing in Masks from Other Programs

RGB Photoshop documents saved in the Photoshop format can also be opened in Painter. Anything in the alpha channels (#4 and above) will appear as masks in Painter.

Conversely, when you save your Painter file in Photoshop format, the saved masks will go into channels #4 and above.

Controlling Masks in the Mask List Palette

The **Mask List** palette lists the RGB color image and each user mask you've saved. The **Mask List** palette will also list the visibility mask of a selected floater. For information on working with a floater mask, refer to "Image Floaters" on page 211.

To display the **Mask List** palette, open the **Objects** palette and click the **Mask** button.

The Mask List palette lets you select and control masks in the document.

Viewing and Hiding User Masks

The **Eye** icon for each listing in the Mask List controls its display. When the **Eye** is open, that item is displayed in the document window. When the **Eye** is shut, it's hidden (not displayed).

Painter offers two ways to view a user mask—as a colored overlay on the image or in grayscale.

- Click the **Eye** of a user mask to see that mask as a colored overlay on the image. In this mode, the RGB layer will always be displayed.

- Click a hidden user mask's name to see the mask in grayscale mode. In this mode, the RGB layer is hidden.

The mask is a red overlay on the RGB image. Both the user mask and canvas-RGB Eyes are open.

Note: In these graphics, the Mask List palette has been torn off the Objects palette.
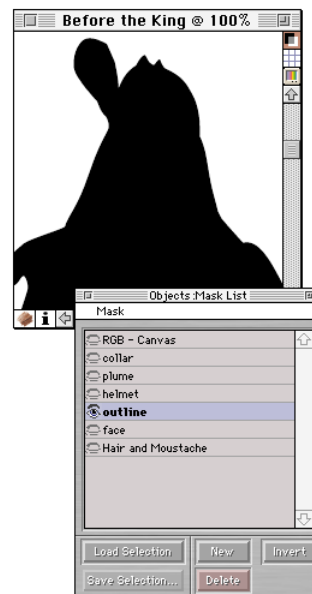
The mask appears in grayscale. The RGB image is hidden. The user mask Eye is open, and the Canvas-RGB Eye is shut.

Selecting a Mask for Editing

If you want to edit a particular mask, you must select it.

To select a user mask, click the listing of the mask you want to work with. The selected mask is highlighted in the **Mask List**.

Editing techniques are discussed in "Editing in a Mask" on page 175.

When you want to work on the RGB image again, select its listing.

The "Hair and Moustache" mask is displayed and selected.

You may display the RGB image and more than one mask, but your editing will apply only to the one item highlighted in the **Mask List** palette—RGB or a mask.

Setting Mask Attributes

Each mask has a set of display attributes that can make it easier to use and help you distinguish it from the other masks.

To set mask attributes:

1 In the **Mask List** palette, select the mask you want to work with.

2 Choose `Objects palette: Mask menu▶ Mask Attributes`. The **Mask Attributes** dialog appears.

You may also double-click the mask listing to select it and open its **Attributes** dialog.
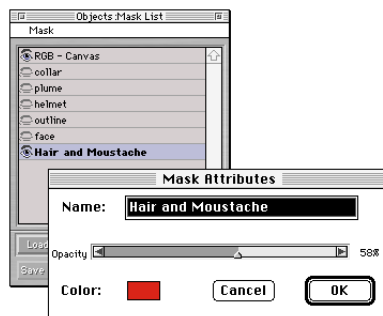
Use the Mask Attributes dialog to set mask attributes.

3 Type a **name** for the mask. Naming the mask can make it easier to work with, especially if you have several in the

document. You'll be able to choose the mask you want immediately if you've given it a descriptive name.

4 Drag the slider **Opacity** slider to set the mask display strength. The display opacity does not change the selection value (when the mask is loaded). It only affects how the mask appears as you work on it. Sometimes, you might want the mask at its full intensity. Other times, you might want the mask semi-transparent so you can follow the underlying RGB imagery as you edit the mask.

5 Double-click the **Color** color chip to select the display color. Use the color picker to select the color you want. If you want to see the mask as a grayscale image, choose black.

A mask is easiest to use as an overlay when its color is a strong contrast with the predominant hue of the RGB image.You might want to use a different color for each of several masks.

6 Click **OK**.

The color of mask display has no influence on the function of the mask. All masks are inherently 8-bit. The pixel values in the 0 to 255 range is the only thing that matters.

Basic Mask Commands

Creating a New Mask

You can create a new, blank mask then edit it to develop imagery. Painting with the **Brush** tool and other editing techniques are covered "Editing in a Mask" on page 175.

To create a new, blank mask:

Choose **Objects palette: Mask menu▶ New Mask**.

After creating the new mask, you can edit it.

Feathering a Mask

Feathering softens transitions between light and dark areas of the mask.

To feather a mask:

1 In the **Mask List** palette, select the mask you want to work with.

2 Choose **Objects palette: Mask menu▶ Feather Mask**. The **Feather Mask** dialog appears.

3 Enter the number of pixels you want to feather the mask.

4 Click **OK**.

A mask image—before and after feathering.

Copying a Mask

You can create a new mask by copying an existing mask.

To copy a mask:

1 In the **Mask List** palette, select the mask you want to copy.

2 Choose **Objects palette: Mask menu▶ Copy Mask**. The **Copy Mask** dialog appears.

3 Choose a copy destination from the **Copy mask to** pop-up.

New is the default destination. Other existing masks will also be listed in the pop-up. Copying to an existing mask replaces that mask.

4 Click **OK**.

You can use the **Copy Mask** command to copy a user mask to a floater's visibility mask: Align the floater with the portion of the user mask you want. Select the floater. In the Mask List, select the source user mask. Choose **Objects palette: Mask menu▶ Copy Mask**. In the pop-up, select the Floater's mask as the destination. Painter copies the portion of the user mask that coincides with the floater rectangle into the floater visibility mask.

Deleting a Mask

If you've finished working with a particular mask, and you want to clean house by tossing it out; you can delete the mask.

To delete a mask:

Select the mask you want to delete. Choose **Objects palette: Mask menu▶ Delete Mask**. For convenience, this command also appears on the **Mask List** palette as a button.

Clearing a Mask

If you want to clean off a mask so you can start fresh, use the Clear command.

To clear a mask:

Select the mask you want to clear. Choose **Objects palette: Mask menu▶ Clear**. You may also press **Command-Shift-C**/ **Ctrl+Shift+C**.

Inverting a Mask

The mask is a grayscale image. By inverting it, you can make dark pixels light and vice versa.

To invert a mask:

Select the mask you want to invert. Choose `Objects palette: Mask menu▶ Invert Mask`.
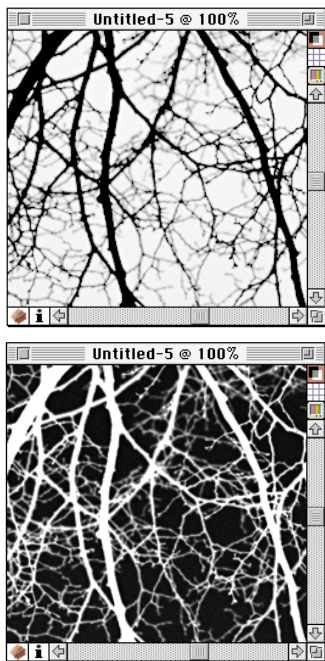
A mask—before and after inversion.

Editing in a Mask

A mask allows certain types of editing that are not possible in a selection.

- You can paint in the mask with the **Brush** tool.

- You can use the `Effects menu▶ Fill` command or the **Paint Bucket** tool to fill the mask with Art Materials.

- You can also apply image Effects. The `Effects menu▶ Focus▶ Soften` and `Tonal Control▶ Brightness/Contrast` are often useful. A number of other effects are possible. For special effects, try **Express Texture** or use **Glass Distortion**.

Note: Because you're applying the effect in an 8-bit mask, some effects may not be appropriate or allowed at all.

Note: You cannot create a selection within the mask. You can, however, take advantage of Boolean operations to achieve the same result in only a few steps.

Painter 5 doesn't have the "Edit Mask Mode" used in Painter 4. You can get the exact same functionality by selecting and displaying the mask and hiding the RGB image.

To paint in the mask with a brush:

1 In the **Mask List**, display the mask you want to work in. Make sure the mask you want is selected in the **Mask List**. palette

Your brush strokes will go to the item highlighted in the **Mask List** palette—regardless of whether or not it's visible.

2 Choose the **Brush** tool and any brush variant. The **Pen** and **Airbrush** variants make good choices.

3 In the **Color** palette, choose a value for the mask paint. Black adds to the mask. White erases from it.

When you paint in the mask, hue is irrelevant. The mask carries 8 bits of information and you need only to set a level in that range. The value scale is between black and white, vertically on the left edge of the triangle on **Color** palette.

4 Set **Opacity** in the `Controls palette: Brush tool`.

5 Mark in the document to edit the mask.
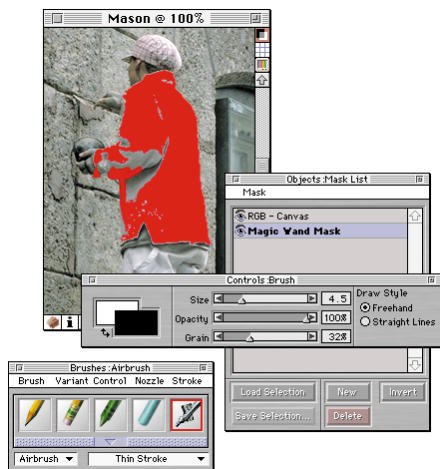
The Magic Wand masked most of the jacket. Now the artist uses the Brush tool to clean up the mask.

You might want to change **Mask Attributes** to set the color and opacity of the mask overlay. To change Mask Attributes, select the mask in the Mask List and choose **Objects palette: Mask menu▶ Mask Attributes**.

Filling the Mask

To fill the mask with the Fill command:

1 In the **Mask List**, select the mask you want to work in. Make sure the mask is visible. The Paint Bucket will only fill the selected mask if it's visible.

2 In the **Art Materials** palette, choose the material you want to fill with. Grads are useful.

3 Choose **Effects menu▶ Fill**. The **Fill** dialog appears.

4 Choose the material you want to fill with.

5 Click **OK**.

For more information on the **Fill** command, refer to "Filling with Art Materials" on page 126.

To fill the mask with the Paint Bucket:

1 In the **Mask List**, display the mask you want to work in. Make sure the mask is selected in the **Mask List** palette.

2 In the **Art Materials** palette, choose the material you want to fill with.

3 Choose the **Paint Bucket** tool from the **Tools** palette.

4 In the **Controls palette: Paint Bucket tool**, choose **Image** for **What to Fill**. Choose the material you want to fill with and set your other options. For complete information on Paint Bucket controls, refer to "Filling an Area" on page 150.

5 Click in the document in the region of the mask you want to fill.

Applying an Image Effect to a Mask

You can apply effects to masks. You may do this for practical reasons, for example **Brightness/Contrast** spreads and chokes the mask. You may do this to create special layering effects, for example applying **Surface Texture** or **Glass Distortion**.

To apply an image effect to a mask:

1 In the **Mask List**, display the mask you want to work in. Make sure the mask is selected in the **Mask List** palette.

2 Choose the Image Effect you want. **Effects menu▶ Tonal Control▶ Brightness/Contrast** is quite useful. Focus effects are also good in some cases.

To learn more about image effects, explore Chapter 13, "Image Effects."

Create Shapes using Shape tools

Bézier curves
Pen & Quick Curve

Rectangles & Ellipses

Text

Selections convert to Shapes

Shapes convert to Selections

Edit Shapes with Shape Edit tools

Shapes @ 100%

Shapes convert to Floaters

Transform with Shape Selection tool

Edit with Floater Adjuster tool

Manage Shapes using Floater List palette

Objects:Floater List

P. Float   Floater   Mask   Script   Net

Green Oval
Red Oval
Oval
Shape 5
Rect 1

Group   Ungroup   Drop   Delete

Set Shape Attributes

⊠ Stroke

⊠ Fill

Opacity   100%
Width   8.0

Opacity   100%

General
Flatness   1

Miterlimit   7.0

Set New Shape Attributes

Name   Rect 1

Cancel   OK

Image
Hose

Brushes   Cloning   Mosaics   Art
Materials

Input

Canvas

Output

Preferences

Internet

Selections

Masks   Shapes   Floaters   Effects

Movies

10

Shapes

Understanding Shapes

Shapes are vector-based objects that you draw, stroke, and fill. Shapes can be simple lines, curves, text outlines, or any type of open or closed path.

You can create and edit shapes with the precision of a drawing program and integrate them with Painter's Natural-Media environment.

Shapes provide much of the vector-drawing functionality found in programs like Adobe Illustrator and CorelDRAW!. Painter's

A shape may be open or closed with straight lines or curved paths.

Shapes feature allows you to work with these tools to create artwork that is not possible in those programs. You can take vector shapes and make them semi-transparent, or give them a compositing method, such as Difference or Gel. And you can convert the vectors to raster imagery.

Draw and illustration programs like Illustrator are based on the PostScript page description language by Adobe Systems. They allow you to create drawings using basic PostScript constructs, like Bézier curves, and give them stroke and fill attributes.

Painter draws shapes in an anti-aliased fashion. This anti-aliasing gives objects in Painter a smooth edge, as opposed to the jaggy edges apparent in most drawing

programs. Some clip-art objects actually look like photographic elements when they are imported in Painter and displayed with anti-aliasing.

Anti-aliased shapes are typically slower to draw to the screen in Painter than aliased objects are in drawing programs. So, you may want to do most of your object creation in your drawing program. You can then import the vector artwork into Painter, tweak it with Painter's drawing tools, and add some Natural-Media effects.

Painter's shapes can be interleaved with bitmapped floaters, so you can layer both styles of artwork in a single composition. You can convert vector objects and groups into bitmapped floaters and use any of Painter's Effects or painting tools on these floating objects to create Natural-Media artwork.

Shapes can also be used to generate selections. You can convert shapes to selections and vice-versa. The tools for adjusting shapes allow precise control over the outline path, so you may want to use shapes to create some of your selection paths.

About Shapes

The paths that create shapes are known as Bézier curves. Curves consist of anchor points that are connected by line segments. When the path is a curve, wings extend from the anchor points. The wings are tangent to the curve. The wings have
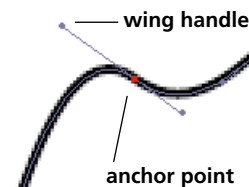
Paths contain anchor points and wing handles.

control "handles" on them. By dragging the wing handle, you can change the curvature of the segment. Shapes may be open (with endpoints) or closed (without endpoints).
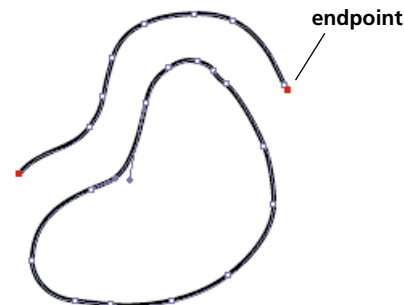
Open paths contain endpoints, closed paths do not.

Anchor points may be either *smooth* or *corner* points. A smooth point allows you to manipulate the segments on both sides of an anchor point by dragging a handle. A corner point restricts the manipulation of the segments to the one side of the anchor point that has a handle.
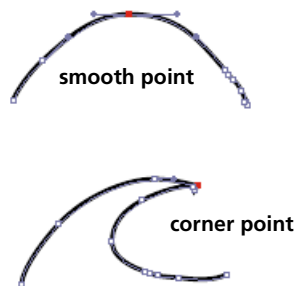
An Anchor point can be a smooth point or a corner point.

Shapes Share Some Features with Floaters

Shapes, like floaters, are objects that hover above the canvas. The shapes you create appear in the Floater List with the image floaters and plug-in floaters. Many of the features for layering and manipulating floaters apply equally to shapes.

- For information on changing shape/ floater layering and working with groups, refer to "The Floater List" on page 202.

- For information on moving and aligning shape and floater objects, refer to "Arranging Floaters" on page 207.

- For information on shape and floater composite methods, refer to "The Composite Method: A Floater's Special Effects" on page 208.

Shapes differ from floaters in that they are not pixel-based. Shapes are created from instructions that describe the outline path, stroke, and fill.

If you put pixel information into a shape, Painter automatically converts it to an image floater. For example, if you paint into a shape, the shape automatically becomes a floater.

In this chapter you'll learn how to create shapes and set their stroke and fill attributes. You'll learn how to modify shapes, edit their outlines, and convert them to selections and floaters.

Saving Files with Shapes

Shapes are maintained when you save files in the RIF format. In other formats, shapes are merged with the canvas. In the Photoshop 3 format, shapes are converted to image floaters and assigned to appropriate layers.

Printing Images with Shapes

For information on printing files containing shapes, refer to Chapter 17, "Printing."

Creating Shapes

You may create shapes in any of several ways:

- By using one of the five shape tools: the **Pen**, **Quick Curve**, **Rectangular Shape**, **Oval Shape** and **Text** tool.

- By converting a selection path to a shape.

- By acquiring an Adobe Illustrator file through the **Acquire** menu.

- By pasting an Adobe Illustrator object from the Clipboard.

As you create shapes, Painter gives them default attributes for stroke and fill. For instructions on setting the default Shape Attributes, refer to "Changing Shape Preferences" on page 38.

After creating a basic shape, you can modify and edit it in a number of ways. For instructions for editing existing shapes, refer to "Editing Shapes" on page 188.

Using Shape Tools

The Shape manipulation tools are on the right side of the **Tools** palette.

The Shape tools can be used to create and manipulate shapes in Painter.

You can toggle between any of the Shape design and editing tools, and the **Shape Selection** tool by holding down the **Command/Ctrl** key. This makes it convenient to quickly make a selection before you add-to or edit it.

Shape Object Tools

You may use the **Rectangular** or **Oval Shape** tools to develop shapes.

To create a rectangle or oval shape:

1 Choose the **Rectangular Shape** or **Oval Shape** tool from the **Tools** palette.

When you press on the tool icon, the **Rectangular** or **Oval Shape** tool "pops-up" so that you may select either version.

Click and hold on the icon to pop-up additional Shape Object tools.

2 Position the cursor in the image and drag diagonally. When the shape is the size you want, let up. Hold down the **Shift** key to create perfect squares or circles.

The **Controls** palette provides information on the size and location of the shape you create.

Painter can be used to create oval and rectangular shapes.

Pen Tool

Use the **Pen** tool when you want to draw straight lines or smooth flowing curves.

The **Pen** tool allows you to create shapes using Bézier curves.
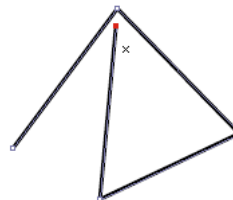
Click to create anchor points connected by straight line segments.

Drag to curve the segments between points.

To draw a Pen tool shape:

1 Choose the **Pen** tool from the **Tools** palette.

You may need to "pop-up" the **Quick Curve** tool to find the **Pen** tool icon.

Hold the Pen tool to pop-up the Quick Curve tool icon.

2 Move the cursor to the image area at the point where you want to begin and click or drag as described below.

To make straight lines:

Click and release the mouse button to create new anchor points. Painter draws a straight line between each anchor point as you click.

You can constrain the placement of the points by displaying the grid. The anchor points will snap to the nearest grid intersection.
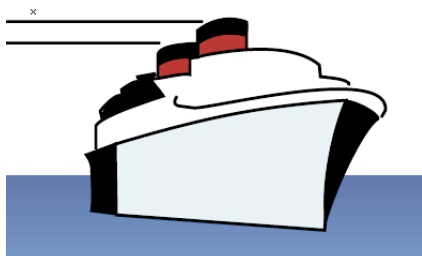
Click and release to create straight lines with the Pen tool.

To make curved lines:

Drag to create a new anchor point and wing. The wing is tangent to the curve at the anchor point and indicates the direction that the curve follows. The angle and length of the wing determine the curvature of the path. The farther you drag, the longer the wing and the deeper the curve.

If the curves don't turn out right immediately, don't worry. You can easily adjust them.

Each click or drag adds to the path. If you make a mistake by clicking on the wrong spot, press the **Delete**/**Backspace** key. Painter removes the last anchor point, so you can try again.
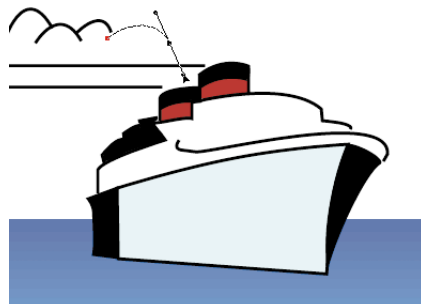
Drag to create Bézier curves with the Pen tool.

To finish a Pen tool shape:

You may finish a shape by either closing it or deselecting the endpoint.

- Click on the origin point to connect the last point with the first point and close the path. Alternately, you can press the **Close** button on the **Controls** palette when the **Pen** or **Quick Curve** tool is selected.

- Hold down the **Command**/**Ctrl** key to temporarily get the **Shape Selection** tool and click anywhere off the shape to deselect it.

After deselecting, you can begin drawing another shape.

Adding to an open shape path:

You can add to a path by selecting either endpoint, then clicking or dragging where you want to add. You can add to a path from the end only. You cannot add to a path that is already closed, or to the middle of an open path.

To select an endpoint, hold down the **Command**/**Ctrl** key and click on or drag a marquee over the endpoint.

Mixing Curved and Straight Segments

What if you want to create a shape with a wing on one side and no wing on the other? There are two methods for doing this—while you are drawing the curve and after it's finished.

1 Click to create an anchor point. Release if you want the point to be a corner point; drag and release if you want the point to be a smooth point.

2 Hold down the **Option**/**Alt** key. Starting from the anchor point, click, drag, and release to establish the angle of a new wing. If your original anchor point was a corner point, you now have an anchor point with a single wing pointing in the direction of your next anchor point. If your original anchor was a smooth point, you will now have two discontinuous wings (they are broken instead of connected), each identifying a different curvature away from the anchor point.

3 Move the cursor to a new location, and create your next anchor point to see the new curve and wing you just established.

After you have drawn the curve:

You can modify a soft or corner point with the **Convert Point** tool. For more information on this tool, refer to "Converting between Smooth and Corner Points" on page 190.

Quick Curve Tool

The **Quick Curve** tool allows you to create Bézier curves by drawing freehand lines, as if you were drawing with a pen or pencil.

To draw a freehand shape:

1 Choose the **Quick Curve** tool from the **Tools** palette.

You may need to "pop-up" the **Pen** tool by clicking and holding on its icon to find the **Quick Curve** tool icon.

2 Move the cursor to the image area at the point where you want to begin drawing. Drag to draw your curve, moving your hand as though you were holding a pen or pencil. As you drag, a dotted line appears.
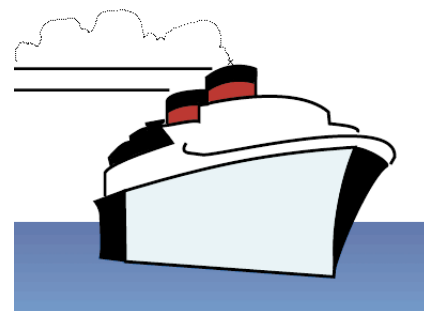
A dotted line appears as you drag the Quick Curve tool to draw freehand style.

3 When you let up, the Quick Curve shape appears.

If you want to close the shape, finish on top of the point where you began.

When you release your mouse or stylus, the shape path appears.

You can add to either endpoint of a **Quick Curve** by selecting the endpoint, then dragging out from it.

To select an endpoint, hold down the **Command**/**Ctrl** key and click on or drag over the endpoint.

Text

The **Text** tool allows you to create shapes from Adobe Type 1 or TrueType font outlines. Shapes created with the **Text** tool support all of the features and options for working with basic shapes.

You use the **Text** tool to create text shapes.

To create a Text shape:

1 Choose the **Text** tool from the **Tools** palette.

To create text shapes click the Text tool and choose a font on the Controls palette.

2 In the **Controls palette: Text tool** use the **Point Size** slider to choose a point size.

3 In the **Controls palette: Text tool** choose a font from the Font pop-up menu. Fonts with an bullet after their name are Adobe Type 1 fonts.

4 Click in the image where you want to start the text. Remember, you can move the text shapes after you create them.

5 Type the text you want. You may press **Return**/**Enter** to "carriage return" to the next line.

Paris

Create custom text with the Text tool.

If you make a mistake while typing, you can press the **Delete**/**Backspace** key to delete, but only if you haven't moved your insertion point.

If you have moved your insertion point, you must select the shape with the **Shape Selection** tool, or the **Adjuster** tool and press the **Delete**/**Backspace** key.

For organization and better control, you might want to group the shapes that make up words or phrases.

As you type, the text shapes are added to the list of selected shapes in the Floater List. After typing one word or phrase, choose **Shapes menu▶ Group** or press **Command-G**/**Ctrl+G**. Painter gathers the separate characters into a group. Now, press **Return**/**Enter** to open the group's **Floater Attributes** dialog. Enter the word or phrase you just typed for the group's floater name. Now you can easily identify and control that word or phrase as a single item.

Creating Shadows on Your Text

If you want to put a drop shadow on text you can. Apply the shadow once you are finished working with the text as shapes. Painter must convert the shapes to image floaters to apply the drop shadow.

Use **Effects menu▶ Objects▶ Create Drop Shadow** to create the drop shadow.

Paris

A drop shadow makes text stand out.

Sometimes, designers apply effects to text-shaped selections in an image. To create text-shaped selections, convert the text shapes to selection paths.

Creating a Shape from a Selection

Converting a selection to a shape enables you to edit the contour using the Bézier editing tools. When you are satisfied with the contour, you can convert the shape outline back to a selection.

If you are simply scaling, rotating or skewing a selection path, use the **Selection Adjuster** tool. If you need to edit the profile of the curve, use **Select menu▸ Convert to Shape**.

Working from a selection path also lets you create shapes based on regions of the image. For example, if you used the Magic Wand to select a region of common color, you could convert the Magic Wand selection path to a shape.

You can convert a selection to a shape.

To convert a selection to a shape:

1 Create a selection in the image.

If the selection you want is in the Selection Portfolio, drag it into the image first.

2 If the selection is mask-based, you must choose **Select menu▸ Transform Selection** to generate path-based to selections.

3 Choose **Select menu▸ Convert to Shape**. Painter converts the selection to a shape, giving it the default shape attributes. The new shape appears in the Floater List.
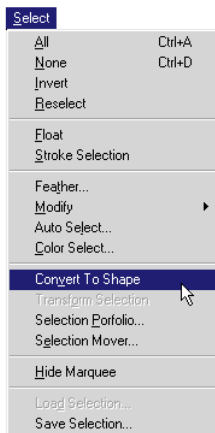
Convert to Shape command.

To convert a shape to a selection:

Select the shape you want to convert with the **Adjuster** tool, or the **Shape Selection** tool. Alternatively, highlight the path or group name in the Floater List. Choose **Shapes menu▸ Convert to Selection**.

Acquiring Shapes from Adobe Illustrator

You may want to work with shapes you've created in Adobe Illustrator. Painter lets you import the shape contents of files in Illustrator EPS format.

Working with Adobe Illustrator files.

There are a number of Illustrator file options that are not supported by Painter. Patterns, placed images, gradients, masks and text cannot be interpreted by Painter. If the file contains text, convert the text to outlines. To do this in Illustrator, select the text and choose **Type menu▸ Create Outlines**.

When you are ready to bring the shapes into Painter, choose **File menu▸ Acquire▸ Adobe Illustrator**.

Painter also supports PostScript-on-the-clipboard when pasting into a Painter document. This convention allows applications to exchange high-quality vector PostScript information. With PostScript-on-the-clipboard you can copy from Illustrator and paste into Painter when both applications are running. Painter will read a clipboard in this format, but will only export bitmapped floaters and selections.

Setting Shape Attributes

There are several characteristics that you can specify for a shape, including whether it is stroked and filled.

Stroking a shape refers to coloring a line on the outline path. Filling a shape refers to coloring the area that is enclosed by the outline.

You may also control the width of strokes (lines) and the way line ends are drawn and joined.

To set shape attributes:

1 Select one or more shapes whose attributes you want to change.

You can select a shape by clicking on it with the **Adjuster** or **Shape Selection** tool.

You can also select a shape by clicking its name in the Floater List. For more information on the Floater List, refer to "The Floater List" on page 202.
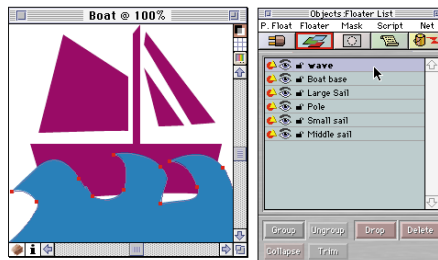
Shapes appear in the Floater List.

2 Choose **Shapes menu▶ Set Shape Attributes**. The **Shape Attributes** dialog appears.
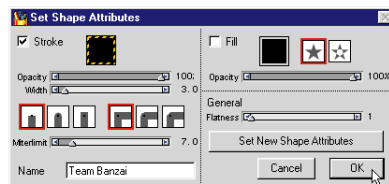
Use the Shape Attributes dialog to set stroke and fill attributes for shapes.

You may also select a shape and press **Return/Enter** or double-click a shape's name in the Floater List to open the Attributes dialog.

3 Change the Stroke attributes. When you stroke a shape, you can choose the color, opacity, and width of the line that is painted around the shape.

Stroke enable the **Stroke** check box to use a stroke with the selected shape tool. To remove the stroke, disable the check box.

Color double-click the color chip to display the Color Picker. You can also select a color for the stroke directly from the **Color** palette while in this dialog.

Opacity controls the opacity of the stroke. Adjust to the right to make the stroke more solid. Adjust to the left to make the stroke more transparent.

Width controls the thickness of the stroke.

Line cap controls the endpoints of open shapes. There are three styles: projecting, round and butt.

To set a line cap style for selected objects, click the style you prefer.

Line join style determines how corners are created when two segments meet at a corner point. There are three styles: miter, round, and bevel.

To set a line join style for selected objects, click the style you prefer.

Miter Limit If you have chosen the **line join style**, you can specify a **Miter Limit**. When mitered corners are joined at a sharp angle, a sharp corner is created. You can set the miter limit to smooth out the sharpness.

To set a miter limit for a selected object, adjust the sliders.

4 Select a Fill Method. The **Fill Method** icons control whether intersecting areas of a shape are filled or not. The methods are:

Fill overlaps Overlapping areas are filled with the same color.

★

The Fill overlaps method fills overlapping area with the same color.

Don't fill overlaps Overlapping areas are not filled, and multiple overlaps alternate being filled or not.

☆

The Don't fill overlaps method does not fill overlapping areas.

5 Change the Fill attributes. When you fill a shape, you can choose the color and opacity of the fill.

Fill To fill a shape, enable the **Fill** check box. To empty the shape (clear the Fill), disable the **Fill** check box.

Color double-click the color chip to display the Color Picker. You can also select a color for the fill directly from the **Color** palette while in this dialog.

Opacity controls the opacity of the fill. Adjust to the right to make the fill more solid. Adjust to the left to make the fill more transparent. This control is also available on the **Controls palette: Adjuster tool**.

If you use the **Effects menu▸ Fill** command (or the **Paint Bucket** tool) to fill a shape, Painter converts the shape to an image floater. This is necessary to apply pixel data to the region.
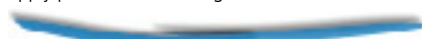
6 Set the general shape attributes.

Flatness controls how many straight lines the program uses to approximate a curve when printing. PostScript output devices create curved lines by linking a series of short, straight lines that progress in angle. The smaller the flatness setting, the greater the number of straight lines and the more accurate the curve.

Usually you do not need to change the flatness setting. You may want to change it to adjust for a particular high resolution printer or to avoid a PostScript *limitcheck* error. Check with your output service to find out if they have a recommended flatness setting.

A change in flatness will appear only in your output, not on your screen.

7 To apply the selected stroke color to shapes you create in the future, click the **Set New Shape Attributes** button.

8 When you are satisfied, click **OK**.

Changing Shape Preferences

You can change the default for how shapes are stroked and filled as you create them.

Choose **Edit menu▸ Preferences▸ Shapes** to display the **Shape Preferences** dialog.
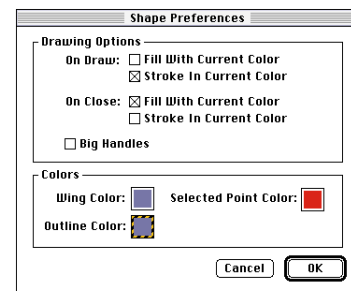
Use the Shape Preferences dialog to set default attributes for shapes.

For more information on the Shape preferences dialog, refer to "Changing Shape Preferences" on page 38.

Working With Shapes

Grouping Shapes

Shapes can be grouped, allowing you to manipulate multiple shapes as a single unit. This is often desirable—especially in Text shapes. By grouping the letters of a word, you can move and manipulate the word as a unit.

You can group and ungroup shapes from the buttons on the **Floater List** palette or via the **Objects palette: Floater menu▸ Group** and **Ungroup** commands.

To group shapes:

1 Select the Shapes you want to group using either the **Shape Selection** tool, the **Adjuster** tool, or by highlighting the Shape names in the **Floater List**.

Select multiple shape while holding down the **Shift** key.

2 In the **Floater List** palette, click **Group**. You may also choose **Objects palette: Floater menu▸ Group**.

3 Now whenever you click on a member of the group with the **Adjuster** tool, the entire group will be selected. All the element transformations, such a **Scale**, **Skew** and **Rotate** will work on the group as a whole. You will also notice that a special Group item has been created in the **Floater List**.

You cannot scale, rotate, flip or distort groups that contain a mixture of bitmap floaters and Shapes. You must manipulate these two types of entities independently before you group them.

To ungroup shapes:

1 Select the Shapes group by using the **Adjuster** tool, or by highlighting the group name in the **Floater List**.

2 Click the **Ungroup** button on the **Floater List** palette, or choose **Objects palette: Floater menu▸ Ungroup**.

Creating Compound Shapes

In a compound shape, one outline path is used to cut a void in another path. You'll see this in many text shapes.

The outline is one shape, and the "hole"—in an "A" or "O," for example—is a second shape. The two shapes are compounded into a single shape, which allows the hole to be open.

To create a compound shape:

1 Create an outer shape.

2 Create the inner shape. The inner shape should be completely inside the outer shape.

3 Use the **Shift** key to select both shapes.
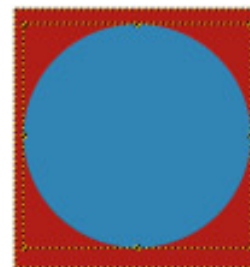
Select both shapes to create a compound shape.

4 Choose **Shapes menu▸ Make Compound**. When compounded, the circle cuts a hole in the rectangle.

The resulting compound shape can itself be used again to create another compound shape.

If you like, you may make additional holes by repeating the procedure, using this compound as the outer shape.

To convert a compound shape back to multiple objects:

1 Select a compound shape.

2 Choose **Shapes menu▸ Release Compound**.

Editing Shapes

Five tools are used for editing shapes. As you work, you'll switch tools based on the type of changes you're going to make.

Press to display other Shape Edit tools

Shape Selection drags anchor points and control handles.

From any other editing tool, you can toggle to the **Shape Selection** tool by pressing the **Command**/**Ctrl** key.

Scissors cuts the segment at the point you click.

Add Point adds an anchor point where you click on the curve.

Delete Point deletes the anchor point you click on.

Convert Point changes anchor points from being corner points to smooth points and vice versa.

Selecting a Shape

If you don't see the shape's outline path, you'll want to select the shape—to display the path and anchor points—before proceeding. It is easier to work when you can see the path and points.

You can select a shape by clicking on it with the **Shape Selection** tool.

If the shape has no fill, it might be easier to draw a marquee over all or part of the shape.

You can also select a shape by clicking its name in the **Objects: Floater List palette**.

Moving Anchor Points

You can move anchor points by dragging them. Before you can drag an anchor point, you must select it. You may select one or several points.

To move anchor points:

1 Choose the **Shape Selection** tool from the **Tools** palette.

You may need to "pop-up" the **Adjuster** tool to find the **Shape Selection** tool icon.

2 Click an anchor point to select it, or draw a marquee around the point.

- To select several points, draw a marquee around those points. Any anchor points that are within the marquee are selected—including those from other shapes.

- To add to the selection, hold down the **Shift** key and select more points.

3 Drag the point where you want it. If you have selected several, dragging one point moves all of them.

Adding Anchor Points

You can add anchor points to create new vertices or curves.

To add an anchor point:

1 Choose the **Add Point** tool from the **Tools** palette.

2 Move the cursor to the place on the path where you want to add the point.
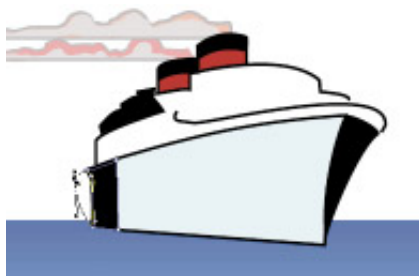
Drag a point to move it.

3 Click to add the point. A new anchor point is created.

Deleting Anchor Points

You can delete anchor points to change the shape of the path or if there are unnecessary points and you want to make the contour smoother. This might occur when you draw with the **Quick Curve** tool or create a shape from a selection.

Use the Add Point tool to add anchor points to the path.

To delete an anchor point:

1 Choose the **Delete Point** tool from the **Tools** palette.

2 Click on the anchor point you want to delete. The anchor point is deleted. The path is still connected.
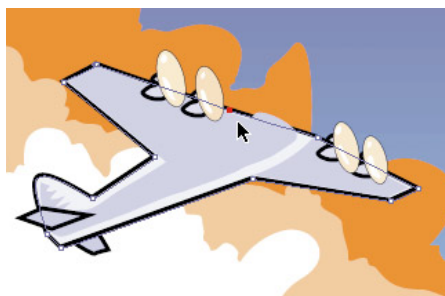
Use the Delete Point tool to remove anchor points.

Adjusting Curvature

An anchor point on a curve and two wings. The angle and length of the wings determine the curvature of the segments on either side of the anchor.

To adjust a curve:

1 Choose the **Shape Selection** tool from the **Tools** palette.

2 Drag a wing handle to set the curve you want. The farther you pull out a wing, the deeper the curve will be.

Use the Shape Selection tool to drag a wing handle.
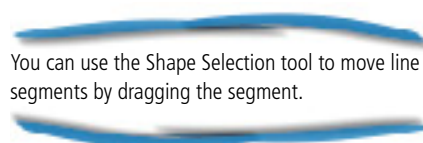
You can use the Shape Selection tool to move line segments by dragging the segment.

If an anchor point's wings are retracted (not visible), you can pull them out with the **Convert Point** tool.

The result of moving a wing depends on whether the anchor point is defined as a smooth point or a corner point. The next section describes the difference.

Converting between Smooth and Corner Points

Two connecting curves (or straight lines) share one anchor point, which may be a smooth or corner point. The wings on smooth and corner points behave differently.

When you drag the handle on one wing of a smooth point, the curves on both sides of the point change. The wings remain co-linear.

When you drag the handle on one wing of a corner point, only the curve on that side of the point changes.

With a corner point, you may adjust the angle of the wings independently.

You can use the **Convert Point** tool to convert between smooth and corner points.

To convert a corner point to a smooth anchor point:

1 Select the anchor point you want to work with.

2 Choose the **Convert Point** tool from the **Tools** palette.

Use the Convert Point tool to pull out the retracted wings.

3 Drag one of the wings to change its angle.

If the wings are not visible, drag out from the anchor point first.

After converting the point, you must use the **Shape Selection** tool for further adjustments. If you try to adjust the handle of a corner point with the **Convert** tool, it will revert to a smooth point.

1 Select the anchor point you want to work with.

2 Choose the **Convert Point** tool from the **Tools** palette.

3 Click on either the anchor point or on a wing handle.

Cutting a Segment

You may want to open a shape so that you can add new curves or connect another open shape. You can do this with the **Scissors** tool.

To cut a shape:

1 Choose the **Scissors** tool from the **Tools** palette.
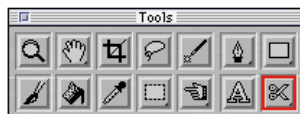
The Scissors tool can be used to cut a path.

2 Click where you want to split the shape (you cannot click an endpoint). The scissors snap closed momentarily.

The Hot Spot of the **Scissors** tool is where the blades cross. Position the cross on the line.
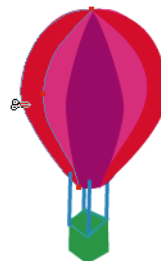
The Scissors tool opens and closes to cut the path.

When you split a curve, two new anchor points are created. These new points are on top of each other, and both are selected. If you try to drag one of them with the **Shape Selection** tool, both move. To separate the points, first deselect them, then drag the top point away.

3 Choose the **Shape Selection** tool from the **Tools** palette and select and move segments.
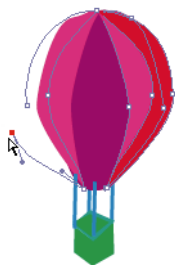
Once a path is cut, it can be moved.

If you want to remove a section of the path, click another place on the path. Then use the **Shape Selection** tool to drag the segment away.

Joining Endpoints

The **Join Endpoints** command allows you to connect any two endpoints—of the same shape or of different shapes.

This is how you can attach one shape to another.

To join endpoints:

1 Choose the **Shape Selection** tool from the **Tools** palette.

2 Select the two anchor points you want to join. You can do this by dragging a selection marquee around both points or by clicking the first point, then **Shift**-clicking the second point.
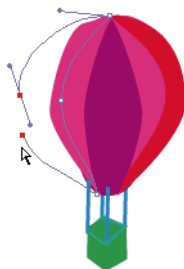
Use the Direction Selection tool to select two endpoints.

3 Choose **Shapes menu▸ Join Endpoints**.
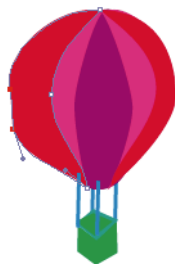
Use the Join Endpoints command to connect two endpoints.

If the points are at a distance from one another, a straight line is created between the two points.

Averaging

Averaging moves two or more anchor points with respect to each other in horizontal, vertical, or both dimensions.

One of the basic uses for averaging is when you are going to join the endpoint of one curve to the endpoint of another. Averaging the endpoints (in both directions) brings them precisely on top of each other. Now, when you join the endpoints, Painter merges them to *a single point*, through which the path continues. Without averaging first (if the points are just "near each other"), Painter joins them with a *segment*. In some cases, this difference will be important to you.

To average endpoints:

1 Choose the **Shape Selection** tool from the **Tools** palette.

2 Select the anchor points you want to average. It is often easiest to drag a marquee around the points you want.

3 Choose **Shapes menu▸ Average Points**. Painter displays the **Average** dialog.

4 Select the dimensions you want to average in: Both, Horizontal, or Vertical.

5 Click **OK**. Painter averages the points.

Modifying Shapes

This section describes how to modify a shape as a whole—resizing, rotating, and skewing. Shapes can be moved, cut, copied, and pasted like other floaters. For information on manipulating floaters, refer to "Arranging Floaters" on page 207.

Resize

You can resize a shape or group of shapes by directly manipulating the objects with the **Adjuster** tool, or by using the **Scale** command.

1 Choose the **Adjuster** tool from the **Tools** palette.
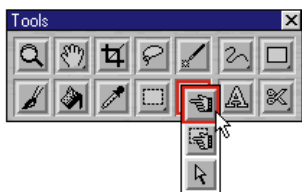
Use the Adjuster tool to select an entire shape.

2 Select the shape or group you want to resize. You may hold down the **Shift** key to select additional items.

A selection rectangle appears around the shapes. The rectangle has a handle on each corner and side.

3 Drag one of the handles to resize the selected shape.

To resize in one dimension, drag one of the side handles.

To resize in both dimensions, drag one of the corner handles. You can maintain the proportions by holding down the **Shift** key as you drag.

Drag in to shrink, drag out to stretch.

Resizing a shape.

You can also use the **Scale** command, found under **Effects menu▶ Orientation▶ Scale**. This command works for both Shapes and image floaters. The **Scale** command allows you to increase or decrease size by a fixed percentage. For more information on the **Scale** command, refer to "Scaling Images" on page 257.

Rotate

You can rotate a shape or group of shapes by directly manipulating the objects with the **Adjuster** tool, or by using the **Rotate** command.

1 Choose the **Adjuster** tool from the **Tools** palette.

2 Select the shape or group you want to rotate. You may hold down the **Shift** key to select additional items.

A selection rectangle appears around the shapes. The rectangle has a handle on each corner and side.

3 Choose **Effects menu▶ Orientation▶ Rotate**. The **Rotate Selection** dialog appears.

This command works for both Shapes and bitmapped floaters. The **Rotate** command allows you to rotate by a fixed

degree value. For more information on the **Rotate** command, refer to .
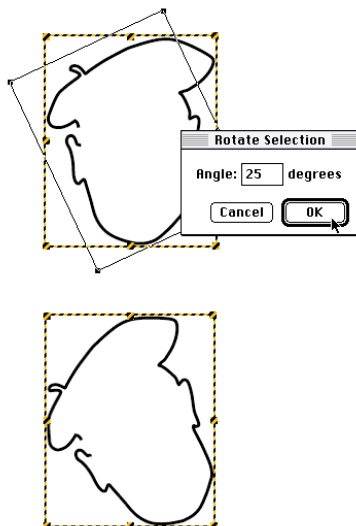
You can rotate a shape using a menu command or the Adjuster tool.

You can also hold down the **Command**/**Ctrl** key and drag a corner handle

Slant

To slant (skew) a shape:

Hold down the **Command**/**Ctrl** key and drag a middle handle.

You can slant a shape using a menu command or the Adjuster tool.

You can also use the **Distort** command, found under **Effects menu▸ Orientation▸ Distort**. This command works for both Shapes and bitmapped floating selections.
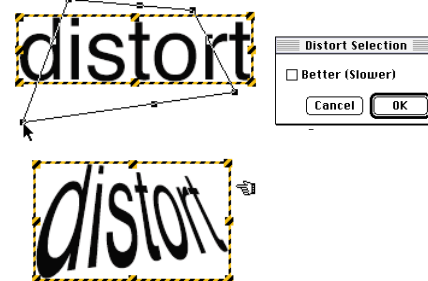
Another variation of a slant is a distortion.

Duplicate

Duplicate creates a copy of the selected shape. A straight duplication isn't very special. However, Painter allows you to duplicate with compound transforms, which leads to interesting possibilities.

All duplications are created according to the specifications in the **Set Duplicate Transform** dialog.

You can copy a shape or group of shapes by choosing the **Adjuster** tool, holding down the **Option**/**Alt** key and clicking or dragging on the shape.

To change duplication settings:

1 Choose **Shapes menu▸ Set Duplicate Transform**. The **Set Duplicate Transform** dialog appears.
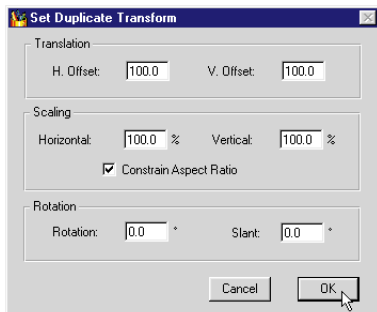
Use the Duplicate Transform dialog to set your duplication transformations.

2 Change the values to describe the transformations needed. You have the following options:

Translation controls where, in relation to the original, Painter creates the duplicate shape.

The offset values are in pixels. When **H. Offset** and **V. Offset** are both zero, the duplicate is created precisely on top of the original. If both values are 100, the duplicate appears 100 pixels lower and 100 pixels to the right.

Negative values offset the duplicate to the left and up, respectively.

Scaling controls the size of the duplicate in relation to the original. The scale values are percentages.

If you want to create a distorted duplicate, disable the **Constrain Aspect Ratio** check box. This allows you to change the horizontal and vertical scale by different percentages.

Rotation controls the number of degrees to rotate the duplicate.

Positive values rotate the duplicate counterclockwise. Negative values rotate clockwise.

Slant controls the degree of slant applied to the duplicate, like pushing vertical text into italics.

Slant accepts values between -90° and 90°. However, as values approach the extremes, the duplicate shape becomes nothing but a streak.

Positive values slant the shape to the right. Negative values slant it to the left.

3 When you've set the transformation factors, click **OK**.

To create a transformed duplicate:

1 Select the shape you want to transform.

2 Choose **Shapes menu▸ Duplicate**. Painter creates a duplicate shape according to the specifications you've set.

This duplicate is now the selected shape, you can choose the **Duplicate** command again or press **Command-]/Ctrl+]** to repeat the transformation on it.
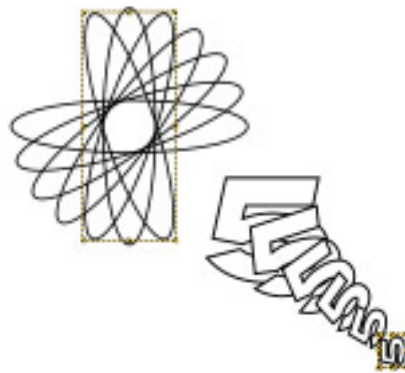
Duplicating a shape. The first image is rotated only. The second image uses scale, rotate and translate.

Blending Shapes

Blend creates intermediate shapes between two or more selected shapes. This is useful for morphing one shape into another. It is also used to simulate shading on irregular shapes. Blending applies both to the shape outline and to the stroke and fill attributes.
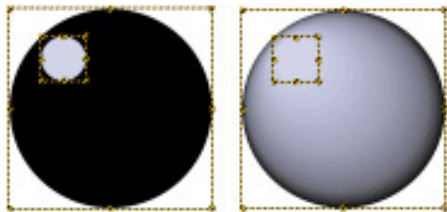
Blend creates intermediate versions between two or more selected shapes.

To blend shapes:

1 Position the shapes you want to blend.

2 Arrange the layers of the shapes. Blends will progress from lower layers to higher layers.

3 Choose the **Shape Selection** tool from the **Tools** palette.

4 Select the shapes you want to blend. Use the **Shift** key to select two or more.

You may also blend a shape group to another group, but you can't blend between a single shape and a group.

Blending between groups offers interesting effects, especially if the groups are blends themselves.

5 Choose **Shapes menu▸ Blend**. The **Blend** dialog appears.
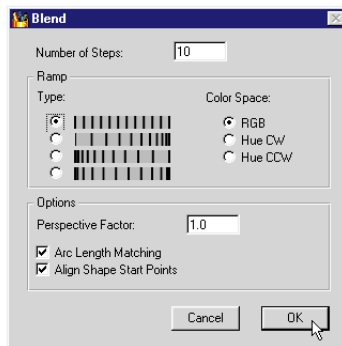
Use the Blend dialog to set blending attributes.

6 Choose your blend options as needed:

Number of Steps controls the number of intermediate shapes to create.

Creating a large number of intermediate shapes gives the appearance of a solid between the start and end shapes.

Ramp Type determines the progression of new shapes—whether they are created at regular intervals or if the spacing increases or decreases across the range.

The four ramp types are:

• Blend shapes are evenly spaced.

• Spacing starts wide and decreases approaching end of blend.

• Spacing starts small and increases approaching end of blend.

• Spacing is wide in the middle and decreases toward both ends.

Color Space controls how the colors blend.

With **RGB** the color progresses directly over the course of the blend.

With **Hue CW** the color progresses clockwise in the color wheel to reach the destination color.

With **Hue CCW** the color progresses counterclockwise in the color wheel to reach the destination color.

Perspective Factor controls the spacing of intermediate shapes. Acceptable values are between .01 and 100. With a Perspective Factor of 1.0, the shapes are spaced evenly.

The following example shows how to take advantage of this feature.

The original shape was duplicated at 25% scale, Perspective Factor of 4.0 (25*4=100) was used to space the intermediate shapes. (If the layering of the two blend shapes was reversed, a Perspective Factor of .25 would achieve the same spacing)

Shapes later in the blend (getting smaller) are spaced closer together. This simulates the effect of natural perspective.

Arc Length Matching is required when blending shapes constructed of a different number of anchor points.

When disabled, blend shapes must have the same number of points.

Align Shape Start Points bases the orientation of intermediate shapes on the orientation of the start and end shapes when enabled.

When disabled, Painter bases the orientation of intermediate shapes on the starting point (first anchor point) of the start and end shapes. This can create a "tumbling" appearance in the intermediate shapes.

7 Click **OK**.

The uses for blends are unlimited.

Other Transformations

The **Flip Vertical** and **Flip Horizontal** commands found under the **Effects menu▸ Orientation** work for shapes and groups of shapes as well as for bitmap floaters. For more information on these commands, refer to "Flipping Images Horizontally" on page 258.
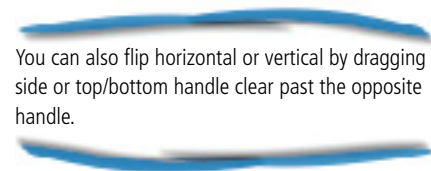
You can also flip horizontal or vertical by dragging a side or top/bottom handle clear past the opposite handle.

Saving Shapes for Later

Painter doesn't have a shapes library. However, because of the close relationship between shape outlines and selection paths, you can save shape outlines in the Selection Portfolio.

To store shapes as paths:

1 Convert the shape to a selection.

2 Choose **Select menu▸ Selection Portfolio**. The **Selection Portfolio** appears.

3 Choose the **Selection Adjuster** tool (looks like the **Adjuster** tool but has a rectangular selection in the icon).

You may need to "pop-up" the **Adjuster** tool to find the **Selection Adjuster** tool icon.

4 Drag the selection path from the document into the library. Name it appropriately.

You can also export shapes as Adobe Illustrator files and re-acquire them as needed.

Converting Shapes to Floaters

Shapes are close relatives of floaters. They follow the same layering rules and you can manipulate them in many of the same ways.

Shapes differ from floaters in terms of the type of data they contain. Shapes are created from PostScript instructions. Floaters are constructed of pixels.

If you want to work with pixel information in a shape, you may convert it to a floater. In many cases, Painter will do this for you automatically. For example, if you paint into a shape, Painter displays a dialog alerting you that the shape must be converted to an image floater to proceed. Click **OK** to convert the shape to a floater. Click **Cancel** to keep the shape. If you do not want the alert to be displayed in the future, enable the **Commit and don't ask again** check box.

You may also deliberately convert a shape or group of shapes to a floater.

To convert a shape to a floater

1 Select the shape.

2 Choose **Shapes menu▶ Convert to Floater**. For more information about the properties shapes and floaters share, refer to .

Acquiring and Exporting Shapes to Adobe Illustrator

Painter allows you to export shape data in Adobe Illustrator format, which can be read by Illustrator.

Exporting to Illustrator format will save only the Shapes, not the canvas or any other floaters you have. Transparency and compositing methods are lost when exporting to Illustrator format (it doesn't support them).

To export shapes:

Choose **File menu▶ Export▶ Adobe Illustrator file**.

Painter display a **Save** dialog so you can choose a destination and name the file.

Image
Cloning Hose
Brushes · Mosaics · Art
Materials

Input

Canvas

Preferences

Output
Internet

Scripts

Selections

Masks · Shapes · Floaters · Effects · Movies

Create Floaters
from Selections

Objects:Floaters

Choose or store
Floaters using
the built-in
Floater Portfolio

Convert Image Floaters
to Reference Floaters
for transformations -
Rotate, Slant,
Resize

Create Floaters
from Shapes

Floater Sample

A

Objects:Floater List
P. Float Floater Mask Script Net

Transparent Layer
Floater Portfolio...

Group
Ungroup
Collapse

Select All
Deselect
Lock

Drop
Drop All
Drop and Select
Delete Floater

Trim
Floater Size...

Hide Floater Marquee

Floater Attributes...
Floater Mover...

Group
Collapse

Control floaters
with Floater menu
and Floater
Adjuster controls

Objects:Floater List
P. Float Floater Mask Script Net

Green Diamond
Red Letter A
Globe

Group Ungroup Drop Delete
Collapse Trim

Objects:Mask List
P. Float Floater Mask Script Net

RGB Globe
Globe Mask

Load Selection New Invert
Save Selection... Delete

Mask of selected floater
appears in the Mask List

A

Controls:Adjuster
Back Front   Opacity 100%   W:0   H:0
<<   >>   Composite Method Default   T:0 B:0
                                          L:0 R:0

11

Floaters

Understanding Floaters

Floaters are images, or portions of images, that float above the canvas. You can copy and move floaters around in the document to create just the composition you want.

Each floater is a separate image, so each floater you add to a document introduces another layer of information. Because each floater is distinct, you can move them around and edit them without interfering with the canvas image—or other floaters. Likewise, you can work in the canvas without interfering with any of the floaters.

Save files with floaters in RIF format so you can rearrange them later.

In RIF format, Floaters stay floating even when you save the file, so you can make changes easily. There's no need to redo the entire composition; just rearrange the floaters. The result is a dynamic and flexible design environment.

Floaters can be tagged with URLs to link to other pages on the Internet's World Wide Web. For more information, refer to "Using Floaters to Set Up Image Maps for the WWW" on page 224.

Because you can manipulate floaters independently, they are considered objects.

Painter has four types of floater objects: Shapes, Image Floaters, Reference Floaters and Plug-in Floaters. These object types have the "floating" characteristic in common, but differ in how you create them and what you can do with them.

Shapes

Shapes are vector-based objects with instructions for stroke and fill. Shapes tools make it easy to create uniformly filled image objects, like text.

Shapes do not contain pixel information. You may convert a shape to an image floater, and in fact, some operations, like painting in a shape with a brush, or filling with a gradation, will convert the shape automatically.

Chapter 10, "Shapes" contains detailed information on creating and working with Shapes.

Image Floaters

Image floaters are discrete images that float above the canvas. Image floaters are stored as pixel information with a mask to define the image shape and opacity. You may paint and apply effects in Image Floaters.

Image floaters are used primarily for compositing images—moving portions of an image within a document, moving images between documents, and maintaining layers within a document.

One special variety of image floater is completely transparent—until you paint into it. For more information on painting into a transparent floater, refer to "Painting into a Transparent Floater" on page 215 or "Painting on a Transparent Floater with the Layer Brush" on page 53.

You'll find information on creating and using Image Floaters in "Working with Image Floaters" on page 212.

Reference Floaters

Reference floaters are temporary, low-resolution versions of Image Floaters. You'll convert an image floater to a reference floater when you want to transform it (resize, rotate, slant) by dragging its handles. When you've finished with such transformations, you need to convert the reference floater back to an image floater to restore its original resolution.

You'll find information on creating and using Reference Floaters in "Creating a Reference Floater" on page 220.

Dynamic Plug-in Floaters

"Plug-in Floaters" describes a class of floating objects, each of which brings new functionality to Painter.

A Plug-in Floater provides dynamic effects over its source imagery. For example, the Bevel World Plug-in Floater applies a beveled edge to any Image Floater. The effect is dynamic because you can reopen the Bevel World controls for the floater and change the bevel characteristics.

Kaleidoscope is a Plug-in Floater that uses the underlying imagery. The effect is dynamic because you can move the floater to different areas of the document to get different kaleidoscope effects.

Plug-in Floaters use an extensible architecture. You can add new Plug-in Floaters to your Painter toolbox when they become available.

For detailed information on creating and working with Plug-in Floaters, refer to "Using Plug-in Floaters" on page 226.

What All Floaters Have in Common

Shapes, image, Reference Floaters and Plug-in Floaters have the following characteristics in common:

- They are subject to the layering hierarchy in the Floater List. This includes the related controls for selecting, hiding, locking, naming and grouping.

These features are described in "The Floater List" on page 202.

- They may be Cut, Copied, Pasted, moved onscreen and aligned in the same ways.

These features are described in "Arranging Floaters" on page 207.

- They obey the floater composite method, which controls how the floater interacts with underlying images.

These features are described in "The Composite Method: A Floater's Special Effects" on page 208.

Dropping Floaters

Floaters continue to float even when deselected. When you're finished working with a floater and want it merged with the canvas image, you may "drop" it.

If you drop a Shape or Plug-in Floater, it will be converted to an image floater and then dropped.

To merge a floater or group of floaters with the background:

1 Select the floater or group you want to drop.

2 Click **Drop** on the **Floater List** palette. You may also choose **Objects palette: Floater menu▸ Drop**.

To composite all floaters simultaneously:

Choose **Objects palette: Floater menu▸ Drop All**.

You may want to save the file in RIF format with all floaters floating. This allows you to come back later and make floater changes.

You can clone the file to quickly create a fully composited, flattened version (all floaters dropped).

To composite a floater and select it:

You can drop a floater and automatically use its visibility mask (or outlines for a shape) to create the selection.

Choose **Objects palette: Floater menu▸ Drop and Select**.

Drop and Select replaces the selection.

Saving Files with Floaters

You can save your document in the RIF format with "live" floaters. The floaters will be intact when you reopen the file. The RIF format is the only format that saves all varieties of floaters. If you save in another format, the floaters are automatically composited with the background.

When you save in Photoshop format, Shapes and Plug-in Floaters are converted to Image Floaters, and all floaters are assigned to appropriate image layers.

The Floater List

The **Floater List** palette keeps track of all floater objects in a document and provides special features for controlling them. It lets you change the ordering of overlapping floaters and allows you to group floaters so that you can move them as a unit.

To open the **Floater List** palette, display the Objects palette and click the **Floater** icon.

The **Floater List** palette lists all of the floater objects in the current document. The floater list is arranged according to the layers, with the highest layer on top.
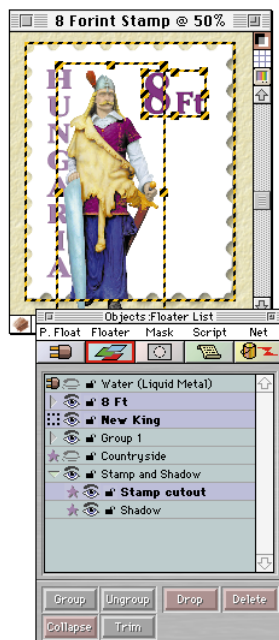
Floaters in an image are listed in the Floater List palette.

Icons identify each floater type:

🔔 **Shape**

⭐ **Image Floater**

⋮⋮ **Reference Floater**

🔲 **Plug-in Floater**

Selecting Floaters

When you want to work with a particular floater, you must select it.

To select a floater, click on it with the **Adjuster** tool. You may also click the floater's name on the **Floater List** palette to select it.
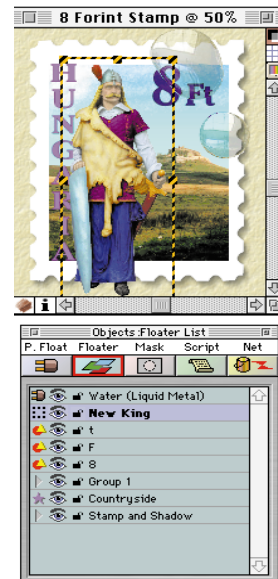
Click on a floater with the Adjuster tool or work with the Floater List.

The floater selection marquee outlines the selected floater. Its listing in the Floater List is shown in bold type and highlighted.

You can select multiple floaters by holding down the **Shift** key and clicking on them. You can also use the **Adjuster** tool to drag a marquee over the floaters you want to select.
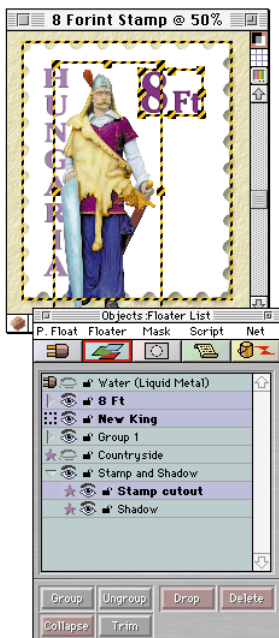
Floaters appear in a selection marquee. Shape Floaters (and their groups) and Reference Floaters have handles for making adjustments. Image Floaters do not have handles.

You can select all floaters in the document by choosing **Objects palette: Floater menu▸ Select All**.

To deselect a floater, click outside of it with the **Adjuster** tool. You may also choose **Objects palette: Floater menu▸ Deselect**. You can deselect a floater by clicking in the empty space below the names in the Floater List.

By deselecting all floaters, you select the canvas.

A deselected floater continues to float. That is, even though you don't see a selection marquee and the floater image appears to blend with the background, the floater is still a distinct object. Changes you make to the background will not affect the floater. This can lead to confusion. For example: If a floater is *not selected*—but you try to paint into it, your brush strokes will go *to the canvas*. Because the floater is concealing that part of the canvas, *you won't see the strokes*. To avoid this, remember to select the floater before you try to paint into it.

If you want a floater to "stop floating," you must Drop it.

Hiding a Floater

If you want to hide a floater, click the **Eye** icon next to its name in the Floater List. When the Eye is shut, the floater is invisible. To see the floater again, click the Eye to open it.

Click on the Eye icon to hide a floater.

Hiding the Selection Marquee

You can hide the selected floater's selection marquee.

Choose **Objects palette: Floater menu▸ Hide Floater Marquee**. You may also press **Command-Shift-H/Ctrl+Shift+H**.

Locking Floaters

If you have quite a few floaters in close proximity, you might select and move a floater by accident. To avoid this, you can lock floaters and groups. A locked floater or group cannot be selected with the **Adjuster** tool in the image window.

A locked shape can be selected, edited and moved with the **Direct Selection** tool.

To lock a floater:

In the Floater List, click the padlock icon for the floater you want to lock. Painter closes the padlock, showing that the floater is locked.

You may also select the floater, then choose **Objects palette: Floater menu▶ Lock.**

To unlock a floater:

In the Floater List, click the padlock icon for the floater you want to unlock. Painter opens the padlock, showing that the floater is unlocked.

You may also select the floater, then choose **Objects palette: Floater menu▶ Unlock.**

Deleting a Floater

You can delete a selected floater in any of several ways:

- Choose **Objects palette: Floater menu▶ Delete Floater**.
- Click **Delete** on the **Floater List** palette.
- Press the **Delete**/**Backspace** key.

Note: The **Edit menu▶ Cut** command removes the floater from this document and puts it on the clipboard. You can move to another document and paste it.

Naming Floaters

As the number of floaters in a document increases, it can become difficult to track which listing refers to which floater. Painter lets you give the floaters descriptive names, which makes them easier to keep track of.

To name a floater:

1 Select the floater.

2 Choose **Objects palette: Floater menu▶ Floater Attributes**.

For an image floater, you can double-click its listing in the Floater List to open its attributes.

The **Shape Attributes** dialog differs, but it does have a field for naming. For more information, refer to "Setting Shape Attributes" on page 185.

3 Enter a descriptive name and click **OK**.

Ordering Floaters

All floating objects (shapes and floaters) appear in the **Floater List**. In the document, the floaters are displayed in order—that is, a floater higher in the list appears in front of the ones below it. Floaters that overlap

Name floaters in the Floater Attributes dialog box.

in the document are layered—the foreground floater obscures the one behind it.

By changing the ordering, you can control the composition of the several floating objects. There are two ways to do this—using the **Objects: Floater List palette** or with the **Controls palette: Adjuster tool**.

To change the order of floaters using the Floater List palette:

Drag the name of the floater to the location in the list that reflects the order you want in your image. For example, if you want the floater on top of the other images, drag it to the top of the list.

To change the order of floaters using the Controls palette:

1 Choose the **Adjuster** tool.

2 Select the floater whose layering you want to change.

3 Use the **Front, Back,** and **Arrow** buttons on the `Controls palette: Adjuster tool` to change the floater's level in the hierarchy.

- Click **Front** or **Back** to send the floater to the top or bottom layer.

- Click one of the arrow buttons to move the floater one layer at a time

The `Controls palette`: `Adjuster tool` describes the selected floater's rectangle and provides several editing options.

You can decrease opacity to hide a floater but it is faster to click the eye icon on the F. List palette.

Changing Floater Opacity

All floaters can be made semi-transparent. Decreasing Opacity allows underlying images to show through.

1 Choose the **Adjuster** tool.

2 Select the floater you want to change.

Use the Controls palette for the Adjuster tool to rearrange the order of floaters.

3 In the `Controls palette: Adjuster tool`, drag the **Opacity** slider to change the selected floater's visibility.

You can also click in the text field and type an opacity value—from zero to 100.

Grouping/Ungrouping Floaters

Group floaters whenever you want to control them as a unit. For example, after creating text shapes, you might want to group the words.

You can move a closed floater group in any of the ways you'd move a single floater. You can also rename, hide/show, lock,

Opacity adjusts transparency of selected floaters.

change the display order and set the opacity of a group just as you do with a single floater.

Painter allows you to create mixed groups—Shapes, Image Floaters and Plug-in Floaters.

You can scale a Shapes group and create drop shadows for a group, but grouping does not allow you to paint across a set of Image Floaters with brush strokes.

To create a group:

1 Hold down the **Shift** key and click each floater on the **Floater List** palette that you want in the group.

You may also use the **Adjuster** tool to **Shift-click** on the floaters or drag a marquee to select the ones you want.

2 In the **Floater List** palette, click **Group**. You may also choose **Objects palette: Floater menu▸ Group**.

A selection marquee surrounds the floaters in the image window. The listings of the floaters are collected under a group listing in the Floater List.

To change a group's name:

1 Double-click the group's name. The **Floater Attributes** dialog appears.

Painter names groups Group 0, Group 1, and so on, by default. You can rename groups if you like.

2 Type a new name and click **OK**.

To ungroup floaters:

1 On the **Floater List** palette, click the group name.

2 In the Floater List palette, click **Ungroup**. You may also choose **Objects palette: Floater menu▸ Ungroup**.

Closing and Opening a Group

To add a floater to a group or work with the contents individually, you must open the group. To again control the group as a unit, you must close the group.

If you want to edit individual floaters in a group or move them separately, you must open the group.

To open a group:

Click the triangle to the left of the group. The arrow turns down, opening the group and revealing the names of its members. You may now select and work with them individually.

To close a group:

Click the arrow to the left of the group name. When the arrow points to the right and the names of the group members are hidden, the group is closed.

To add a floater to a group

1 Open the destination group.

2 Drag the listing of the floater you want to add into the group. (Drag the name, not one of its icons.)

You must open the group to edit individual floaters.

You can add a group into another group in the same way—by dragging the (closed) group name into the (open) destination group.

To remove a floater from a group

1 Open the group.

2 Drag the floater out of the group. (Drag the name, not one of its icons.)

Collapsing a Floater Group

If you want to unite the group as a single floater, choose **Objects palette: Floater menu▶ Collapse**.

Note: There is also a **Collapse** button on the **Floater List** palette.

Collapsing reduces the group to a single image floater. You cannot isolate the original group members after collapsing.

If the group contains shape objects or Plug-in Floaters, Painter alerts you. Click **OK** to convert them to Image Floaters before collapsing.

Arranging Floaters

Moving Floaters

Once a floater is selected, you can drag it anywhere in the image with the **Adjuster** tool. You can also nudge the floater one pixel at a time by pressing the **Arrow** keys on your keyboard.

If moving an image floater leaves a hole in the canvas, you probably wanted to copy the selection, then move the copy.

Moving a Floater or Group to a Specific Location

To move a floater or group to a specific location:

1 Select the floater or group.

2 Choose **Objects palette: Floater menu▶ Floater Attributes**.

For an image floater, you can double-click its listing in the Floater List to open its Attributes.

The **Top** and **Left** boxes show the floater or group's location with respect to the top, left corner (0,0) of the document.

The reference point for the floater or group is the top, left corner of the floater's rectangle (or the group's selection marquee).

3 Enter the new values in the **Floater Attributes** dialog. Increasing the Top value moves the floater down. Increasing the Left value moves the floater to the right.

Positive and negative values that place the floater partially, or wholly, outside of the document are allowed.

4 Click **OK**. The floater moves to the specified location.
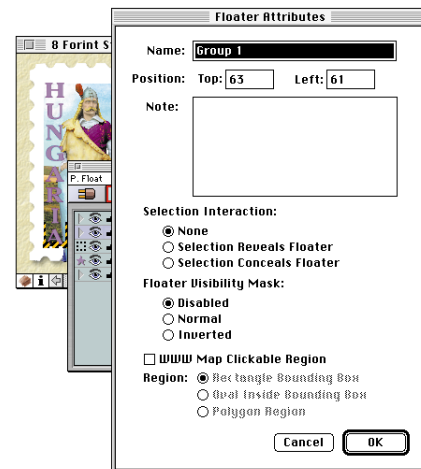
Use the Floater Attributes dialog to position floaters.

Setting floater coordinates in the Floater Attributes dialog helps you to maintain a floater's exact position. This is useful for standardizing buttons in a CD-ROM interface or for spot color production work.

Copying Floaters

You can Copy the selected floater to the Clipboard, then Paste as many copies as you like. You can also move to another document and Paste the floater there.

You can also drag a floater with the **Adjuster** tool from one document to another.

Aligning Floaters

Often, when you work with several floaters, you'll want to position them relative to one another. Painter's **Align** command makes this easy.

To align floating objects:

1 Select the floaters you want to align. You may align any type of floater or closed group.

2 Choose `Effects menu▸ Objects▸ Align` Painter displays the Align window.

You may align the objects horizontally, vertically, or in both dimensions. And you may align the objects to either side, top, bottom, or center.

3 Click the radio buttons to set the alignment you want. If you want to maintain the relationship in one dimension, click the **None** radio button.

Left, **Right**, **Top**, **Bottom** refer to the respective edges of the objects.

For example: In a **Horizontal: Left** alignment, the leftmost object stays in place. All other objects are moved to bring their left edges in line with the stationary object.
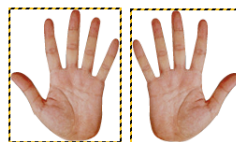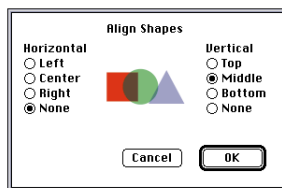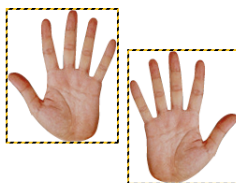
The Align dialog lets you specify parameters for alignment.

As you change the settings, the sample objects in the window display that alignment.

4 When you've set the alignment you want, click **OK**. Painter closes the window and moves the selected objects to that alignment.

The Composite Method: A Floater's Special Effects

When a floater is above another image—either the canvas or another floater—Painter can use the overlapping color information to create special effects.

The effects are variations of the floater's **Composite Method**. Each floater may have its own method. You can change the Composite Method any number of times without actually changing the images. This gives you the freedom to experiment without risking an unwanted, permanent edit.

Composite methods are available for all types of floating objects.

To change a floater's composite method:

1 Select a floater. The floater should have some kind of image behind it. If the next layer is merely black or white, the effects will be limited.

2 Choose one of the Composite Methods from the pop-up menu on the **Controls palette**: **Adjuster tool**. If you don't like one effect, choose a different one.
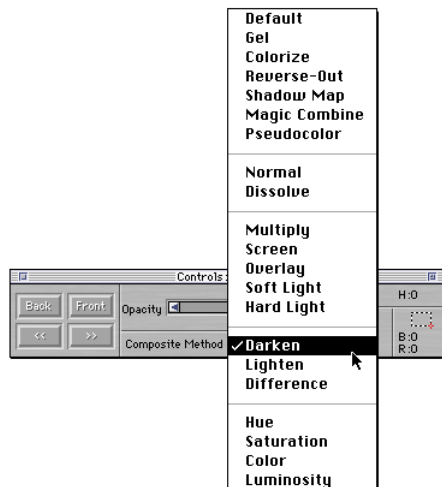
The Composite Methods can be changed from within the Controls palette: Adjuster tool.

Default

In the Default method, the floater covers (hides) the underlying image.

Gel

The Gel method tints the underlying image with the floater's color. For example, a yellow floater gives the underlying image a yellow cast.

Colorize

The Colorize method replaces the hue and saturation of the canvas pixels with the hue and saturation of the floater pixels.

You can use this feature to convert a color image into grayscale and vice versa. A black floater turns the underlying color image into a grayscale image. A colored floater adds color to an underlying grayscale image.

Reverse-Out

In the Reverse-Out method, the floater inverts the colors behind it. Reverse-Out is a great way to drop out type. Place a floater over black type and the type turns white.

A color's inverse, also known as its complementary color, is the color on the opposite side of the color wheel.

With Reverse-Out, the colors in the floater are not considered—only the area it covers.

Shadow Map

Shadow Map blocks light, letting you create shadows without changing the image.

Magic Combine

In the Magic Combine method, the floater is combined with the underlying image based on luminance. The parts of the floater that are lighter than the underlying image appear within the bottom image.

One way to use this command is for filling type. With a photograph as the top floater and black type as the underlying image, choosing Magic Combine fills the type with the image.

Pseudocolor

The Pseudocolor method translates the floater's luminance into hue. You can use this method to turn a grayscale floater into a spectrum of color.

Normal

The Normal method is Photoshop's default mode.

Dissolve

Dissolve results in combining the image color with the floater color, depending on the opacity.

Multiply

Multiply combines colors to create a darker color.

Screen

Screen combines colors to create a lighter color.

Overlay

Overlay combines colors while preserving the highlights and shadows of the image color.

Soft Light

Soft Light darkens or lightens colors depending on the luminance of the floater color.

Hard Light

Hard Light multiplies or screens colors, depending on the luminance of the floater color.

Darken

Darken takes the darker of the image or floater color and uses that color.

Lighten

Lighten takes the lighter of the image or floater color and uses that color.

Difference

Difference subtracts one color from the other, depending on which color has a greater brightness value.

Hue

Hue creates a color by combining the luminance and saturation of the image color with the hue of the floater color.

Saturation

Saturation creates a color by combining the luminance and hue of the image color with the saturation of the floater color.

Color

Color creates a new color by combining the luminance of the image color and the hue and saturation of the floater color.

Luminosity

Luminosity creates a new color from the hue and saturation of the image color and the luminance of the floater color. This is the opposite of Color.

Image Floaters

You'll use Image Floaters to move image selections around in a document and to move images to other documents so you can composite them. In fact, whenever you Copy and Paste image selections, they come in as floaters. This is handy because you can easily drag the floaters where you want them.

You can also use floaters to create Image Hose Nozzle files. For more information, refer to Chapter 7, "The Image Hose."

Working with floaters in a Painter movie is an easy way to create animations. For more information, refer to "Animating Floaters" on page 310.

To create an image floater:

Creating an image floater is a two-step process; you make a selection, then you float it. You have several options for accomplishing either step.

Making a Selection

- You may use any of Painter's selection tools. The **Rectangular** or **Oval Selection** tools, the **Lasso** and the **Magic Wand** are all useful.

- You may also create a shape and convert it to a selection or develop a mask and load it to the selection.

For more information on working with masks and selections, refer to Chapter 9, "Selections and Masks."

Floating the Selection

With an image area selected (marching ants), you can float it.

- Choose **Select menu▶ Float.**

  Hold down the **Option**/**Alt** key when you choose Float to float a copy of the selection.

- You may also use the **Adjuster** tool. Click inside the selection to float it.

  Hold down the **Option**/**Alt** key when you click to float a copy.

- Another way to create a floater is by Copying or Cutting, then Pasting. Anything you Paste from the Clipboard appears in the Painter document as a floater.

If you need to move a floater from one document to another, you could copy and paste it. You can also drag directly between documents.

- The **Effects menu▶ Orientation** commands: **Rotate, Scale,** and **Distort**, automatically float the image selection.

Creating a floater is just the beginning. You can move, copy, and use any of Painter's tools and effects to modify a floater. You can also save a floater to a portfolio library for later use.

Anatomy of an Image Floater

An image floater has two components; the RGB image, which is rectangular, and the visibility mask, which defines the portions of the RGB rectangle that are visible.

When you select a floater in the **Floater List**, the **Mask List** provides a listing for the floater's visibility mask. You'll find more information on working with the floater's visibility mask later in "Floater Visibility Mask" on page 215.

An image floater has two components; the RGB image and the visibility mask.

Working with Image Floaters

Because each floater represents a separate image (above the canvas), you'll need to let Painter know which image you intend to work in. As you work, you'll switch layers— first working on the canvas, then in one floater, then in another, then on the canvas again.

When you want to work with a particular floater, you must select it. When you want to work on the canvas, deselect all floaters. For information on selecting and deselecting floaters, refer to "The Floater List" on page 202.

Trimming a Floater

When Painter creates an image floater, it captures a larger, rectangular region, then masks it down to the shape of the selection. The larger rectangle gives you room to work and allows you to feather the image beyond the original selection.

Trimming a floater crops the floater down to the minimum.

Trimming reduces the floater's dimensions to the minimum rectangle that will contain the masked image. Trimming floaters is good housekeeping, but don't do it until you're satisfied with the feathering and finished adding a drop shadow. Your options for modifying the floater image and mask are reduced after trimming.

To trim a floater, select a floater, then choose **Objects palette: Floater menu▶ Trim** or click the **Trim** button in the **Floater List** palette.

Changing a Floater's Size

The floater's size describes the dimensions of its rectangle. You can change the size to expand or reduce the rectangle. You'd expand the rectangle to get more work space in a floater. You can also cut down on the floater if you like.

Note: The **Floater Size** command is valid for most Plug-in Floaters.

To change floater size:

1 Select the floater, then choose **Objects palette: Floater menu▶ Floater Size**. The **Floater Size** dialog appears.

2 Enter values to change the floater size. You can specify the number of pixels to add to the floater in each direction.

- To expand the floater, use positive numbers.
- To cut down on the floater, use negative numbers.

3 Click **OK**.

Adding a Drop Shadow

Often, you'll want to add a shadow to a floater. Shadows can improve the appearance of text and are often used when developing floaters for an Image Hose Nozzle. You can add a drop shadow to a single floater or to a floater group.

Drop Shadow works only with Image Floaters. Other objects must be converted for this effect.

To add a drop shadow:

1 Select the floater or group you want to shadow.

2 Choose **Effects menu▶ Objects▶ Create Drop Shadow**. The **Drop Shadow** dialog appears.

3 Enter information to describe the shadow you want, then click **OK**.

The **X** and **Y** offset describe the distance the shadow shape is offset from the center of the floater image.

Opacity sets the darkness of the shadow. Increasing Opacity darkens the shadow.

The blurring of the shadow edge is controlled with the **Radius, Angle,** and **Thinness** settings. These controls apply Motion Blur to the shadow shape, thereby softening its edges.
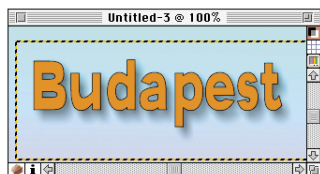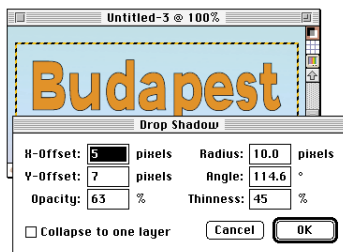
You can easily add a drop shadow to a floater. In this case, the text shapes group was collapsed to become an image floater before adding the drop shadow.

Radius sets the amount of blur. The radius is half the distance across the blurred region. If you set Radius to zero, you'll get a sharp edge on the shadow.

Angle sets the direction that the shadow is blurred.

Thinness applies blur perpendicular to the Angle. If the blurring shows streaks, you can increase Thinness to soften them.

The Collapse to One Layer Option

Drop shadows are normally created as a separate floater, grouped with the original. This enables you to select the drop shadow floater and modify it independently.

If you want the shadow and the original united in a single floater, enable the **Collapse to One Layer** option at the bottom of the **Drop Shadow** dialog. If you are preparing floaters for a Nozzle, this saves you from collapsing each group manually.

Editing Floater Images

Nearly all of Painter's brushes and effects work with floaters. You can paint in a floater, change its opacity, feather its edges, and enhance its image with commands from the **Effects** menu.

You can also edit the floater by modifying its mask. By changing the mask, you'll reveal or conceal parts of the floater. You may paint on a floater's mask with any brush or use any of the advanced masking features, like **Auto Mask**.

Painting in a Floater

To paint in a floater, select a floater and start painting. Your brush strokes appear only in the floater.

You may use any of Painter's brushes to paint or draw in a floater, with the exception of the Water Color brushes—a floater doesn't have a wet layer.

You can move a floater to a temporary document, Drop and Select, and use the Water Color brushes there. Because you dropped the floater with a selection, you can easily re-float the modified image to bring it back.
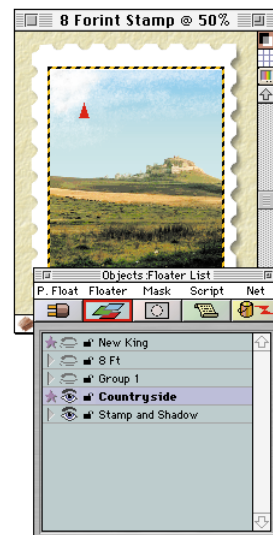
Paint on a selected floater to change the image. Here the artist uses the Airbrush to add some clouds to the "Country Side" floater. Higher floaters are hidden.

You can't paint across a floater group. If this is something you want to do, you need to **Collapse** the group first.

To paint on the canvas again, deselect all floaters in the Floater List. Select the Canvas-RGB listing in the Mask List. You can now start painting. When no floater or mask is selected, your brush strokes go to the canvas.

This can be interesting if a floater covers the area where you're painting. In this case, you might not see the brush strokes. You'll

need to deal with the floater by moving, hiding, or dropping it to see what you're painting.

Painting into a Transparent Floater

You might want to view the canvas image, but paint over it into a floater. You can do this using the special Transparent Layer brush. This is the only brush that paints in the RGB layer and adds to the floater's visibility mask at a single stroke.

To use the Transparent Layer brush:

1 Choose a brush variant for the type of painting you want to do—for example, any of the **Layer** brush variants from the **New Brushes** folder or the **Feather Tip** variant of the **Airbrush**.

If necessary, you can adjust any of the relevant brush controls.

2 Expand the **Brushes** palette to show the method and subcategory.

3 In the **Method** pop-up, choose **Plug-in**. And in the **Subcategory** pop-up, choose **Transparent Layer**.

For more information on working with brushes, refer to "Painting with Painter's Brushes" on page 41.

4 Create a new transparent floater to paint into. First deselect all floaters, then choose **Objects palette: Floater menu▸ Transparent Layer**. Painter creates a transparent floater that's equal in size to the canvas.

5 If you wan to create a new transparent floater at a limited size (smaller than the canvas), use the **Rectangular Selection** tool to select the size of your transparent floater.

Now choose **Objects palette: Floater menu▸ Transparent Layer**. Painter converts the floater to a transparent layer.

6 Choose your color. You can even use the **Clone Color** feature to take color from another image.

7 You can now paint in the transparent floater.

Floater Visibility Mask

The floater visibility mask is created when you float a selection. The mask defines the area of the RGB layer that is visible.

When working with floater masks, you'll use both the **Floater List** and **Mask List** palettes. You might want to tear off one of them so you can use them side-by-side.

To view an image floater's mask:

1 Select the floater.

2 In the **Mask List**, click the floater's mask eye icon to open it.

In the floater, Painter displays the mask in grayscale.

3 To return to normal display, click the floater mask's eye icon again to shut it.

4 Remember to select the RGB listing in the Mask List when you're done working with the floater's mask.

Editing a Floater's Mask

By modifying a floater's mask, you can change how much of the image is visible. The most useful way to modify a floater mask is with the **Brush** tool. Some image effects are also possible.

Notice that the inside of the sword arm is not masked properly.
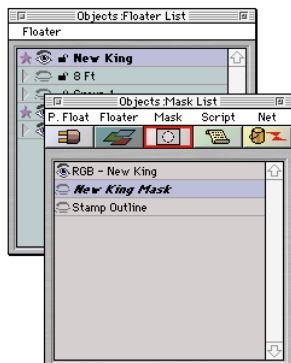
When working with a floater mask, it is more convenient to tear off either the Floater List palette or Mask List palette.
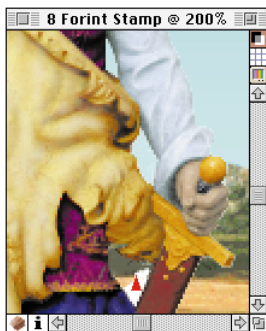
Notice the background imagery showing through. White is used to erase visibility.

By painting with a masking brush in a floater, you change the extent of its mask, revealing or concealing more of the floater RGB layer.

To edit a floater's visibility mask:

1 Select the floater.

2 In the **Mask List**, click the listing for the floater's mask to select it.

You may open the eye to use grayscale display of the mask. Or you can keep the eye shut so you can view the floater's RGB layer while you modify the mask.

3 Use the **Brush** tool to paint in the mask, apply an image effect, feather, or use any of the Mask menu items to modify the mask.

4 When you're done working with the floater's mask, remember to select the RGB listing in the **Mask List**.

Painting in the Floater Visibility Mask

You can use almost any brush to modify the mask. The **Airbrush** variants and other brushes of the Cover method are ideal.

Remember that the floater visibility mask is an 8-bit image, so you use "grayscale paint."

- Painting with black adds to the mask, which makes more of the RGB image visible.

- Painting with white removes from the mask, which conceals more of the RGB image (makes it invisible).

- Painting with an intermediate grayscale value makes that portion of the floater semi-transparent.

Note: The **Layer** brush edits the visibility mask at the same time it applies color to the RGB layer. Refer to "Painting into a Transparent Floater" on page 215.

Feathering a Visibility Mask

You can feather the visibility mask to create soft edges on the floater.

To feather a floater's edge:

1 Choose **Objects palette: Mask menu▸ Feather Mask**. The **Feather Mask** dialog appears.

2 Set the number of pixels to feather by.

Feather creates soft edges.

3 Click **OK**.

How much room you have to feather a floater is determined in the **General Preferences** dialog. Choose **Edit menu▸ Preferences▸ General**. Notice that the **Floater Pre-Feather** is preset to 16 pixels. You can change this default to any number up to 50.

Floater Masking Modes

A floater mask will be in one of three modes: **Disabled**, **Normal**, or **Inverted**. By changing the mode, you change how the floater appears.

To change a floater's mask mode:

1 Select the floater you want to change.

2 Choose **Objects palette: Floater menu▸ Floater Attributes** or double-click the image floater in the Floater List.

3 In the **Floater Attributes** dialog, click the radio button for the **Floater Mask Mode** you want.

This floater and canvas are used in the following examples to illustrate Floater Masking Modes.
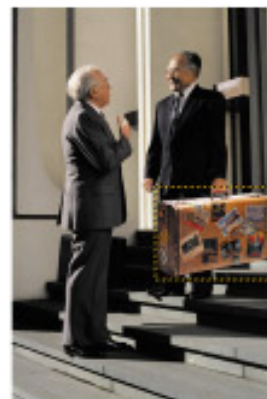
Disabled

With masking **Disabled**, Painter ignores the visibility mask and displays the entire floater rectangle.

Inverted

With the mask **Inverted**, masked regions of the floater rectangle are rendered invisible.

Regions outside the mask are visible.

Normal

An image floater's normal masking mode uses the mask to reveal only the shape of the floating image. The unmasked regions are invisible.

How the Canvas Selection Interacts with a Floater

You can use the canvas selection to conceal or reveal parts of a floater. This feature is available for Image Floaters, Reference Floaters and Plug-in Floaters. It is not allowed for groups or Shapes.

The floater/selection interaction will be in one of three modes: None, Selection Reveals Floater or Selection Conceals Floater. By changing the mode, you can alter the composition.

Note: The attribute for interacting with the selection is contained in the floater, so each floater may use a different interaction mode.

To change the floater/selection interaction:

1 Select the floater you want to change.

2 Choose **Objects palette: Floater menu▶ Floater Attributes**.

3 In the Attributes dialog, click the radio button for the Selection Interaction mode you want.

Selection Interaction:
- ● None
- ○ Selection Reveals Floater
- ○ Selection Conceals Floater

None

The selection has no affect on the floater. This is the default interaction mode.

Selection Interaction:
- ○ None
- ● Selection Reveals Floater
- ○ Selection Conceals Floater

Selection Reveals Floater

The selection reveals the floater. Only regions of the floater that overlap the canvas selection are visible.

Selection Interaction:
- ○ None
- ○ Selection Reveals Floater
- ● Selection Conceals Floater

Selection Conceals Floater

The selection conceals the floater. Only regions of the floater that overlap un-selected regions are visible.

Saving Floaters for Later— The Floaters Portfolio

The **Floaters Portfolio** palette is a convenient place to store floaters you'll want to use again.

To display the Floaters palette: **Choose Objects palette: Floater menu▶ Floaters Portfolio**.

The Floaters Portfolio palette.

To add a floater to the portfolio, with the **Floater Adjuster** tool selected, drag the floater from the image window into the **Floaters Portfolio** palette. As the floater enters the palette, you'll see the selection marquee shrink to icon size.

When you drag a floater to the portfolio, it actually removes it from your image. To leave a copy in your image, press the Option/Alt key, then drag.

When you drop the floater in the palette, Painter will give you an opportunity to rename it. If you haven't already given the floater a descriptive name, do so now.

To use a floater from the palette, simply drag its icon into the image window.

The Floater Portfolio holds only Image Floaters. Shapes, Plug-in Floaters, and Reference Floaters must be converted to enter the portfolio.

You can create your own custom libraries to organize floaters by category. When you're creating a library, keep in mind that the smaller the library, the easier it will be to see its contents at a glance. For more information on working with libraries, refer to .

Working with Reference Floaters

A reference floater is a special kind of image floater. It gets its image information from an external source—a reference image, which may be a standard floater in the current document or a separate file.

The reference floater is a low resolution, stand-in for the original image. Because it is low resolution, a reference floater can be quickly transformed in ways that would otherwise be prohibitively slow.

Working with a reference floater allows you to transform a floater onscreen by dragging its handles. Possible transformations include resizing, rotating, and skewing. Transformations happen immediately.

After transformations, you can convert the reference floater to an image floater. During conversion, Painter refers to the original image to improve the resolution. This makes the image cleaner.

Editing the image—with a brush or effect— is not allowed in a reference floater. When you've finished transforming the floater, you can convert it to an image floater, which you can edit.

Reference floaters (and the transformations they allow) are particularly useful when compositing high resolution images.

Creating a Reference Floater

There are two ways to get a reference floater into a document:

- Convert an image floater to a reference floater.

- Place an image.

To convert an image floater to a reference floater:

1 Select a floater.

2 Choose **Effects menu▸ Orientation▸ Free Transform**. Painter converts the image to a reference floater.

In the **Floater List**, the icon beside a reference floater shows the eight handles.

The reference floater state is just for transformations. If you try to paint in a reference floater, Painter immediately commits the transform and converts the reference to an image floater.

You may also work with a reference floater in terms of a Pyramid data structure. The Pyramid structure enables you to edit at a

low resolution, then have Painter extrapolate your editing script to the high-resolution original.

Information on working with Reference Floaters in a Pyramid structure appears in "Horizontal and Vertical Scaling" on page 221.

To place an image file as a reference floater:

1 If the image you want exists as a separate file, you can use the **Place** command to bring it into the document. You must have a document open to use Place.
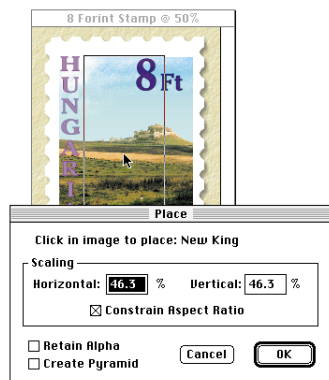
The Place command allows you to place an image that exists as a separate file into your current open document.

Important: While working with a placed image, do not delete, move, or rename the reference original. Painter must be able to refer to the image data in that file.

2 Choose **File menu▶ Place**. A standard **Open** dialog appears allowing you choose an image file.

3 Select an image file and click **Open**. The **Place** dialog appears.

4 When you move the cursor into the image window, a rectangle shows how large the floater will be. This lets you see the scale of the floater in relation to the current document.

5 When you've set the options, you can finish placing the image:

- To place the floater in a particular location, click in the document where you want the image centered.

- To place the floater in the center of the document, click **OK**.

Horizontal and Vertical Scaling

When you place a file, Painter suggests a scale for the image that will fit in the current document. If you want to change the size, enter a different scaling percentage in the Horizontal Scale and Vertical Scale fields.

Constrain Aspect Ratio

When this option is enabled, Painter maintains the proportions of the image. You can disable this option if you want to distort the image.

Retain Alpha

The image you place may carry a mask. If you want to keep the mask, leave this option enabled. When the image is placed, the image mask becomes the floater mask. If you disable this option, Painter discards the mask.

Create Pyramid

Enable this option if you want to create a pyramid data structure. Pyramid structures are files that contain multi-resolution information. When you create a Pyramid file, the file contains several versions of the image at different resolutions. When you place the Pyramid, it will place the appropriate size for the current open file.

Pyramid files work in conjunction with scripting. You can work at a low resolution and then play the script back at a higher resolution. Painter will play back the Pyramid at the appropriate resolution for the current open file.

Transforming a Reference Floater

A selected reference floater has eight handles on its selection rectangle—one on each corner and one on each side. You'll drag these handles to transform the floater.

You may resize, rotate, and slant a reference floater by dragging its handles.

Choose the **Adjuster** tool and select the reference floater you want to manipulate.

Resize

Drag a corner handle in the direction you want to resize.

To maintain proportions, hold down the **Shift** key as you drag.

To resize in one dimension only, drag a side handle.

Resizing a reference floater.

Rotate

Hold down the **Command**/**Ctrl** key and drag a corner handle.

Rotating a reference floater.

Slant (Skew)

Hold down the **Command**/**Ctrl** key and drag a side handle.

Notice the cursor change as you position the floater over a handle.

Slanting or skewing a reference floater.

Set Transform

After creating a reference floater, the **Set Transform** dialog allows you to perform numerical transformations. Set Transform is useful for returning the floater to its original condition.
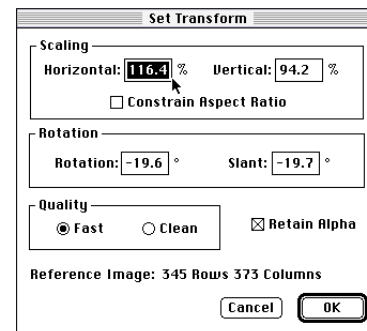
Set Transform allows you to apply a specific set of instructions to a reference floater.

To set transformation options:

1 Select a reference floater.

2 Choose **Effects menu▸ Orientation▸ Set Transform**. Painter opens the Set Transform dialog.

The **Set Transform** features are described below. When you're finished with them, click **OK**. Painter transforms the reference floater accordingly.

Scaling

The **Horizontal** and **Vertical Scaling** values describe the scaling relationship between this floater and its reference original. You can change the scaling by entering new values.

If the scaling is low, 33% for example, and you increase it, Painter refers to the reference original to get more pixel data.

If you want to alter the proportions, disable the **Constrain Aspect Ratio** option. This allows you to apply different scaling factors in the horizontal and vertical dimensions.

Rotation

The original rotation value is 0°. Enter a new value to rotate the reference floater. Positive values rotate the reference floater counter-clockwise. Negative values rotate clockwise.

Slant

The original slant value is 0°. Enter a new value to slant the reference floater.

Retain Alpha

The **Retain Alpha** option is enabled by default. If you want to ignore the mask information, you can disable this option.

Quality

The **Quality** options allow you to choose the level of sampling between the reference floater and the original image.

Fast sets a high sampling ratio, which produces a low resolution reference floater. A low resolution reference floater contains less information, so it can be transformed quickly.

Remember that when you convert a reference floater to an image floater (with **Effects menu▶ Orientation▶ Commit Transform**), Painter re-samples the original reference image to produce the best possible transformed image. This means that you can work fast without sacrificing image quality.

Clean sets the sampling ratio at 1 to 1, which produces a reference floater of the highest possible resolution—up to that of the original. This shows a better image as you work, but takes much longer to calculate transformations.

Reference Image

The number of pixels (Rows and Columns) of the original Reference Image appears at the bottom of the Set Transform window. You might find this information useful.

Converting a Reference Floater to an Image Floater

When you are finished with transformations, you can convert the reference floater back to an image.

If you try to apply an effect or paint on a reference floater, Painter automatically converts it to an image floater.

To return a reference floater to its original resolution:

1 Select the floater you want to convert.

2 Choose **Effects menu▶ Orientation▶ Commit Transform**. Painter converts the reference floater to an image floater. This may take a few moments.

During the conversion, Painter examines the reference original and brings the best pixel data possible to the transformed floater. For this reason, you'll see the image quality improve.

Notice that the floater's icon in the Floater List changes.

When you are finished making transformations, you must convert your reference floater back to an image floater.

Using Floaters to Set Up Image Maps for the WWW

The image map is a WWW feature that allows a client to hyperlink to different locations by clicking on specific areas within an image. In Painter, you can specify a floater as a clickable region.

When you save the image in **GIF** or **JPEG** format, Painter will build a file that describes the clickable regions and the URLs associated with them.

You can assign a URL to the canvas underneath floaters with clickable regions. Choose **File menu**▶ **Get Info** to assign a URL to the canvas.

To set a floater as an image map:

1 Open the image you want to work with.

2 Select the region you want clickable.

3 Float the selection.

4 Open the **Floater List** palette and Trim the floater.

5 Select any floater and choose **Objects palette: Floater menu**▶ **Floater Attributes**. The **Floater Attributes** dialog appears.

At the bottom of the dialog, enable the **WWW URL** option and select rectangle, oval or polygon.

Polygon is only available for Shapes. If you need to, you can create an invisible Shape—without a fill or a stroke on top of your image floater. Group the invisible Shape to your image floater so you can move it with the hot spot intact.

6 In the **Notes** field, enter the hypertext reference and URL. For example, http://www.fractal.com.

7 Close the **Floater Attributes** dialog.

8 When you save the document as either a **GIF** or **JPEG** file, Painter will automatically write out a text-based "map" file that defines the hotlink areas.
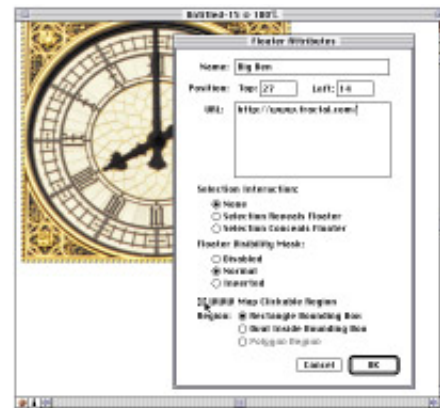
Set your www URL in the Floater Attributes dialog.

For more information about Web authoring and Painter, refer to Designing Web Pages in the Painter 5 Tutorial.

Access Plug-in Floaters from the P. Float List

Some Plug-in Floaters alter the shape and colors within an existing Floater

Other Plug-in Floaters create new imagery in a new Floater

A third type of Plug-in Floater creates a special kind of Floater which affects all the pixels underneath

Press the Apply button to apply the Plug-in Floater Effect
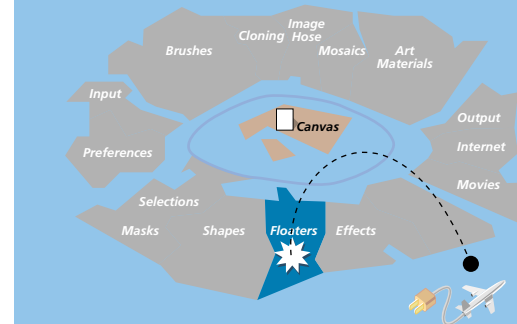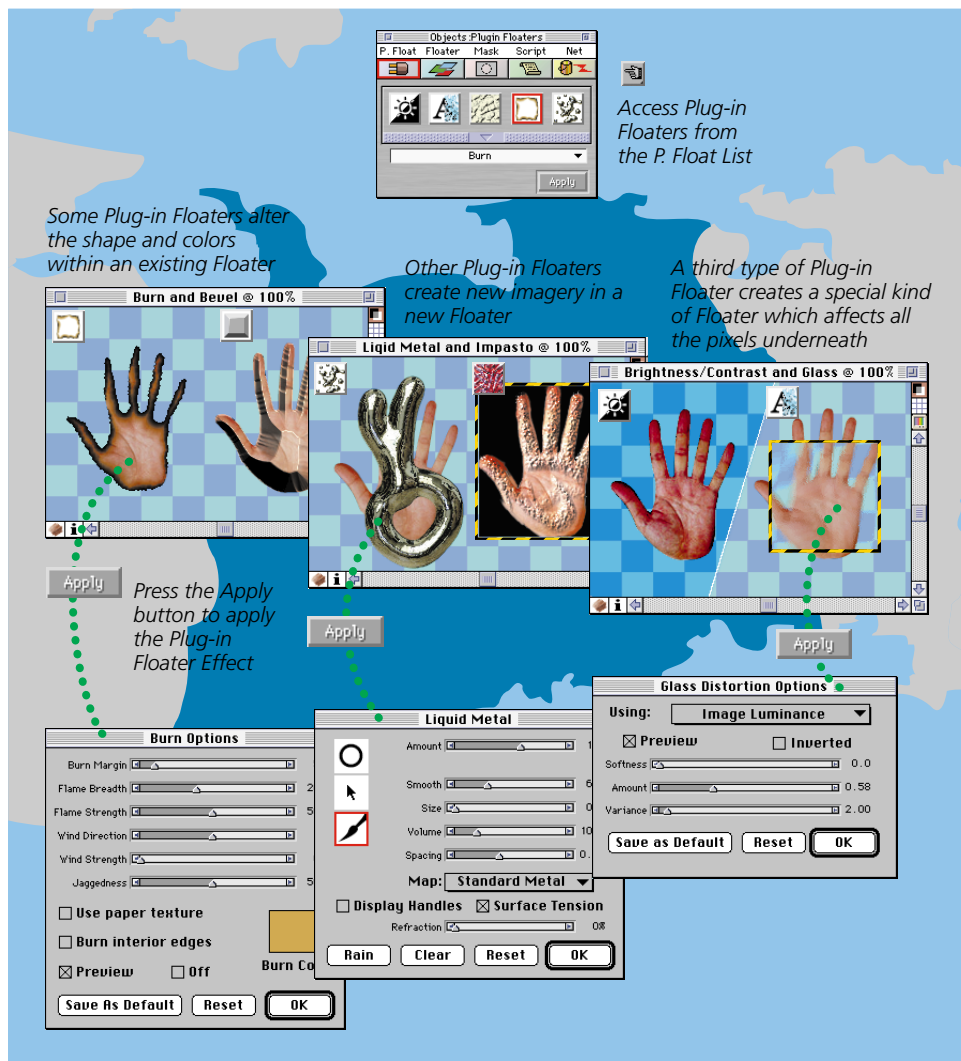
12

Plug-in Floaters

Understanding Plug-in Floaters

Painter 5 provides a Plug-in architecture for floating objects. This design enables powerful and dynamic effects and tools that were previously impossible.

"Plug-in Floater" refers to a category of floating objects. The function and behavior of each Plug-in floater may be unique and diverse. Generally, a Plug-in floater applies an effect that can be changed, moved and reapplied without altering the original

source material. Because you can modify the effect any number of times without damaging the source image, Plug-in Floaters are also called "Dynamic floaters"

The behavior a Plug-in floater falls into three major categories—creates a new, unique floater, alters an existing floater or makes an adjustment of the underlying imagery (what it's floating over).
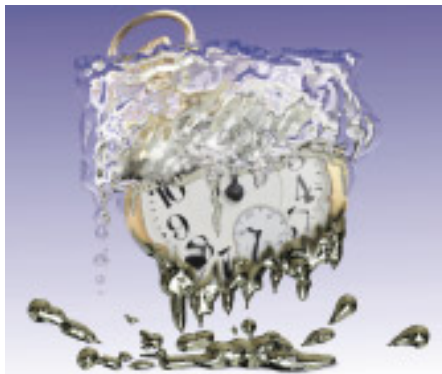
The Liquid Metal Plug-in Floater lets you paint with either metal or liquid.

When you save the file in RIF format, the Plug-in floater retains its dynamic nature. Any time you open the file, you can adjust the effect.

Each Plug-in floater brings new capabilities for manipulating your images. Painter 5 comes with several cool Plug-in floaters, and you can expect Fractal Design to develop new Plug-in floaters in the future.

You can add Plug-in floaters by copying files to your Painter folder. The next time you launch Painter, the program loads your new Plug-in Floater effects.

Fractal Design encourages third-parties to develop Plug-in floaters. If you're interested in creating new Plug-in floaters for Painter, visit the Fractal Design Web site for more information.

Using Plug-in Floaters

The **Objects: P. Float** (Plug-in floater) **palette** holds the Plug-in Floaters currently loaded into Painter.

To display the **P. Float** palette, display the Objects palette, then click the **P. Float** icon. If you prefer to see the **Floater List** palette at the same time, you can tear off the **P. Float** palette.
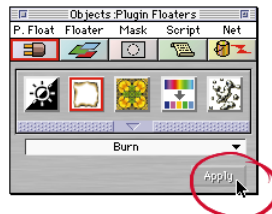
Choose and apply Plug-in Floaters from the Objects: P. Float palette.

During start-up, Painter scans its own directory (folder) and its sub-levels. The program loads any floater plug-ins it finds.

Creating a Plug-in Floater

The steps for creating a Plug-in Floater vary slightly for the different types of Plug-in Floaters.

Details on creating and working with each Plug-in Floater appear "Working with the Plug-in Floater" on page 227.

To apply a Plug-in Floater:

1 For a Plug-in Floater that requires source imagery—Burn, Tear and Bevel World, for example—select an image floater or make a canvas selection.

2 In the **P. Float** palette, click the icon of the Plug-in Floater you want. Open the drawer to see more icons.

3 When the drawer is closed, you may also choose a Plug-in Floater by name from the pop-up.

4 Choose **Objects palette: P. Float menu ▶ Apply**. When the drawer is closed, you may also click the **Apply** button.
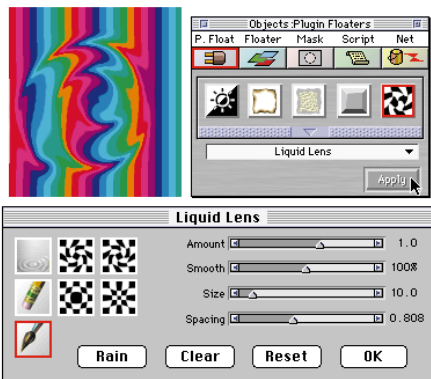
Choose a Plug-in Floater and click the Apply button.

If you drag a Plug-in Floater icon into a custom palette, you can click the icon to select and apply it at once.

When you apply the Plug-in Floater, it opens a dialog with the tools and options for controlling the effect. After you choose options to set the effect you want, you can close the dialog.

Note: Once you click **Apply**, you can't cancel the operation. If you decide you don't want the Plug-in Floater, after you click **OK** in the dialog, you can choose `Edit menu‣ Undo` or press the **Delete**/**Backspace** key to remove it.

Reverting a Plug-in Floater

The Plug-in Floaters that modify a source image floater may be restored to their original condition.

This feature is only available for Plug-in Floaters that modify an image floater— Burn, Tear and Bevel World.

To revert a Plug-in Floater:

1 Select the floater in the document or in the **Floater List**.

2 Choose `Objects palette: P. Float menu‣ Revert to Original`.

Painter extracts the original image floater and discards the Plug-in.

Working with the Plug-in Floater

Like all floating objects, Plug-in Floaters appear in the **Floater List** palette, where they're identified by the plug icon.

You can select, move, group, hide/show, lock, change their display order, opacity and composite method as you do other floaters. For information on these features, refer to Chapter 11, "Floaters."

To change a Plug-in Floater's options:

1 Select the floater you want to change— either by clicking on it with the **Adjuster** tool or by clicking its listing in the **Floater List** palette.

At any time, you can open the Plug-in Floater's options dialog and change its settings.

2 Choose `Objects palette: P. Float menu‣ Options`. You may also double-click the Plug-in Floater's listing in the **Floater List** to select it and open its options immediately.

The content of the options dialog depends on the type of Plug-in Floater.

3 When you are finished setting options, close the dialog.

Committing Plug-in Floaters

The Plug-in floater is dynamic. That means that, at any time, you can open the options dialog and change its parameters. At some point, though, you may want to finalize the effect and make the result a standard image floater. This will enable you to work with the floating image in ways not possible when it's held in a Plug-in floater.

Committing the Plug-in Floater captures the floater's current appearance to a standard image floater.

You may explicitly choose to commit a Plug-in floater to an image floater. Or if you attempt any operation not permitted in a Plug-in Floater, like applying an effect, Painter will automatically convert it for you.

To commit a Plug-in Floater explicitly:

1 Select the floater you want to change—either by clicking on it with the **Adjuster** tool or by clicking its listing in the **Floater List** palette.

2 Choose **Objects palette: P**. **Float menu▸ Commit**.

3 Click **OK** to proceed with the conversion.

Committing a Plug-in Floater Automatically

Painter must commit the Plug-in effect if you attempt any of the following:

- Paint into a Plug-in floater (with the exception of Impasto).

- Apply an Effect to a Plug-in floater.

- Apply a Plug-in floater to a Plug-in floater.

- Drop the Plug-in Floater.

- Collapse a group that contains a Plug-in Floater.

Plug-in Floaters are committed when you save in any format other than RIF.

About the Plug-in Floaters

Brightness/Contrast

The Brightness/Contrast Plug-in Floater creates a floating layer that applies Brightness/Contrast adjustment to the imagery beneath it.

To create a Brightness/Contrast Plug-in Floater:

1 In the **Objects: P**. **Float palette**, click the **Brightness/Contrast** icon or choose **Brightness/Contrast** from the pop-up.

2 Click **Apply**. You may also choose **Objects palette: P**. **Float menu▸ Apply**.

Painter creates a floater (equal in size to the canvas) and opens the **Brightness/Contrast** Plug-in Floater control dialog.

To create a Brightness/Contrast floater of limited size: Create the Plug-in Floater as described here. Close the dialog, then choose **Objects palette: Floater menu▸ Floater Size**. Enter negative numbers (e.g., -20) to cut the floater down to the size you want. You can now open the dialog and change the settings.

3 Drag the sliders to adjust image contrast and brightness.

Click the **Reset** button to reset the options to the original defaults.
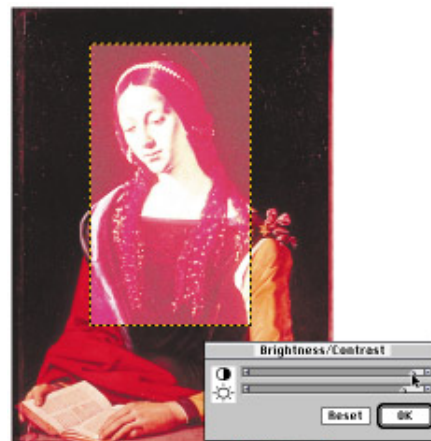
The Brightness/Contrast Plug-in Floater affects all imagery beneath the floater.

4 When the effect is as you like it, click **OK**.

Note: You can use the **Controls palette: Adjuster tool** to reduce the **Opacity**—and therefore, the effect—of the Brightness/Contrast Plug-in Floater.

If you later decide to change the settings, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu▸ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the settings.

When you Commit a Brightness/Contrast Plug-in Floater, the floater "captures" the imagery beneath it with the current Brightness/Contrast settings.

Burn

The Burn Plug-in Floater applies an edge burn effect to the selected image floater. You can set the amount and character of the burn with sliders.

To burn a floater:

1 Select the image floater that you want to burn.

Instead of choosing a floater, you may create a canvas selection. Painter will float a copy of it automatically when you apply the Burn.

2 In the **Objects: P. Float palette**, click the **Burn** icon or choose **Burn** from the pop-up.

3 Click **Apply**. You may also choose **Objects palette: P. Float menu▸ Apply**. The **Burn** Plug-in Floater control dialog appears.

4 Drag the sliders and set controls to adjust the burn effect. The burn settings are described below. When the effect is as you like it, click **OK**

Different burn settings produce diverse results.

Burn Margin describes the width of the burn effect in relation to the floater's size.

Flame Breadth describes the width of the scorched region. The burn color appears in the scorch.

Flame Strength describes how much of the floater is consumed by the burn. Increasing Flame Strength shrinks the floater.

Wind Direction changes the burn amount for different sides of the floater.

Wind Strength determines how much change the Wind Direction control imparts.

Jaggedness describes the amount of irregularity in burnt edges.

Use paper texture lets you use the current paper to vary dye concentration in the scorch region.

Burn Interiors lets you burn interior edges as well. Disable this option to protect the interior edges.

Burn Color displays the color used in the scorch area. You can change the color if you like. Click the color chip and use the color picker to select a color.

If you don't like the settings and want to start over from the default, click **Reset**.

If you get the settings just right, you might want save them as the default. Click **Save As Default**. At a later date, you can click **Reset** to return to your saved settings.

If you want to stop Painter from updating your changes to the image, disable the **Preview** option.

If you want to disable the effect on the image, enable the **Off** option. You can return later and turn the burn back on.

To remove the effect completely, choose **Objects palette: P. Float menu▶ Revert to Original**. Once you revert, it becomes an image floater and is no longer dynamic (adjustable).

If you later decide to change the settings, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu▶ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the settings.

When you Commit a Burn Plug-in Floater, the floater becomes an image floater with the current burn effect.

Tear

The Tear Plug-in Floater applies a torn paper effect to the edge of a selected image floater.

To tear a floater:

1 Select the image floater that you want to tear.

Instead of choosing a floater, you may create a canvas selection. Painter will float a copy of it automatically when you apply the Tear.

2 Choose a nice, rough paper texture to create a better tear.

3 In the **Objects: P. Float palette**, click the **Tear** icon or choose **Tear** from the pop-up.

4 Click **Apply**. You may also choose **Objects palette: P. Float menu▶ Apply**. The **Tear Options** dialog appears.

5 Drag the sliders and set controls to adjust the tearing effect. The settings are described below.

Margin describes the width of the tear effect from the edge of the floater.

Strength describes how much of the floater is torn away.

Jaggedness describes the amount of irregularity in torn edges.

Tear Color shows the color used at the edge of the tear. You can change the color if you like. Click the color chip and use the color picker to select a color.

Tear Interior edges lets you tear interior edges as well. Disable this option to protect interior edges.
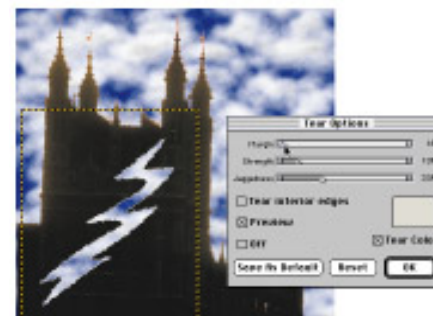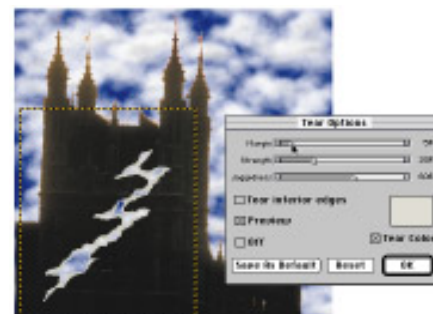
You can tear a little or a lot.

6 If you don't like the settings and want to start over from the default, click **Reset**.

If you get the settings just right, you might want to save them as the default. Click **Save As Default**. At a later date, you can click **Reset** to return to your saved settings.

If you want to stop Painter from updating your changes to the image, disable the **Preview** option.

If you want to disable the effect on the image, enable the **Off** option. You can return later and turn the tear back on.

7 When the effect is as you like it, click **OK**.

To remove the effect completely, choose **Objects palette: P. Float menu▶ Revert to Original**. This converts it to an Image Floater and the Plug-in Floater options are no longer available.

If you later decide to change the settings, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu▶ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the settings.

Bevel World

The Bevel World Plug-in Floater applies 3D bevel effects to a selected image floater.

You might want to create a 3D button with text on it. To do this, use Bevel World to create the background button first. Then create your text floating over the button. Group the text and button together, then Collapse the floater group.

To bevel a floater:

1 Select the image floater that you want to bevel.

Instead of choosing a floater, you may create a canvas selection. Painter will float it automatically when you apply Bevel World.

2 In the **Objects: P. Float palette**, click the **Bevel World** icon or choose **Bevel World** from the pop-up.

3 Click **Apply**. You may also choose **Objects palette: P. Float menu▶ Apply**. The **Bevel World** options dialog appears.

4 Drag the sliders and set controls to adjust the bevel effect. The settings are described below. When the effect is as you like it, click **OK**
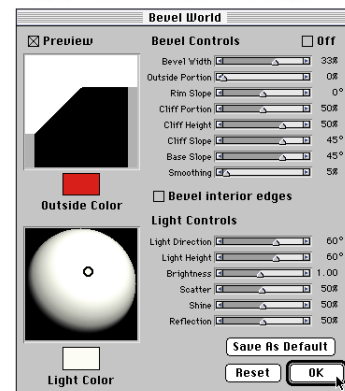
The Bevel World dialog has controls for the 3D bevel shape and lighting.

Bevel Controls

The **Preview** shows a cross-section of the bevel.

Bevel Width describes the width of the bevel in relation to the floater diameter.

Outside Portion controls where the bevel is in relation to the perimeter of the floater (border of the visibility mask). Increasing
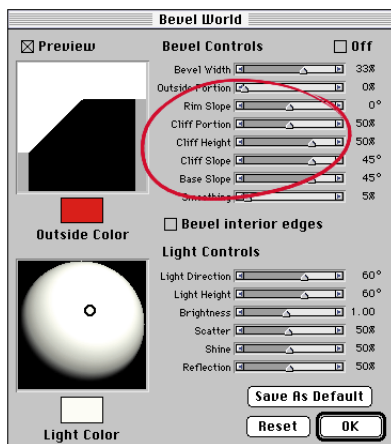
Bevel controls cover a wide range of features.

Outside Portion moves the bevel out from the original floater perimeter, increasing the visibility mask.

Outside Color determines the portion of the bevel outside of the floater's initial perimeter. This applies only when Outside Portion is above zero. You can click the Outside Color chip and use the color picker to set the color.

Rim Slope describes the angle of the rim (innermost portion) of the bevel.

Cliff Portion describes the horizontal distance between the base and the rim.

Cliff Height describes the vertical distance between the base level and rim level.
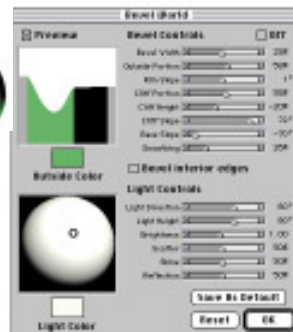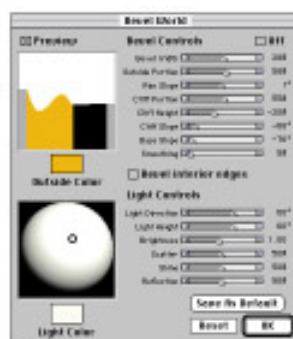
The bevel is almost entirely outside the floater.

Cliff Slope describes the angle of the cliff (middle portion) of the bevel.

Base Slope describes the angle of the base (outermost portion) of the bevel.

Smoothing controls the roundness of the transitions between base, cliff and rim as well as the sharpness of the resulting ridges.

An infinite variety of bevel profiles is possible.

If you don't want bevels on the interior edges, disable the "**Bevel Interior edges**" option.

You might want to turn off the **Preview** and make changes based just on the cross-section. When you think the bevel is right, enable the Preview again.

If you want to disable the bevel on the floater, enable the **Off** option. You can return later and turn the bevel back on.

To remove the effect completely, close the dialog and choose **Objects palette: P**. **Float menu▶ Revert to Original**.

Light Controls

Lighting changes can make a huge difference in the 3D appearance of the bevel.
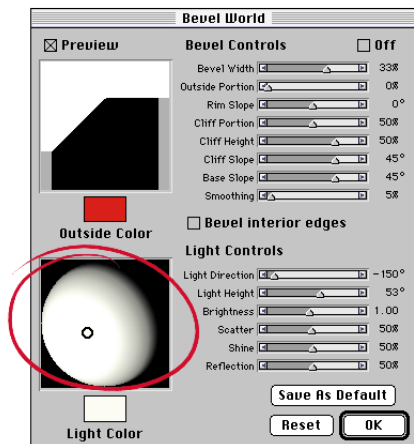
The lighting preview sphere shows all possible surface angles and how the light illuminates them.

To change the light's angle, drag on the preview sphere.

You may also change the light's position/ angle by dragging the **Light Direction** and **Light Height** sliders. With height at

maximum, the light shines straight down on the floater. When Light Height is less than maximum, the Direction slider rotates the light around the center.

To choose a color for the light, click the **Light Color** chip and use the color picker to set a color.

Brightness controls the light's intensity.

Scatter adjusts the spread of the light's shine over the surface.

Shine describes the amount of specularity (highlights).

Reflection maps the clone source onto the surface at a variable percentage. A discussion of Reflection Maps can be found in .

If you later decide to change the settings, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P**. **Float menu▶ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the settings.
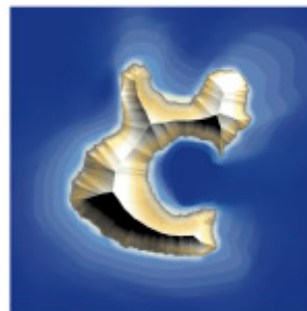
Bevel World has more uses than 3D buttons for Web pages. This island was created by applying Burn to a floater, then using Bevel World to raise the mountains.

Equalize

The **Equalize** Plug-in Floater creates a floater that improves contrast in underlying imagery. It does this by adjusting black and white points and distributing the brightness levels throughout the entire range of available levels.

The Equalize Plug-in Floater creates a histogram showing the number of pixels for each brightness level value. Equalize allows gamma adjustment, which lightens or darkens an image without changing highlights or shadows.

To create an Equalize Plug-in Floater:

❶ In the **Objects: P**. **Float palette**, click the **Equalize** icon or choose **Equalize** from the pop-up.

2 Click **Apply**. You may also choose **Objects palette: P. Float menu▸ Apply**.

Painter creates a floater (equal in size to the canvas) and displays the **Equalize** Plug-in Floater control dialog.

To create an Equalize floater of limited size: Create the Plug-in Floater as described here. Close the dialog, then choose **Objects palette: Floater menu▸ Floater Size**. Enter negative numbers (e.g. -20) to cut the floater down to the size you want. You can now open the dialog and change the settings.

3 You can adjust contrast manually by dragging the small black and white point markers under the histogram.

Any values in the image located to the right of the white marker become white; any values to the left of the black marker become black.

4 You can drag the gamma slider to adjust only the midtones of an image and leave the white and black areas untouched.
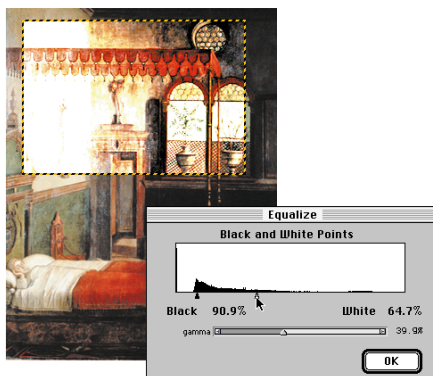
The Equalize Plug-in Floater affects underlying imagery.

You can use the **Controls palette: Adjuster tool** to reduce the opacity of the Equalize Plug-in Floater.

If you later decide to change the settings, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu▸ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the settings.

Glass Distortion

The Glass Distortion Plug-in Floater creates a floating layer that applies Glass Distortion to the imagery beneath it. You can move the floater in the document to view the distortion over different imagery.

For best results, you should have interesting imagery beneath the Glass Distortion Plug-in Floater.

To create a Glass Distortion Plug-in Floater:

1 Create an image floater the size you want for the glass distortion. Make sure this floater is selected.

2 In the **Objects: P. Float palette**, click the **Glass Distortion** icon or choose **Glass Distortion** from the pop-up.

3 Click **Apply**. You may also choose **Objects palette: P. Float menu▸ Apply**.

Painter converts the floater to a glass distortion lens and opens the **Glass Distortion** Plug-in Floater dialog.

If you don't select a floater before applying Glass Distortion, Painter creates a small floater for you. You can close the dialog and change the size of the floater with the **Objects palette: Floater menu▸ Floater Size** command. Then open the floater's options dialog and adjust the effect.

❹ Use the controls in the dialog to specify the Glass Distortion. The features are described below. When the effect is as you like it, click **OK**.

Remember, you can move the Glass Distortion floater to different regions of the document to distort other imagery.
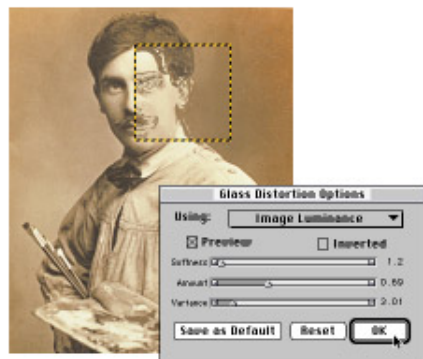
The Glass Distortion Plug-in Floater dialog.

The **Using** pop-up lets you specify the basic information the displacement map begins with. The amount of displacement depends on the value assigned to the image pixels from the Using source.

Paper Grain uses the selected paper texture. Paper texture is good for creating the pebbled glass effect. Unless you want frosted glass, you'll probably want to increase the scale of the paper.

Current Mask uses the currently selected user mask. This is a good choice for a controlled distortion map.

Image Luminance uses the current document's luminance.

Original Luminance uses the clone source's luminance.

If you want to work with an inversion of the "Using" information, click the **Inverted** check box.

Softness controls the transitions between displaced colors. Increasing softness creates more intermediate steps, which produces a smoother distortion. If you experience aliasing in a glass distortion, try increasing Softness.

Amount controls the degree of displacement. Increasing the Amount distorts your image more.

The Glass Distortion Plug-in Floater on the left uses Paper Grain. The Glass Distortion floater on the right uses Image Luminance.

Variance creates multiple variations in the neighborhood of the displacement. The result of increasing variance depends on the type of image and other settings.

Note: You can use the **Controls: Adjuster palette** to reduce the opacity—and hence, the distortion strength—of the Glass Distortion Plug-in Floater.

If you later decide to change the settings, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu▶ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the settings.

When you Commit a Glass Distortion Plug-in Floater, the floater "captures" the imagery beneath it with the current distortion settings.

Kaleidoscope

The Kaleidoscope Plug-in Floater creates a floater that produces kaleidoscope effects from the imagery it floats over. You can move the floater in the document to see the effect on different imagery.

For best results, you should have interesting imagery beneath the Kaleidoscope Plug-in Floater.

The traditional kaleidoscope is a hollow tube with a set of mirrors and colored chips at one end. You peer into the other end and enjoy the highly symmetrical patterns the mirrors create from the colored chips.

❶ In the **Objects: P. Float palette**, click the **Kaleidoscope** icon or choose **Kaleidoscope** from the pop-up.

❷ Click **Apply**. You may also choose **Objects palette: P. Float menu▶ Apply**.

Painter opens the **Kaleidoscope** dialog where you can set the size floater to create. Kaleidoscopes must be square.

❸ When you click **OK**, Painter creates the Kaleidoscope floater.

Drag the Kaleidoscope floater to different areas for new effects.

Try using the arrow keys to see the Kaleidoscope animate.

When you Commit a Kaleidoscope Plug-in Floater, the floater "captures" the current Kaleidoscope display into an image floater.

Tip: Kaleidoscopes make great patterns. Move the Kaleidoscope Plug-in Floater until it displays imagery you like. Commit the Kaleidoscope. Copy the image floater, then choose **Edit menu▶ Paste▶ Into New Image**. Select All, then you can capture the pattern. For more information on creating and using patterns, refer to "Using Patterns: The Pattern Palette" on page 142.

Liquid Lens

Liquid Lens creates a floater where you can non-destructively distort and smear the underlying imagery. You can create "fun house mirror" effects, melting images and more.

For best results, you should have interesting imagery beneath the Liquid Lens Plug-in Floater.

To create a Liquid Lens Plug-in Floater:

1 Deselect all floaters.

2 In the **Objects: P. Float palette**, click the **Liquid Lens** icon or choose **Liquid Lens** from the pop-up.

3 Click **Apply**. You may also choose **Objects palette: P. Float menu▶ Apply**.

Painter creates a floater (equal in size to the canvas) and opens the **Liquid Lens** Plug-in Floater control dialog.

4 Use the **Liquid Lens** dialog to create distortion effects. The features are described below. When you're done, click **OK**.

If you later decide to change the distortions, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu▶ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the effect.

Distorting with the Liquid Lens

You'll use the Liquid Lens by setting sliders to control the effect, choosing a tool, then dragging in the floater to create distortion. You can change slider settings or tools, then drag again for different results. The Eraser tool lets you remove distortion.

Liquid Lens Controls

The **Amount** slider controls the degree of distortion applied. With the slider close to zero, you create minimal distortion. Negative values create distortion counter to the stroke direction. This breaks up the image more.

The **Smooth** slider changes the blending between the distortion stroke and the neighborhood. Higher values make a gentle transition to the distortion. Low settings make abrupt edges to the distortion region.

The **Size** slider changes the diameter of the distortion tool and the size of rain.

Spacing slider changes the distance between distortion dabs.

If you want to return the sliders to their defaults, click **Reset**.

If you don't like the results and you want to start again, Click the **Clear** button.
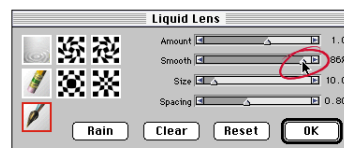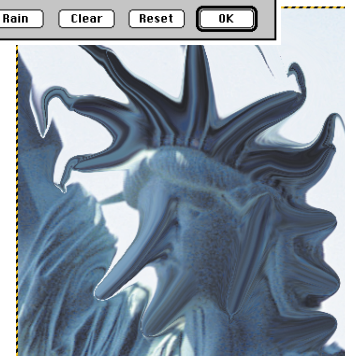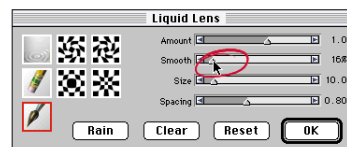
Low Smooth settings make abrupt distortions. Higher Smooth settings let distortions transition smoothly into other areas.
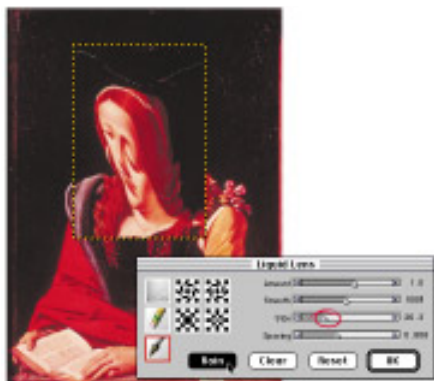
Samples of small and large size distortions.

Low spacing makes a smooth, continuous stroke. High spacing lets the dabs appear individually.

Applying Distortion in the Floater

You can apply distortion with the Circle, Brush, Right Twirl, Left Twirl, Bulge or Pinch tools. These tools function similarly, but apply different distortion effects.

Choose the tool you want, set the sliders, then stroke in the document to create distortion.

The Circle

The Circle tool creates circles of distortion. Drag in the direction you want the distortion to move.
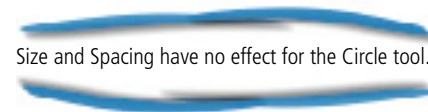
Size and Spacing have no effect for the Circle tool.

The Brush

The Brush distorts in the direction you drag.

Right Twirl

Right Twirl distorts in clockwise spirals.

Left Twirl

Left Twirl distorts in counter-clockwise spirals.

Bulge

Bulge distorts outward, pushing imagery out.

Pinch

Pinch distorts inward, drawing imagery closer.

Rain

The Rain command scatters distortion droplets in the floater. Raindrops distort downward, melting the image.

To use Rain:

1 Set the sliders to describe the distortion you want.

2 Click the **Rain** button. Painter scatters distortion droplets in the floater.

3 Click anywhere to stop the rain.

Clear

Click the **Clear** button to start over.

Reset

Click the **Reset** button to reset the options to the original defaults.

If **Smooth** and **Size** are very high, the rain might continue for a moment after you click.

Rain melts the image.

Erasing Distortion

Undo features are not available when working with the Liquid Lens. Use the Liquid Lens Eraser tool to clear distortion from an area.

To erase distortion:

1 Choose the **Eraser**.

2 Set the sliders for **Size**, **Spacing** and **Smooth** to describe the type of erasing you want. Higher Smooth settings create softer transitions from the erasure to the remaining distortion.

3 Drag in the document to erase the distortion. The original underlying imagery returns.

Eraser

Remove distortion with the Eraser tool.

To erase the distortion completely:

If you don't like the distortions and you want to start again, Click the **Clear** button.

If you move the Liquid Lens floater, the distortion effect travels to the new imagery it moves over.

Liquid Metal

The Liquid Metal Plug-in Floater lets you paint with liquid and metal in a floater. You can apply droplets of water that distort the underlying image through refraction.You can also create globs of shiny metal that flow together and move like real mercury. A slider (Refraction) sets the difference between water and metal, so you can achieve intermediate effects.

This text uses the term "metal" to refer to the media applied—even if the settings turn the effect more toward water.

The Liquid Metal Plug-In floater creates either liquid metal or translucent, refractive liquid.

To create a Liquid Metal Plug-in Floater:

1 Deselect all floaters.

2 In the **Objects: P. Float** palette, click the **Liquid Metal** icon or choose **Liquid Metal** from the pop-up.

3 Click **Apply**. You may also choose **Objects palette: P. Float menu▶ Apply**.

Painter creates a floater (equal in size to the canvas) and opens the **Liquid Metal** Plug-in Floater control dialog.

4 When you are finished creating metal, click **OK**.

If you later decide to change the metal, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu▶ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the metal.

To create negative metal:

Press **Option**/**Alt** when drawing with the **Circle** or **Brush** tool. You will create holes in your metal. As you drag through positive pools, the negative metal will divide and separate the existing metal.

Applying Metal

You can apply metal with the Metal **Brush** tool, **Circle** tool or with the **Rain** button.

Undo features are not available when working with metal. You can press Delete or Backspace to remove the last metal applied. For further removal, refer to .

Brush

The Brush is the default applicator. Stroke in the document window to paint with metal.

Drag to create strokes of metal.

To adjust the size of the brush, or drops of rain:

1 Chose the **Metal Selector** tool and click outside the droplets to deselect all.

The Liquid Metal Selector tool.

2 Change the **Size** slider to the desired value.

When you begin to paint, you will see the change in size.

Circles

Click the **Circle** tool to select it. Drag in the document to create circles of metal.

Create circles of metal.

Rain

Click the **Rain** button. Painter scatters droplets in the floater. Click anywhere to stop the rain.

Metal raindrops fall randomly.

Clear

Click the **Clear** button to remove all droplets and start over.

Reset

Click the **Reset** button to reset the options to the original defaults.

Choosing the Type of Metal

The commands pop-up offers several metal types to choose from: Standard Metal, Chrome 1, Chrome 2, Interior and Clone Source. The type is global and dynamic: The type applies to the entire floater, and you can apply some metal, then change the type.
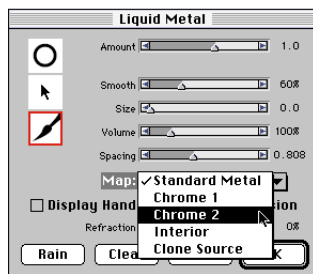
Choose the type of metal you want.

If you want to paint with translucent liquid, increase the **Refraction** slider. As Refraction nears 100%, the metal becomes transparent. The droplets look like a simple liquid—oil or water.

Importing an Environment

Metal is highly reflective. You can customize the look by choosing your own reflection map to describe the environment.

To import an environment:

1 Specify a clone source or load the imagery you want for the environment as the current pattern.

2 Choose **Map pop-up▶ Clone Source**. Painter loads the current Pattern as the reflection environment.

The same lump of metal changes appearance in a different environment.

Metal Properties

The **Amount** slider controls the emphasis of the metal effect (from the Refraction slider) for all droplets in the floater. The extreme left and extreme right are the inverse of each other.

The **Amount** setting applies to all droplets in the floater. To create water effects, set the Amount to -0.5. This will make the droplets magnify the imagery underneath them.
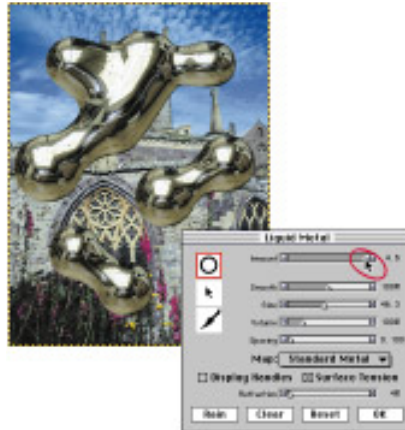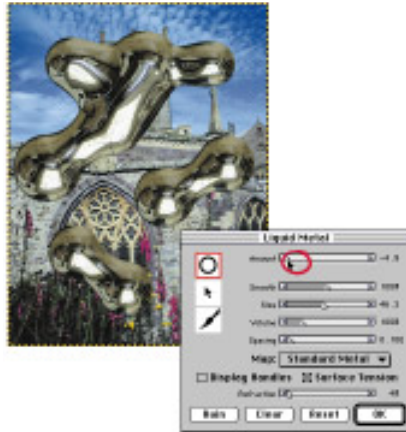
Reflection or Refraction invert when you move the Amount slider to either extreme.

The **Smooth** slider changes the perimeter range. The perimeter range determines the droplet's tendency to "join" its neighbors.

The **Smooth** slider applies to all selected droplets and new droplets you create.

The **Size** slider changes the diameter of the selected droplets.

The **Size** slider applies to all selected droplets and new droplets you create with the Metal Brush or Rain.

The **Volume** slider adjusts the visibility threshold in relation to the perimeter range.

The **Volume** slider applies to all selected droplets and new droplets you create.

The **Spacing** slider adjusts the spacing between droplets in strokes you create with the Metal Brush.
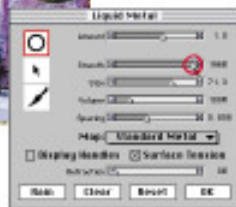
Low Smooth settings keep droplets distinct. Higher Smooth settings make the droplets flow together.

Increasing Volume beyond 100% extends visibility beyond the droplet circle into the perimeter range. Decreasing Volume below 100% shrinks the visible portion of the droplet, "drying it up."
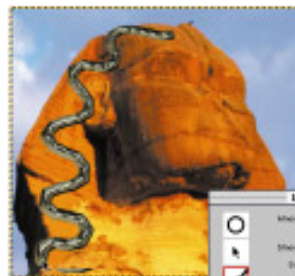
A stroke with low spacing—the droplets flow together. A stroke with high spacing—each droplet is distinct.

The **Refraction** slider controls droplet appearance. The slider represents a scale between reflection and refraction.
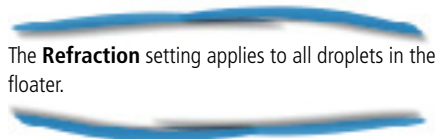
The **Refraction** setting applies to all droplets in the floater.
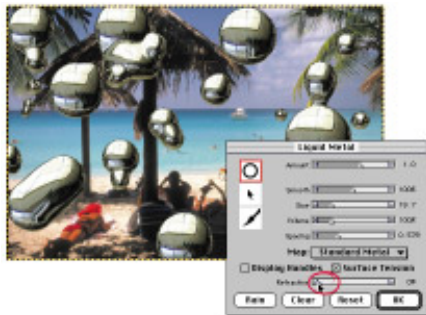
Low refraction means high reflection. High refraction creates translucent, refractive liquid.

The **Surface Tension** option makes the droplets appear more round and three dimensional.

Working with Metal

A stroke of metal is made up of a series of discrete droplets. You can select one or several droplets and move them or change their properties. Refer to "Metal Properties" on page 243 for which sliders settings apply to selected droplets.

Display Handles

The "handles" show the droplet's circle and center point. Showing the handles on the droplets isn't necessary for selecting them, but it can make your work easier.

To show the handles, enable the **Display Handles** option in the Liquid Metal dialog.

Selecting and Moving Metal Droplets

The droplets applied in the last stroke are automatically selected. Each new stroke deselects the droplets of the previous one. You can use the Metal Selector tool to select one or a group of droplets.

To select metal droplets:

1 Choose the **Metal Selector** tool.

2 Drag across the droplets you want to select. You can click the center point handle of an individual droplet to select it. When handles are not displayed, you can click anywhere on the droplet to select it.

Hold down the **Shift** key to add to (or subtract from) the selection.
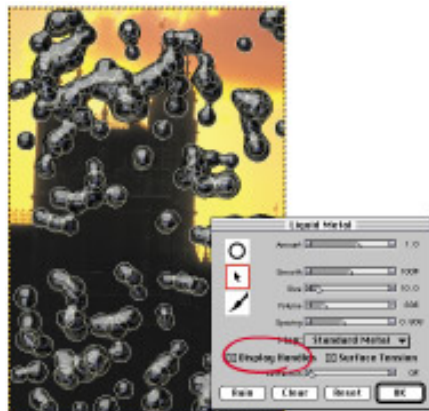
When you "Display Handles," you can see the droplet circles and center points.

When a droplet is selected, the center point handle is displayed solid.

Drag over the droplets you want to select.

To move metal:

Drag the center of one of the droplets to move the selected group.

Hold down the **Option**/**Alt** key to create negative metal.

Notice how the droplets seek to join other droplets they encounter. You may control this tendency with the Smoothness slider.
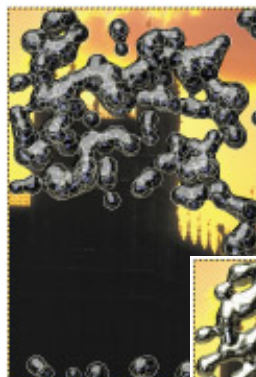
You can drag selected metal droplets.

Getting Rid of Metal

Undo features are not available when working with metal. You can press **Delete**/**Backspace** to remove the last metal applied.

- You can remove any metal by selecting it (with the **Metal Selector** tool), then pressing **Delete**/**Backspace**.

- To remove all metal in the floater so you can start again, click the **Clear** button.

Posterize

The Posterize Plug-in Floater creates a floating layer that reduces the number of color levels in the imagery it floats over.

To create a Posterize Plug-in Floater:

1 In the **Objects: P. Float palette**, click the **Posterize** icon or choose **Posterize** from the pop-up.

2 Click **Apply**. You may also choose **Objects palette: P. Float menu▸ Apply**.

Painter creates a floater (equal in size to the canvas) and opens the **Posterize** Plug-in Floater control dialog.

To create a Posterize floater of limited size: Create the Plug-in Floater as described here. Close the dialog, then choose **Objects palette: Floater menu▸ Floater Size**. Enter negative numbers (e.g. -20) to cut the floater down to the size you want. You can now open the dialog and change the number of levels.

3 Enter the number of color levels you want. The value applies to each color channel—red, green and blue.
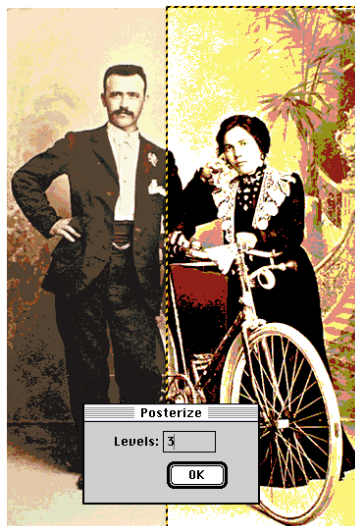
A Posterize Plug-in Floater modifies the right half of this image.

4 When the effect is as you like it, click **OK**.

If you later decide to change the number of levels, you can. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu▸ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the number of levels.

When you Commit a Posterize Plug-in Floater, the floater "captures" the imagery beneath it with the current number of Posterize levels.

Impasto

The Impasto Plug-in Floater lets you paint with textured brush strokes. The texture strokes appear three-dimensional, giving them the illusion of thick oil paints.

The Impasto Plug-in Floater has two layers—the color layer and the depth layer. Impasto uses the depth layer and lighting to creates texture in the color layer.

Because Impasto is in a floater, Tracing Paper is not available.

Impasto creates wonderful, textured paintings.

To create an Impasto Plug-in Floater:

1 Choose the brush variant you want to use. You can paint with almost any brush variant in Impasto. Brushes that leave bristle striations are particularly nice.

2 Prepare your Impasto painting area.

- If you want to paint using existing imagery, select and float that image.

- If you want to work in a limited area, use the **Rectangular Selection** tool to select an area.

- If you want to paint from scratch in a canvas-sized floater, deselect all floaters.

In the **Objects: P. Float palette**, click the Impasto icon or choose **Impasto** from the pop-up.

Click **Apply**. You may also choose **Objects palette: P. Float menu ▸ Apply**.

Painter converts the selection or floater to an Impasto Plug-in Floater and opens the **Impasto Options** dialog.

Impasto Options

You set your stroke depth options in the Impasto Options dialog. The options are described below. After setting your options, you paint in the floater to create textured strokes.

You can paint in the Impasto floater with the Impasto Options dialog open or closed.

- When the dialog is open, you can change your depth drawing options and you have access to open palettes (Art Materials, Brushes and **Controls palette: Brush tool**).

- When the **Impasto Options** dialog is closed, you can open and use all of the Brush control palettes to change the character of your strokes. You can also use the **Command-Z/Ctrl+Z** Undo command to remove your last stroke.

  As long as the Impasto Plug-in Floater is selected in the Floater List, your brush strokes go to that floater.

Use the Impasto Options dialog to set the stroke depth. If you like, you can close the dialog and continue to work in the Impasto floater.

To close the **Impasto Options** dialog, click **OK**.

You can reopen the **Impasto Options** dialog at any time. Select the Plug-in Floater in the document or in the Floater List. Choose **Objects palette: P. Float menu ▸ Options**. You may also double-click the Plug-in Floater's listing in the Floater List. Painter opens the dialog so you can change the settings.

Drawing Controls

All of the drawing controls affect the next strokes you make in the document. You can work for a while, change the settings, then work some more.

When **Draw with Color** is enabled, the brush applies color. Set your color on the **Art Materials: Color palette**. The **Clone Color** option is sometimes useful.

When **Draw with Depth** is enabled, the brush applies depth. If you are working with existing imagery, you might want to draw only with depth.

The **How Depth is Drawn** pop-up lets you choose a control medium for the depth. The control medium describes areas of the canvas where more (or less) depth is permitted. High luminance (closer to white) in the control permits more depth. Regions of the control that are closer to black inhibit the depth effect.

- **Uniform** leaves all depth control in your brush strokes. The floater allows depth uniformly.

- **Erase** levels the depth layer. If you created texture strokes you don't like, use this setting to wipe them out.
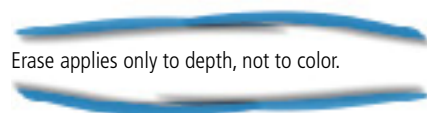
- **Paper** controls depth using the current paper texture. If the Paper palette is open, you can choose different papers and change their scale to try different textures.

- **Original Luminance** uses the clone source's luminance to control depth.

- **Weaving Luminance** controls depth using the current Weave. If the Art Materials: Weaves palette is open, you can choose different weaves.

If you want the depth to be an inversion of the "**How Depth is Drawn**" information, enable the **Inverted** option.

The **Opacity Controls Depth** option sets the brush stroke opacity as the control for the amount of depth applied.

The **Grain Controls Depth** option sets the brush stroke grain penetration as the control for the amount of depth applied.

The Opacity and Grain sliders are on the **Controls palette: Brush tool**.

You can use either Opacity or Grain to control the brush's depth application strength.

The **Negative Depth** option changes the direction of depth. When **Negative Depth** is enabled, the brush digs valleys instead of raising ridges.

The **Height** slider sets the maximum depth elevation.
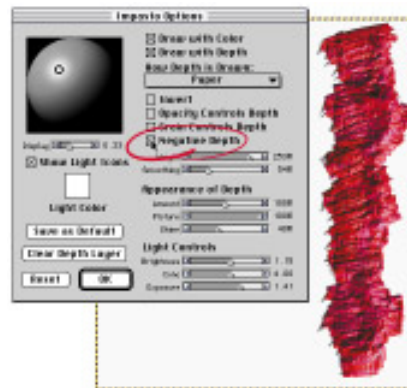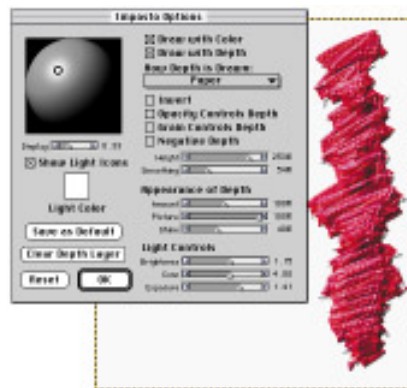
Normally, the Impasto media raises ridges and bumps. The Negative Depth option forces Impasto to excavate instead.

The Grain or Opacity Controls Depth options may be used to modulate the Height setting.

The **Smoothing** slider controls the transitions in texture. Increasing smoothing creates more intermediate steps, which produces a softer texture.

You might customize a brush variant and Impasto drawing options in a way you'd like to keep. If you save a brush variant while an Impasto floater is selected, Painter also saves the Impasto drawing options in the variant. You'll need to close the Impasto Options dialog to get access to the Brushes palette: Variant menu.

Appearance of Depth

The Appearance of Depth and Light Control settings affect the entire Impasto Plug-in Floater. At any time, you can change these settings to get different texture effects.

The **Amount** slider controls the degree to which the depth layer is used to create texture in the image. Moving the slider all the way to the left removes the appearance of depth. Moving the slider all the way to the right displays the maximum amount.

The **Shine** slider controls the highlights.

Light Control

You may have multiple colored lights interact with the depth to produce different textural effects.
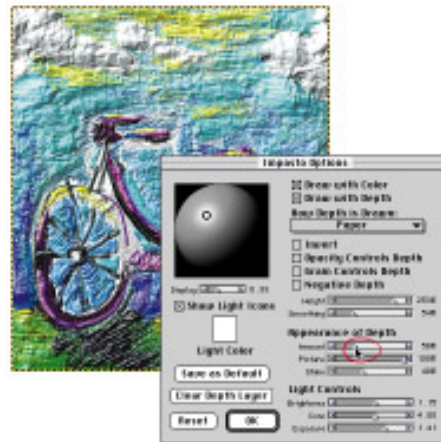
You can adjust the appearance of depth in the entire floater with the Amount slider.

The lighting preview sphere shows all possible surface angles and how the lights illuminate them.
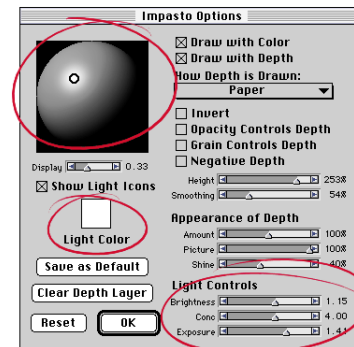
The lighting controls let you change how Painter uses the depth layer to render texture into the image.

The **Show Light Icons** check box lets you hide or show the light icons.

To create a new light, click on the sphere. A new light icon (small circle) appears where you click.

To change a light's angle, drag its icon on the sphere.

To select a light, click its icon. Notice the selected light has a thicker, dark icon. You may change the selected light's color and other characteristics.

To choose a new color for the selected light, click the **Light Color** chip. Use the color picker to choose a color.

To delete the selected light, press the **Delete/Backspace** key on your keyboard.

Brightness controls the intensity of the light.

Conc (concentration) adjusts the spread of the light's shine over the surface.

Exposure globally adjusts the overall lighting amount from darkest to brightest. (Exposure applies to all lights.)

Display affects the lighting Preview sphere only. If you have a darker color for the display, it can be easier to see subtle lighting adjustments.

Other Controls

If you make a mess of the depth layer and want to start again, click the **Clear Depth Layer** button. Any colors you've applied will remain.

If you get the controls set the way you like them, click **Save as Default**. At a later date, you can click **Reset** to return to your saved settings.
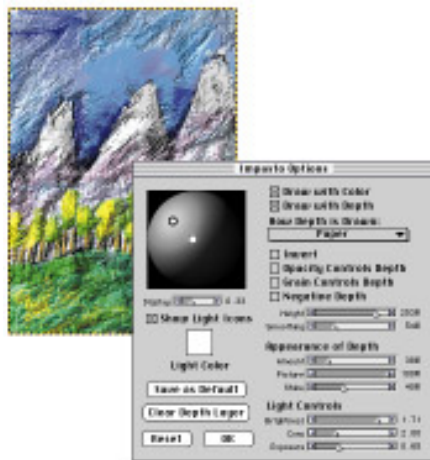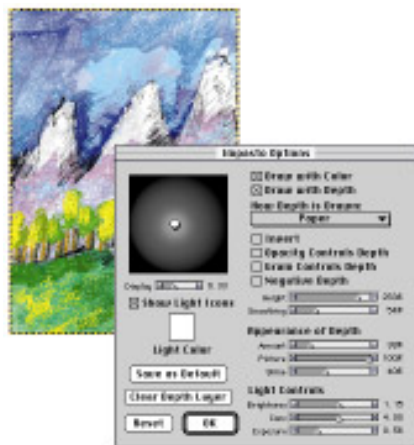
Different lighting changes the depth appearance of this Impasto.

Source Image
Before Paper Texture

Before 3D Brush Strokes

Image

Clone of Image oil painted

Before Image Luminance

Before Original Luminance

Image

Clone of Image filled with color
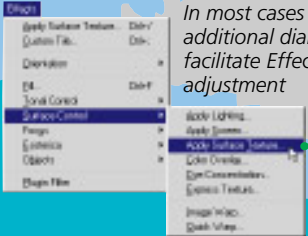
Before Mask
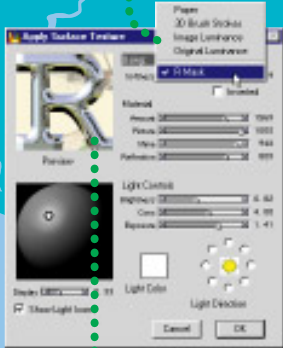
Image

Image's mask filled with a radial gradation

Choose Effects from the Effects menu. In most cases additional dialogs facilitate Effect adjustment

The **Using...** controls are found in the ontrols are found in the **Using...** pop -up menu. These represent alternative filters which may be used to influence the final appearance of the Effect.

Most Effects include a preview to interactively show the result of sliders together with the **Using...** *Controls*

Appearance after **Using...**
Using... *Paper*

Paper

Using... *3D Brush Strokes*

Using... *Image Luminance*

Using... *Original Luminance*

Using... *Mask*
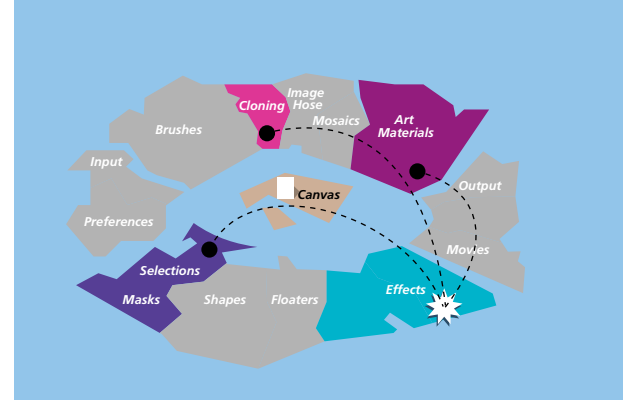
13

Image Effects

Understanding the Effects

The **Effects** menu offers features for electronic retouching, color correction, sharpening and softening focus, adding lighting with control over direction, color, and intensity. Orientation effects include rotate, scale and flip.

Many of Painter's effects are inspired by traditional artistic methods.

Special effects range include glass distortion, embossing, posterizing, color overlays, and warping. You'll find tools to create growth patterns, marbling, Van Gogh effects, and even blobs.

In this chapter you'll learn the effects and how to take advantage of them.

In some cases, effects involve other Painter features such as clones, special brushes, or floaters. Where possible, we have tried to provide enough information that you can select and experiment with an effect without having to refer to other sections of this manual.

Basics of Applying Effects

Most of Painter's effects are applied by making a selection, choosing a command from the **Effects** menu or one of its submenus, setting options, and clicking **OK**. If you do not make a selection, the effect will be applied to the entire image.

There are some Painter-specific features you should review before using the **Effects** menu. These include some selection tips, how effects dialogs work with other open palettes, using the **Fade** command to partially undo effects, the location of recently used commands in the **Effects**

menu, and descriptions of the **Using** pop-up. These areas are discussed in the next few sections.

Selecting Where to Apply Effects

You can apply Painter's special effects to a selection, to a floater, or to the entire image.

- If you want to apply an effect to a region of the Canvas, select that area before choosing an effect command. You may use any of Painter's selection tools, including the **Rectangular Selection** tool, the **Oval Selection** tool, the **Lasso** and the **Magic Wand**. For more information on selecting, refer to "Selecting a Shape" on page 188.

- If you want to apply an effect to an image floater, select that floater before choosing an effect. Painter applies the effect to the entire floater. For more information on selecting a floater, refer to "Selecting Floaters" on page 202.

- If you apply an effect to an object other than an image floater (i.e., shape, plug-in floater, reference floater), Painter automatically converts it to an image floater.

Painter automatically applies an effect to the entire image if no part of the image is selected.

Effects and Open Palettes

All of the effects dialogs can be used in conjunction with the **Art Materials** palettes. For effects that use color or paper texture, this means that you can change the Art Materials while you are experimenting with the effect. Your changes update interactively. You must display the Art Materials palette before opening the dialog.
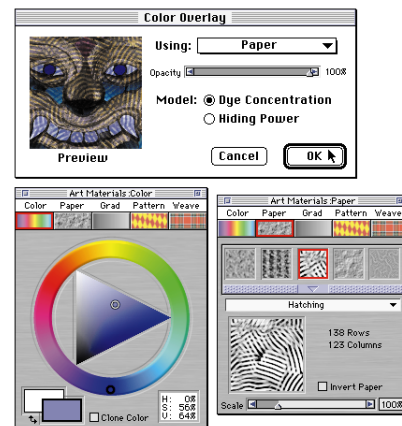
While most effects dialogs are open, you can change colors, change textures, and open libraries.

For example, if you are adding a **Color Overlay** to an image, the overlay effect depends on a selected paper texture and primary color. If you open the **Paper** palette and the **Color** palette when you choose **Effects menu▶ Surface Control▶ Color Overlay**, you can select and/or change paper grains and colors. These changes can then be seen in the Preview window of the

Color Overlay dialog. If necessary, you can open color sets, or paper texture libraries while the **Color Overlay** dialog remains open.

You can move effects dialogs around on your Desktop, if necessary, for full access to other palettes.

Using Fade to Partially Undo Effects

The **Fade** command allows you to undo any percentage of your last effect. This is a great way to achieve just the right amount of an effect.

To experiment with fade:

1 Open a new document.

2 Paint a colorful image or fill it with a pattern.

3 Choose **Effects menu▶ Surface Control▶ Apply Surface Texture** or another effect. Painter converts the image to a color negative.

4 Choose **Edit menu▶ Fade**. The **Fade** dialog appears.

5 Drag the slider and watch the image change between positive and negative

6 When you are satisfied with the settings, click **OK** to apply the effect.

Use the Fade dialog to undo a percentage of your last effect.

Recently Used Effects Commands

The **Effects** menu consists of several submenus. Sometimes while you are working, you want to use the same effect multiple times. Painter makes this easy.

As you work, you'll notice that the menu items for the last effects commands you've used are available at the top of the **Effects** menu. This makes it easy to choose the commands again.

Shortcut: Painter provides keyboard shortcuts for the two most recently used effects:

• Access the last effect used by pressing **Command-/** or **Ctrl+/**.

• Access the second to last effect used by pressing **Command-;** or **Ctrl+;**.

About the "Using" Pop-Up

In many of Painter's effects dialogs, you'll see a pop-up called **Using**.
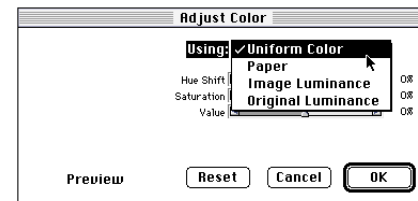
The Using pop-up is common in Painter's effects dialogs.

This pop-up menu allows you to specify the source that Painter uses as a model for applying an effect. The model tells Painter how much of the effect to apply to different areas of the image. Areas of high luminance in the model apply a greater degree of the effect in the image.

The **Using** options vary between effects. They include **Paper**, **User Masks**, **Image Luminance**, **Original** (clone source) **Luminance** and **Uniform**. These are described in the sections explaining the different effects.

Note: User masks appear at the bottom of the Using pop-up.

In most cases, you can see the results of choosing different options in the Preview window of an effect's dialog. The best way to see how these options affect your images is to try them.

Third-party Plug-ins

Additional effects may be provided by third-party plug-ins. Usually, these are purchased separately. You can access third-party plug-ins from within Painter by using the **Effects** menu.

For information on locating your plug-ins for Painter, refer to "Other Raster Plug-ins" on page 37.

To use third-party plug-ins from within Painter:

1 Select all or part of your image.

2 Choose **Effects menu▶ Plug-in Filter▶** and choose the effect you want. You see a list of available plug-ins at the bottom of the menu. All Third-party Plug-ins are located in submenus.

You can also use the **File menu▶ Acquire** or **File menu▶ Export** commands to send images in and out of Painter by way of supported devices, such as scanners, film recorders, color printers, and so on.

Plug-ins that pertain to grayscale or CMYK images will not work properly in Painter.

Orientation Effects

You can manipulate part or all of your image's orientation by rotating, scaling to a larger or smaller size, or flipping horizontally or vertically.

These commands are located under **Effects menu▶ Orientation**.

Rotating Images

You can rotate all or part of an image.

The selected image is rotated.

To rotate an image:

1 Select the part of the image you want to rotate. To rotate the entire image, do not select anything. If you want to rotate a floater, select that floater.

2 Choose **Effects menu▶ Orientation▶ Rotate**. The **Rotate Selection** dialog appears.

Use the Rotate dialog to rotate an image.

3 You can visually rotate the selection in the windows while the dialog is displayed. Drag the corner of the selection to rotate manually. The **Rotate Selection** dialog reflects the numerical value of the angle after you release the mouse or stylus.

You can also rotate by entering the desired angle in the dialog. A positive number rotates counterclockwise. A negative number rotates clockwise.

4 Click **OK** to apply the effect. When you rotate an image, Painter first turns the image into a floater and then rotates it. The image remains a floater until you drop it. For more information on working with floaters, refer to Chapter 11, "Floaters."
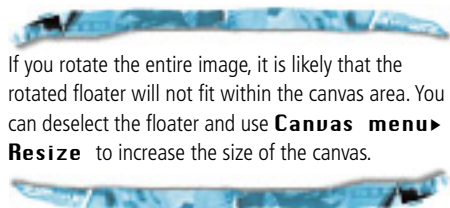
If you rotate the entire image, it is likely that the rotated floater will not fit within the canvas area. You can deselect the floater and use **Canvas menu▶ Resize** *to increase the size of the canvas.*

Scaling Images

The **Scale** command lets you change the dimensions of part or all of an image.

1 If you want to scale only part of the image, select that part. If you want to scale a floater, select that floater.

2 Choose **Effects menu▶ Orientation▶ Scale**. The **Scale Selection** dialog appears, and there are selection handles on the selected area.

```
┌─────────────────────────────────┐
│ ═══════  Scale Selection  ═══════ │
│                                   │
│ Horizontal Scale: [100.0] percent │
│   Vertical Scale: [100.0] percent │
│ Options:                          │
│   ⊠ Constrain Aspect Ratio        │
│   ⊠ Preserve Center               │
│            [ Cancel ] [ OK ▶ ]    │
└─────────────────────────────────┘
```
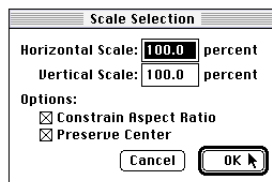
Use Scale Selection dialog to resize your image.

3 You can visually scale the selection in the windows while the dialog is displayed. Drag the corner of the selection to scale manually. The **Scale Selection** dialog reflects the numerical percentage after you release the mouse or stylus.

You can also scale by entering the desired percentages in the dialog.

4 Make a selection from the **Options**:

Constrain Aspect Ratio maintains the selection's proportions. Unchecking this item lets you change horizontal and vertical measurements independently.

Preserve Center keeps the item anchored in its location, based on the center of the image.

5 Click **OK** to apply the effect. When you scale an image, Painter first turns the image into a floater and then scales it. The image remains a floater until you drop it.

Distorting Images

You can distort the shape of an image or part of an image. Distort can be applied to a selection within the canvas or to a floater.

To distort an image:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Orientation▶ Distort**. Handles appear around the selection, and the **Distort Selection** dialog appears.

3 Drag the handles to reshape the selection.

4 Check the **Better (Slower)** box to see a more accurate rendering of your changes, although it will take longer. Checking this box is particularly useful in highly distorted cases.

Original image

Part of an image is selected and distorted

5 Click **OK** to apply the effect. A dialog tells you Painter is distorting the selection. Your selection will remain floating until you drop it.

Flipping Images Horizontally

Flipping an image horizontally creates the mirror image across an imaginary vertical line down the center of the image. The **Flip** commands work on a selection within the canvas or on a floater.

To flip an image horizontally:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Orientation▶ Flip Horizontal**.

Flipping Images Vertically

Flipping an image vertically creates the vertical mirror image of itself flipped across the horizontal line.

To flip an image vertically:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

Original image.
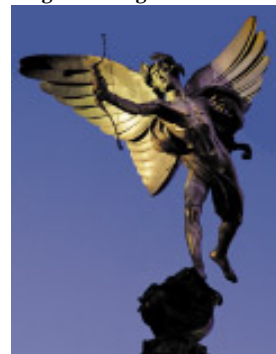
The image is flipped horizontally.

2 Choose **Effects menu▶ Orientation▶ Flip Vertical**.

Original image.

The image is flipped vertically.

Free Transforming Images

Free Transform converts an image floater into a reference floater. This enables you to resize, rotate and slant it by dragging the handles.

To rotate or slant, you need to first hold down certain command keys. For more information on Reference Floaters, refer to "Creating a Reference Floater" on page 220.

Set Transform

Set Transform lets you perform these same transformations numerically.

Commit Transform

Commit Transform converts the (transformed) reference floater back into an image floater.

Tonal Control Effects

The **Tonal Control** commands in the **Effects** menu let you adjust or alter colors in an image.

Correct Colors

Color correction lets you make adjustments in the relative amounts of the color components in an image. Color correction is often used to improve a color-casted or washed-out scan. It can also be used to create surreal color effects.

If a floater is selected, color correction applies within the floater. If no floater is selected, it applies to the entire image.

To apply color correction:

❶ Choose **Effects menu▶ Tonal Control▶ Correct Colors**. The **Color Correction** dialog appears. The features are described below.

Color correction is based on adjusting gamma response curves. The gamma curve, shown in the window, describes how the input color values are adjusted to create the output (corrected) color values.
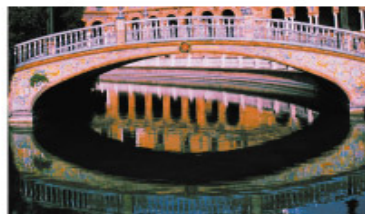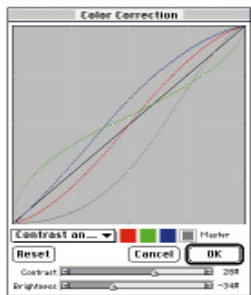
Use the Color Correction dialog to correct colors.

The horizontal axis describes the input values. The vertical axis describes the output values. Higher in the graph refers to lighter values.

When editing RGB curves, the current color is indicated by a colored point on the curve.

You may adjust the gamma curves for red, green, blue, or all three color components. The gray **Master** curve controls all color components equally.

2 Click the color chip for the curve you want to adjust.

3 Make a Color Correction selection from the pop-up. You can choose from four methods. You can start in one method and continue in another.

Contrast and Brightness

Contrast and Brightness provides sliders you can use to adjust the curves. These controls leave the black point at black and the white point at white.
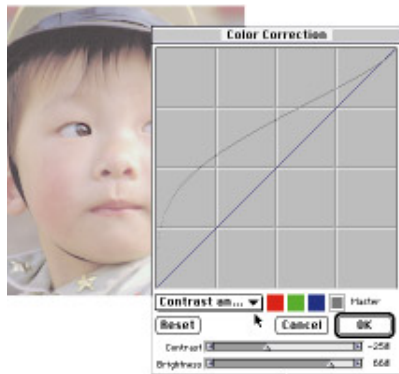
Use the Contrast and Brightness option to adjust the curves.

Increasing contrast makes dark areas darker and light areas lighter. Decreasing contrast pushes colors closer to midtones, but not necessarily uniformly.

Increasing brightness makes the colors lighter. Because dark colors have farther to go to reach maximum, they are increased more.

Curve

Curve lets you push and pull the curve where you want it.

- Position the cursor precisely on the curve—the cursor takes on a pointing hand shape—and drag the curve where you want it.

- The **Effect** slider controls how much of the curve moves in response to your dragging. When the slider is all the way to the right, the entire curve moves. As the **Effect** value is reduced, less of the curve moves. You can use lower **Effect** settings to create small changes in the gamma curve.

The **Curve** panel also provides buttons for setting the black and white point.
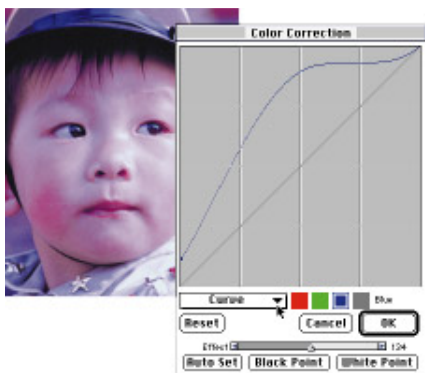
Use the Curve option to adjust push and pull the curves.

Auto Set automatically determines the black point and white point for the image.

Black Point makes the current color the blackest point. You should use the **Dropper** tool to pick a color from your image before opening the **Color Correction** dialog and choosing this command. All colors equal to or darker than the current primary color are assigned black.

White Point makes the current color the whitest point. You should use the **Dropper** tool to pick a color from your image before opening the **Color Correction** dialog and choosing this command. All colors equal to or lighter than the current primary color are assigned white.

Freehand

Freehand lets you draw the curve as you want it. This method is particularly useful when you want posterized or solarized effects.
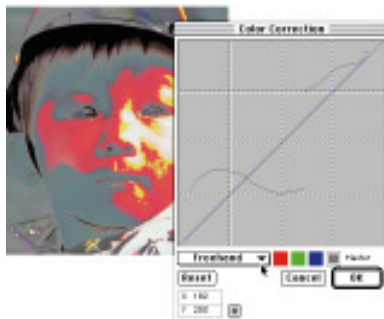
Use the Freehand option to draw the curves.

Advanced

The **Advanced** method allows you to set the red, green, and blue curves numerically at five points: Highlight, 1/4 Tone, Midtone, 3/4 Tone and Shadow. These points coincide with the vertical grid lines.
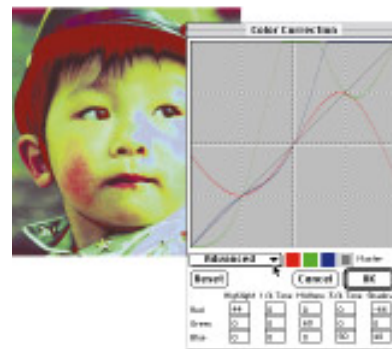
Use the Advanced option to adjust the curves numerically.

Adjust Colors

The **Adjust Colors** command lets you control the hue, saturation, and value of an image in much the same way as you would adjust your TV.

To adjust colors:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Tonal Control▸ Adjust Colors**. The **Adjust Color** dialog appears.

3 Make a selection from the **Using** pop-up to control where and how much to apply the color adjustment. In all cases other

Use the Adjust Color dialog to change the hue, saturation and value of an image.

than **Uniform**, pixels assigned higher luminance from the **Using** pop-up receive the greater color adjustment.

Uniform adjusts all pixels equally.

Paper Grain uses the selected paper grain to control the color adjustment.

Masks use the mask image as the model for controlling color adjustment. For example, a black-to-white gradation in the mask will allow you to adjust the color progressively across the image. Where the mask is black, the colors are not changed. Where the mask is white,

the adjustment applies fully. Transitional areas receive proportional color adjustments.

Note: In a floater, the visibility mask is also a choice.

Image Luminance uses this image's luminance as the model for color adjustment. Areas of greater luminance are adjusted more.

Original Luminance uses the luminance of the clone source as the model for color adjustment. If you have not set up a clone source, the current pattern will be used.

4 Adjust the sliders to control the overall hue, saturation, and value levels in the selection. You can see changes in the Preview window. You can drag in the Preview window to scroll.

Hue Shift adjusts the colors of the pixels by changing their hue. Moving the **Hue** slider to the right shifts the hue counter-clockwise on the color ring.

Saturation adjusts the amount of pure hue in the color. Moving the **Saturation** slider all the way to the left creates a grayscale image.

Value adjusts how light or dark the colors are. Moving the slider to the left darkens the colors.

5 To return the image or selection to the way it was press, **Reset**. This resets all of the sliders.

6 When you are satisfied with the settings, click **OK** to apply the effect**.**
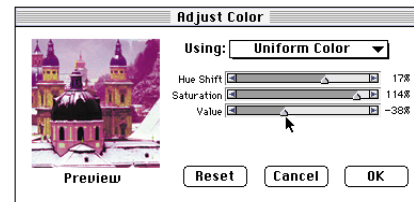
Preview image reflects changes made by dragging sliders.

Adjust Selected Colors

Adjust Selected Colors is similar to the **Adjust Colors** command, but it works only on a specified range of colors within an image. You choose a color in an image and adjust colors within a range of that color. You could, for example, turn yellow peppers to red peppers.

You can adjust colors that are exactly the same as the color you select, or you can choose colors within a range, based on proximity (on the color wheel or color space) to the selected color.

1 Choose **Effects menu▶ Tonal Control▶ Adjust Selected Colors**. The Adjust Selected Colors dialog appears.

2 In the image window, click the color you want to adjust.

When you pick a color, the **Color** palette updates to your choice.

3 Make a selection from the **Using** pop-up to determine what Painter uses as the source for the color adjustment. For example, **Image Luminance** uses the brightness of the image to control the color adjustment.

4 Adjust the **Extents** and **Feathers** sliders.

Extents determines the extent of the HSV color space around the selected center color. Move the **Extents** sliders to the right to increase the amount of color space that is affected by the command.

H Extents controls the number of hues affected. The percentage you choose means that only hues within the selected percentage of hues on the color wheel is affected.

S Extents controls the range of saturation affected. Only saturations within this range is adjusted.

Selective color adjustments change only certain colors in the image.

Adjust the **V Extents** slider to control the range of values affected.

Feather affects the softness at the edge of the selected colors.

5 Adjust the bottom three sliders to control the overall hue, saturation, and value levels. Watch the results in the Preview window. You can drag in the Preview window to scroll to different parts of the image.

6 When you are satisfied with the settings, click **OK** to apply the effect. Alternately, to remove your changes from the Preview window and return your image to the way it was, press **Reset**.

Brightness/Contrast

The **Brightness/Contrast** dialog adjusts the brightness and contrast of the overall image in the RGB format. Alternatively, the **Adjust Dye Concentration** command (refer to "Dye Concentration" on page 276) converts the image to a dye density domain and adjusts it there.

The Brightness/Contrast dialog.

To adjust RGB brightness and contrast:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Tonal Control▶ Brightness/Contrast**.

3 Drag the upper slider to adjust image contrast. Drag the lower slider to adjust image brightness. The image is redrawn when you let up on your mouse or stylus.

4 If you want to reset the sliders to normal, click **Reset**.

5 When the adjustments are the way you want them, click **Apply** to save the adjustments.

Equalize

The **Equalize** effect improves contrast, adjusting black and white points and distributing the brightness levels throughout the entire range of available levels. To achieve this, Painter creates a histogram showing the number of pixels for each brightness level value. Equalize allows gamma adjustment, which lightens or darkens an image without changing highlights or shadows.

To equalize colors:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Tonal Control▶ Equalize**. The **Equalize** dialog appears. When you initially bring up the **Equalize** dialog, Painter automatically adjusts the image so that the lightest color is white and the darkest color is black.

3 Enable the **Apply to Entire Image** if you want to disregard the selection and equalize the entire image.

You can adjust contrast manually by setting the black and white points in the histogram.
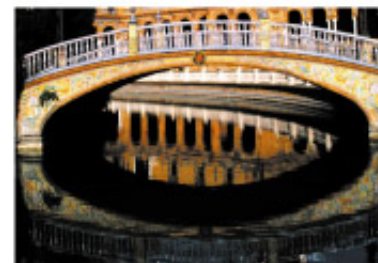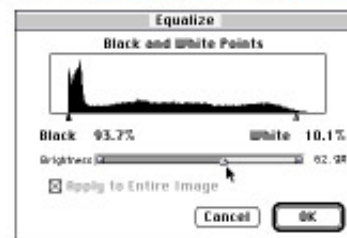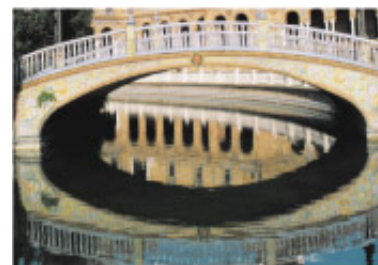
The histogram is represented by the silhouette. Each peak shows the number of pixels for a brightness level. You can adjust white and black points by dragging the triangles.

To set the white and black points manually:

1 Choose **Effects menu▶ Tonal Control▶ Equalize**. The **Equalize** dialog appears.

2 Drag the small white point marker under the histogram to the left and drag the black point marker to the right.

Now, any values in the image located to the right of the white marker become white; any values to the left of the black marker become black.

To adjust the image's gamma:

1 Move the **Brightness** slider to the right to increase gamma, which makes the image darker. Move the slider to the left to decrease gamma, making the image lighter. Your changes will be apparent while you're still in the dialog.

Changing the gamma adjusts only the midtones of an image and leaves the white and black areas untouched.

2 Enable the **Apply to Entire Image** if you want to disregard the selection and equalize the entire image.

3 Click **OK** to apply changes.

Negative

Choose **Effects menu▶ Tonal Control▶ Negative** to turn part or all of your image into a negative. The Negative effect will simply invert all the colors in your image or in the selected floater.

Positive and negative versions of an image.

Posterize

Posterizing adjusts the number of color levels an image contains.

To posterize an image:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Select **Effects menu▶ Tonal Control▶ Posterize**. The **Posterize** dialog appears.

Posterizing colors.

3 Enter a number of levels. The lower the number you enter, the more dramatic the effect will be.

4 When you are satisfied with the settings, click **OK** to apply the effect.

To posterize an image combined with a paper grain, use **Effect menu▶ Surface Control▶ Apply Screen**. To posterize to two levels and adjust the threshold level, use **Effect menu▶ Tonal Control▶ Equalize**.

Video Legal Colors

The Video Legal Colors effect makes the colors in an image compatible with video. Colors that aren't possible in video are adjusted to those that are. Only bright yellows and cyans are not video-legal. Painter supports both the NTSC (U.S.) and PAL (European) video systems.

To apply video legal colors:

1 Select part of your image.

2 Choose **Effects menu▸ Tonal Control▸ Video Legal Colors**. The **Video Legal Colors** dialog appears.

Use the Video Legal Colors dialog to adjust colors for use in video.

3 Choose the NTSC (U.S.) or PAL (European) video system from the **System** pop-up menu.

4 Click **OK**.

Posterize Using Color Set

Painter can posterize your image based on a color set. This allows you to create an image with only a specified set of colors in it. This is useful for multimedia work as well as applications like silkscreening.

To posterize an image using a color set:

1 Open the image you wish to posterize. If you want to posterize a floater, select the floater.

2 Open or create a color set. For instructions on creating a color set, refer to "Color Sets" on page 130.

3 Choose **Effects menu▸ Tonal Control▸ Posterize Using Color Set**.

The image is reduced to the colors in the current color set.

Surface Control Effects

Some of Painter's most unusual image-editing effects are in the **Surface Control** submenu of the **Effects** menu. You can manipulate paper, color, and light to produce a variety of interesting visual effects. Many of these effects will allow you to add texture to an image, which can give the illusion that it was created on canvas or paper.

Apply Lighting

The **Apply Lighting** effect lets you shine one or more light sources on part or all of your image.

Apply Lighting is comparable to hanging your artwork in a gallery and adjusting colored spotlights to illuminate it.

You can choose different lighting effects from a Library provided, or you can create your own effects by defining brightness, distance, color, and other characteristics. Once you have achieved a lighting effect you like, you can save it in a Library for use with other images.

Your computer must have a math coprocessor in order to use the Apply Lighting effect.
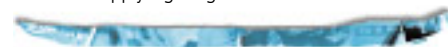
Applying Lighting from a Library

The Lighting library hold several preset lighting environments. You can use these directly or as a starting point for customized lighting.

To apply lighting effects from the library:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Surface Control▸ Apply Lighting**. The **Apply Lighting** dialog appears.

The scrolling palette contains preset lighting effects in the library. When you first open the dialog, the first effect is selected (it has a black box around it), and its name appears under the scroll bar.
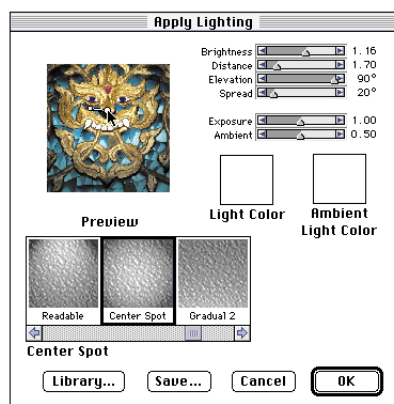
Use the Apply Lighting dialog to create your own custom lighting effects, or choose light effects from a library.

3 Click a lighting effect in the scrolling palette (Readable, Center Spot, Gradual 2, etc.) to see the effect in the Preview window. Scroll the palette to see and select other effects.

4 When you are satisfied with the settings, click **OK** to apply the effect.

Customizing Lighting

You can use the controls in the **Apply Lighting** dialog to achieve other lighting effects. The Preview window shows your changes, so you can experiment and see the results.

To create custom lighting:

Setting the Light Source

1 Add, delete or adjust lights in the Preview window. The small part of the light indicator is the origin from which the light is shining; the large part is the point the light shines toward.

Use the following actions to add, delete or adjust lights.

Standard camera-based principles apply to editing lighting. For example, if you turn up the lights, you may have to adjust exposure.

- To move the indicator, drag its large end.
- To change the light source direction, drag the small end.
- To create another indicator, click anywhere else in the Preview window.

- To delete an indicator, click the indicator to select it. Then press **Delete**/**Backspace**.
- To change the settings for a light, click on the indicator to select it. Then adjust the sliders to set the color as described below.

2 Use the following guidelines to adjust the sliders:

Brightness is like a dimmer knob. Moving it to the left turns down the light source, moving it to the right increases brightness.

Distance controls how far the light is from the image. If you move the light source closer, you may have to change the image's exposure (see below).

Elevation sets the light's angle in relation to the canvas. At 90° the light is shining straight down, and at 1° it's nearly horizontal.

Spread sets the angle of the light cone.

Exposure is the image's brightness, as in photography. Moving the slider to the left decreases exposure, moving it to the right increases exposure. Increasing the exposure lightens the image as a whole. Decreasing exposure darkens it.

Ambient is the surrounding light in an image. If you had no individual lights in your image, the ambient lighting would govern the overall lightness of the image. Moving the slider to the left darkens the overall lighting; moving it to the right increases the light.

3 Click the **Light Color** color chip and choose a color for the selected light from the Color Picker. Click **OK** to exit the Color Picker.

4 Click the **Ambient Light Color** color chip and choose a color for the surrounding light from the Color Picker. Click **OK** to exit the Color Picker.

5 When you are satisfied with the settings, click **OK** to apply the effect.

Saving Lighting Effects

When you have adjusted lighting and created an effect you like, you can save it. In the future, your saved lighting environment will be available in the library at the bottom of the dialog.

To save specific lighting effects:

1 After making your changes, click **Save**.

2 Type a name for your new lighting effect.

3 Click **OK** to save the effects. It is now a choice in the palette and you can apply it to any image.

4 When you are satisfied with the settings, click **OK** to apply the effect.

Creating Lighting Effects Libraries

You may create your own lighting library. From within the **Apply Lighting** dialog, click **Library**. Painter displays a dialog that allows you to create a new library or load an existing one.

The Lighting Mover lets you create a new lighting Library and manager library contents. To open the Lighting Mover, choose **Shift-Command-L/Shift+Ctrl+L**.

Apply Screen

Apply Screen is another way to add texture to an image. It combines luminance, the selected paper texture, and the three colors you pick in the **Apply Screen** dialog to add a three-color screen to an image.

To apply a screen:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Surface Control▶ Apply Screen**. The **Apply Screen** dialog appears.
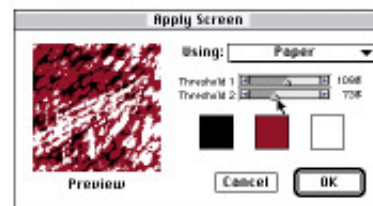
The Threshold sliders determine amounts of the selected colors. Clicking a square activates the Color Picker.

3 Click each color chip to display the Color Picker. Click the color you want to use, then click **OK**.

4 Move the **Threshold 1** slider to determine how much of the right and middle squares' color will be in the image. Moving the slider to the left increases the amount of the right color. Moving it to the right decreases the amount of the middle color.

5 Move the **Threshold 2** slider to determine how much of the left chips' colors will be in the image. Moving the

slider to the left decreases the amount of the color. Moving it to the right increases the amount of the left color.

G Make a selection from the **Using** pop-up:

Paper Grain produces a screen using the paper grain. If the **Papers** palette is open, you can choose different textures while the **Apply Screen** dialog is open.

Image Luminance creates texture based on the image's brightness. It is similar to a three-level posterization.

Original Luminance adds texture based on the clone source document's brightness.

User Mask adds texture based on the luminance of a mask. The pop-up lists each user mask in the document.

7 When you are satisfied with the settings, click **OK** to apply the effect.

Apply Surface Texture

Painter lets you add a three-dimensional surface texture to your image. You can use this feature to apply a paper texture across the image, to give depth to the brush strokes of an oil painting, and to make the tiles of your Mosaic three-dimensional.
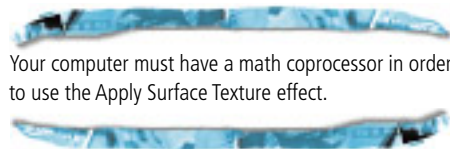
Your computer must have a math coprocessor in order to use the Apply Surface Texture effect.

One feature you will see is **Reflection**. This option allows you to map a separate image onto the surface. This gives the effect you would expect to see in objects made of glass or polished metal, like the chrome bumper of a classic car.
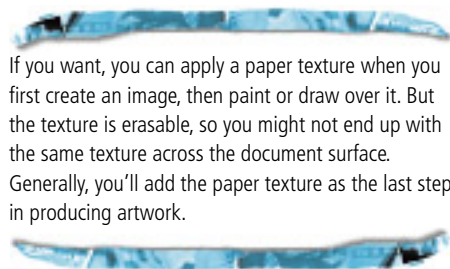
If you want, you can apply a paper texture when you first create an image, then paint or draw over it. But the texture is erasable, so you might not end up with the same texture across the document surface. Generally, you'll add the paper texture as the last step in producing artwork.
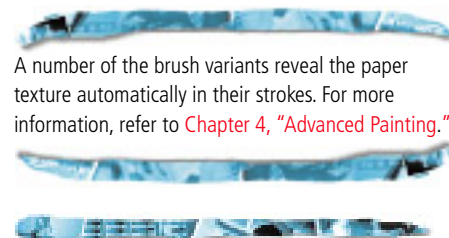
A number of the brush variants reveal the paper texture automatically in their strokes. For more information, refer to Chapter 4, "Advanced Painting."

To apply surface texture:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Surface Control▸ Apply Surface Texture**. The **Apply Surface Texture** dialog appears.

3 Make a selection from the **Using** pop-up to specify where to get the texture.

Paper applies the current paper texture. If the **Paper** palette is open, you can choose different papers and change their scale to try different textures. The Preview window automatically updates to paper changes.
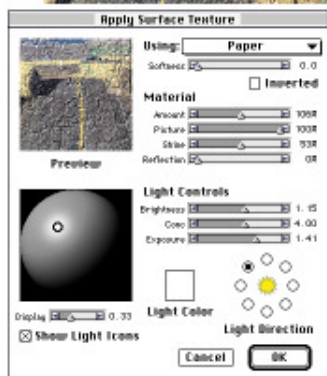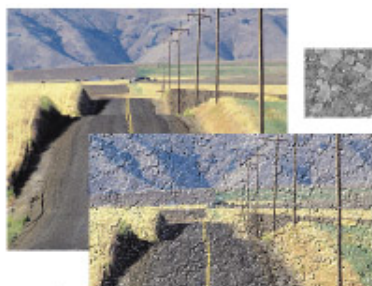
Texture based on Paper Grain.

3D Brush Strokes uses the difference in luminance between the clone source and the current document. This can make brush strokes appear three-dimensional, giving them the illusion of oil paints.

For tips on using this feature, refer to .
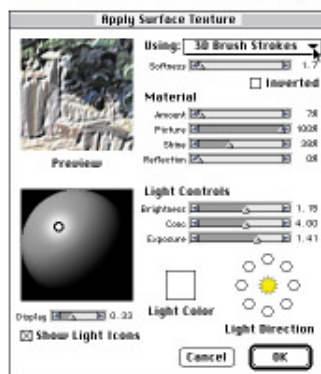
Texture based on 3D Brush Strokes.

User Mask produces surface texture based on a mask. The pop-up lists each user mask in the document. If a floater is

selected, the visibility mask is also listed. With a floater's mask, texture is applied around the edges of the floater.
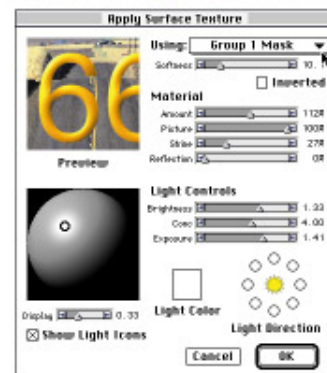
Texture based on an image floater's visibility mask. Notice the roundness of the sixes.

Image Luminance uses the current document's luminance to determine where to add surface texture. This will emboss on the edges of the imagery.
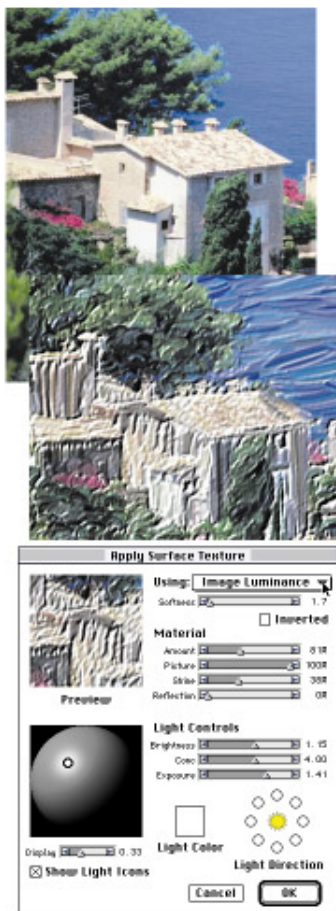
Texture based on Image Luminance

Original Luminance uses the clone source's luminance. For an example of using this option, refer to "Creating Embossing Effects" on page 273.
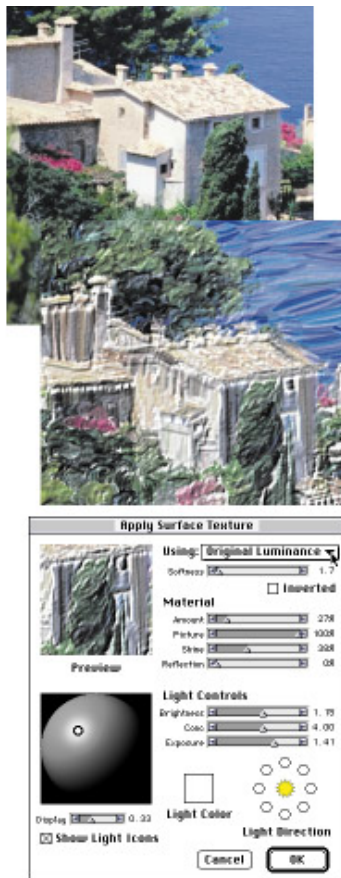
Texture based on Original Luminance

4 Click **Inverted** to create an inverted version of the option selected from the **Using** pop-up.

5 Use the following guidelines to adjust the **Softness** and **Material** sliders to achieve the texture you want:

Softness controls the transitions in texture. Increasing softness creates more intermediate steps, which produces a smoother distortion.

Picture controls the amount of color in the picture. At 100%, the full color of the picture shines through. Move the slider to the left to remove the color to black, leaving only the shine.

Amount controls how much surface texture is applied to the image. Moving the slider all the way to the right applies the maximum amount.

Shine controls the highlights. More Shine creates an aluminum-foil effect.

Reflection maps the clone source onto the surface at a variable percentage. A discussion of Reflection Maps can be found in "Creating Reflection Maps" on page 272.

The Preview window shows how the options look on your image.

6 Set the number of lights and position them as described below.

You may have multiple colored lights interact with the Paper Grain (from the **Using** pop-up) to produce different textural effects.

The Lighting Sphere shows all possible surface angles and how the lights illuminate them.

You may either use the basic positions, offered by the **Light Direction** radio buttons, or you may create custom lighting by working in the sphere.

The Light Direction option should be used only as a starting point to develop more complex lighting. If you have developed complex lighting with several lights of different colors and you decide to use the basic Light Direction control to change a light's direction, it will restore the default of one light and resets the color to white.

The **Show Light Icons** check box lets you hide or show the light icons on the Lighting Sphere.

- To create a new light, click on the sphere. A new light icon (small circle) appears where you click.

- To change a light's angle, drag its icon on the sphere.

- To select a light, click its icon. Notice the selected light has a thicker, dark icon. You may change the selected light's color and other characteristics.

- To choose a new color for the selected light, click the **Light Color** color chip.

- To delete the selected light, press the **Delete/Backspace** key on your keyboard.

7 Use the following guidelines to adjust the **Light Control** sliders:

Brightness indicates the amount of contribution of the light to the overall lighting color.

Conc (concentration) adjusts the spread of the light's shine over the surface.

Exposure globally adjusts the overall lighting amount from darkest to brightest.

Display affects the lighting Preview sphere only. If you have a darker color for the display, it can be easier to see subtle lighting adjustments.

8 Set light positions in the Lighting Sphere.

9 When you are satisfied with the settings, click **OK** to apply the effect.

Creating Reflection Maps

The **Reflection** slider in the **Apply Surface Texture** dialog maps the clone source onto the surface at a variable percentage.
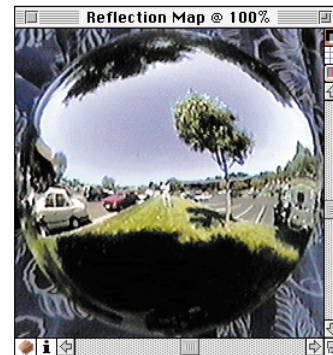
A typical reflection map.

To take advantage of reflection mapping:

1 Create the image you want to use as the reflection. Because the reflection describes the environment around the reflective surface, the image used is sometimes called an environment map. You'll probably want to warp the image to approximate the reflection from a curved surface.

2 Set the reflection image as the clone source. You can either make it a pattern and select it in the **Patterns** palette or open the file and choose `File menu`▶ `Clone Source`▶ file name.

3 Create a floater for the reflection surface. You will be using the mask to control the mapping. A floater simplifies the process because its mask matches the shape of the reflection area exactly.

4 Select the floater. When a floater is selected, effects apply only to the floater.
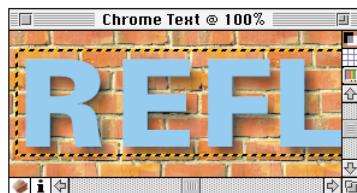
An image floater, ready to become reflective. In this example, the text shapes were converted to an image floater.

5 Choose **Effects menu▶ Surface Control▶ Apply Surface Texture**. The **Apply Surface Texture** dialog appears.

6 Choose the floater's usability mask from the **Using** pop-up.
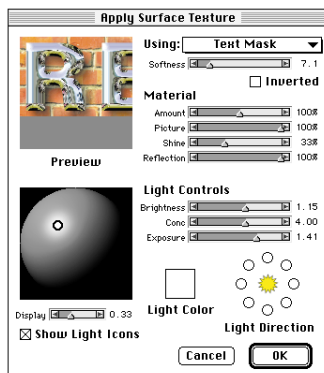
The floater is titled "Text," to its visibility mask is titled "Text Mask."

7 Adjust the **Reflection** slider to control the amount of reflection you want.

8 Adjust the **Softness** slider to control the mapping from the edges of the floater image. Increasing **Softness** gives a rounder, more three-dimensional look to the surface.

9 When you are satisfied with the settings, click **OK** to apply the effect.
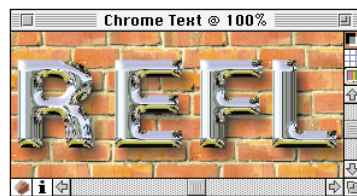
The resulting chrome-plated text.

Creating Embossing Effects

You can use the **Effects** menu to add an embossed effect to your images.

In order to create an embossed effect, you must begin with a clone document. Painter uses the original luminance—the brightness of the source document—to create the surface texture in the clone. For more complete information about cloning, refer to "Cloning a Document" on page 80.

The original image.

To create a clone with embossed effects:

1 Open the image with which you want to work.

2 Clone the image by choosing **File menu▶ Clone**.

3 Choose any color on the **Art Materials: Color palette** other than black. If you want the embossed image to be white, leave the screen blank.

4 Choose **Effects menu▶ Fill**.

5 Click the **Current Color** radio button.

6 Click **OK** to fill the clone file with colors.

7 Choose **Effects menu▶ Surface Control▶ Apply Surface Texture**. The **Apply Surface Texture** dialog appears. The Preview window shows how the embossed image will look.

8 Choose **Original Luminance** from the **Using** pop-up.
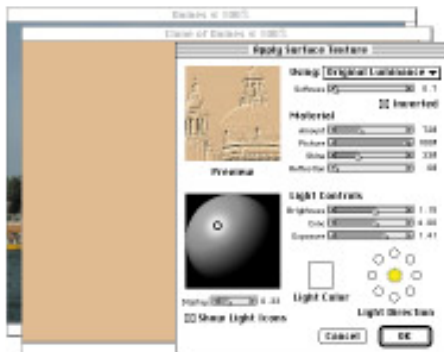
Use the Softness and Amount sliders to control embossing.

9 You can experiment with the other controls in the **Apply Surface Texture** dialog to see variations.

10 Click the buttons above **Light Direction** to change the location of highlights and shadows. Check the Preview window to see the effect of lighting changes.

11 When you are satisfied with the settings, click **OK** to apply the effect.

The clone is now an embossed version of the original.

Creating Three-dimensional Oils Effects

The **3D Brush Strokes** option in the **Apply Surface Texture** dialog makes brush strokes appear to be three-dimensional, giving them the illusion of oil paints. In order to create this effect, you must begin with a clone document.
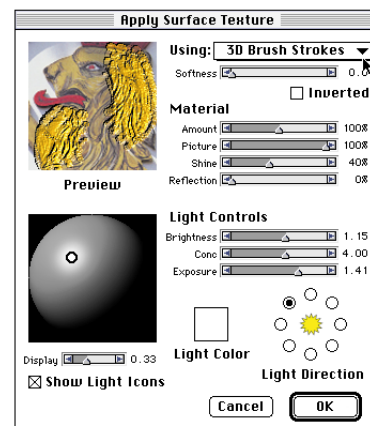
Texture based on 3D brush Strokes.

The difference between the clone and the original defines the three-dimensional texture in the clone. For more complete information on cloning, refer to "Cloning a Document" on page 80.

To create a clone with three-dimensional effects:

1 Open the image you want to work with.

2 Clone the image by choosing **File menu▶ Clone**.

3 Paint the new clone imagery.

4 Choose **Effects menu▶ Surface Control▶ Apply Surface Texture**. The **Apply Surface Texture** dialog appears. The Preview window shows how the image will look.

5 Choose **3D Brush Strokes** from the **Using** pop-up.

6 You can experiment with the other controls in the **Apply Surface Texture** dialog to see variations.

7 When you are satisfied with the settings, click **OK** to apply the effect.

You can also use the luminance of a source document to determine the character of brush strokes in a clone. If you want to experiment, try changing the source settings on the **Brushes palette:Controls menu▶ Sliders palette**. For instructions, refer to "Sliders Palette" on page 71.

Color Overlay

Use the **Color Overlay** command to simultaneously add color and texture effects to an image.

To create a color overlay:

1 Open the **Color** and **Paper** palettes onto your Desktop.

2 Select the area you want to change. If nothing is selected, the effect applies to the entire image. If you want to apply the effect to a floater, select the floater.

3 Select a color from the **Color** palette you want to use in the overlay

4 If you want to base the color on a paper grain, select a paper texture from the **Paper** palette.

5 Choose **Effects menu▶ Surface Control▶ Color Overlay**. The Color Overlay dialog appears.

6 Choose an overlay model.

Dye Concentration allows the paper to absorb the color.

Hiding Power allows the color to cover what's beneath it.

7 Move the **Opacity** slider until the preview reflects your preferred opacity.

8 Make a selection from the **Using** pop-up:

Uniform Color adds a flat tint to the image.

Paper Grain overlays color using the paper texture as a mapping model.

Image Luminance uses the image's brightness as the model for the color overlay.
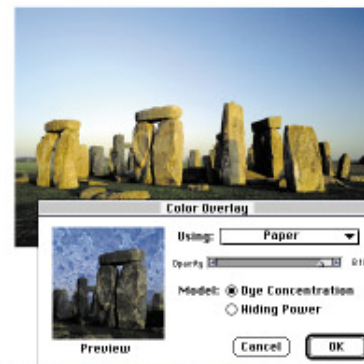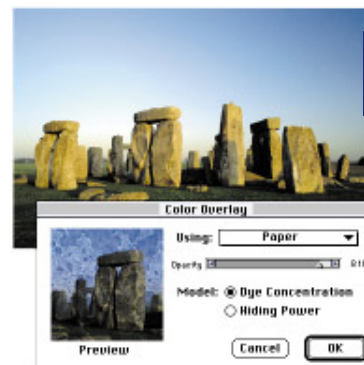
Color Overlay adds both color and texture.

Original Luminance uses the luminance of the clone source as the model for the color overlay.

User Mask uses the values in the mask as the model for the color overlay. The pop-up lists each user mask in the document.

9 When you are satisfied with the settings, click **OK** to apply the effect.

Dye Concentration

The **Dye Concentration** effect adjusts color intensity and adds surface texture by adjusting pigments. You can use it, for example, to lighten an underexposed photo or to darken an overexposed one.

To adjust the dye concentration:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Surface Control▸ Dye Concentration**. The **Adjust Dye Concentration** dialog appears.

Using the Maximum and Minimum sliders in the Adjust Dye Concentration dialog, you can preview color intensity based on the model selected in the Using pop-up.

The **Art Materials**: **Paper palette** can be used while the Adjust Dye Concentration dialog is open.

3 Make a selection from the **Using** pop-up:

Uniform Adjustment adjusts color uniformly.

Paper Grain adjusts color using the paper texture as a mapping model.

Image Luminance uses the image's brightness as the model for the color adjustment.

Original Luminance uses the luminance of the clone source as the model for the adjustment.

User Mask uses the values in the mask as the model for the dye concentration adjustment. The pop-up lists each user mask in the document.

When you choose **Uniform Adjustment**, moving the **Maximum** slider above 100% increases color density. A value below 100% decreases it. Moving the **Minimum** slider has no effect. With the other **Using** pop-up selections, both sliders are operable.

4 Adjust the **Minimum** and **Maximum** sliders as needed.

If you think of texture as peaks and valleys, the **Maximum** slider controls the dye on peaks and the **Minimum** slider controls dye in the valleys. You can set Maximum as high as 800%. The lower you set Minimum, which can be as low as 0%, the higher the contrast between peaks and valleys. The higher the **Minimum** slider, the flatter the paper will appear.

5 When you are satisfied with the settings, click **OK** to apply the effect.
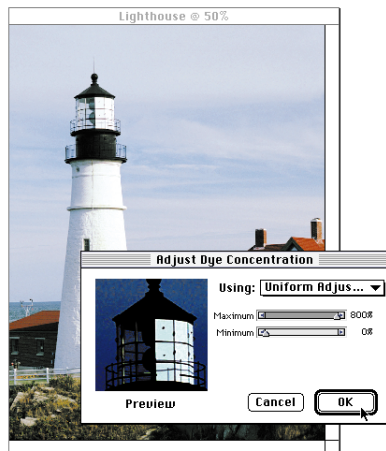
Examples of dye concentration.

Express Texture

The **Express Texture** effect generates a high contrast version of an image in grayscale. With this feature, you can create a visual effect similar to a custom halftone screen, like a mezzotint or line screen.

Express Texture is similar to Apply Screen with anti-aliasing built in.

To apply express texture:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Surface Control▶ Express Texture**. The **Express Texture** dialog appears.
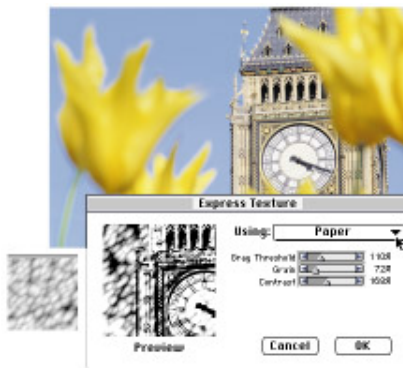
Using the Express Texture dialog.

3 Make a selection from the **Using** pop-up.

You can base the effect on the current paper texture, a user mask, image luminance or original luminance (clone source).

4 Use the following guidelines to adjust the sliders:

Gray Threshold determines where the threshold is, between pure black and pure white.

Grain determines how deeply the texture penetrates the surface.

Contrast determines how many levels of black and white there are. For example, low contrast generates pure gray, medium contrast produces levels of grayscale, building up to a high contrast black and white screen.

5 When you are satisfied with the settings, click **OK** to apply the effect.

If you want to add color back in after using this effect, try using the **Edit menu▶ Fade** command. This will bring back the original colors of the image.

If you want to add a new set of colors, you can apply a gradation to the image. First, choose a gradation, then select **Art Materials palette: Grads menu▶ Express In Image**.

Image Warp

The **Image Warp** command lets you distort the surface of an image as if it were a sheet of pliable film. With this command, your images can look as though they're reflected in a fun house mirror.

Your computer must have a math coprocessor in order to use the Image Warp effect.

To warp an image:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Surface Control▸ Image Warp**. The **Image Warp** dialog appears.

3 Adjust the **Size** slider. This slider controls the size of the area affected by dragging the cursor. The higher the number, the smaller the affected area.

4 Select a warp method:

Linear pulls the selected area as if you were pulling from the top of a cone.

Cubic pulls a flat surface.

Use the Image Warp dialog to warp your image.

Sphere pulls a surface as if it were a lens.

5 Drag the cursor over the Preview window to distort the image. A circle appears as you drag, denoting the area affected.

6 When you are satisfied with the settings, click **OK** to apply the effect.

QuickWarp

The Quick Warp command lets you easily create some of the basic distortions. These distortions are useful in preparing images for the **Apply Surface Texture** Reflection map feature.

QuickWarp applies to the entire canvas—not to selections or floaters.

To apply quickwarp effects:

1 Choose **Effects menu▸ Surface Control▸ QuickWarp**. The **Quick Warp** dialog appears.

2 Adjust the **Power** and **Angle Factor** sliders to control the warp effects.

3 Select a warp method:

Sphere warps the image spherically, like a reflection on a polished silver ball. Use the Power and Angle Factor sliders to intensify and twist the effect.

Bump warps the center of the image toward you, making it appear convex. Use the Angle Factor slider to twist the effect.

Using the Quick Warp dialog.

Valley warps the center of the image away from you, making it appear concave. Use the Angle Factor slider to twist the effect.

Swirl distorts the image in a spiral. The Angle Factor controls how many times the image spirals. Use the Angle Factor slider to twist the effect.

Ripple distorts the image in concentric rings, like a reflection in a pool of water when you drop in a stone. Use the Power and Angle Factor sliders to intensify and twist the effect.

4 When you are satisfied with the settings, click **OK** to apply the effect.

Focus Effects

The **Focus** commands in the **Effects** menu let you create sharpening, softening, motion blurring, and glass distortion effects.

Camera Motion Blur

This effect creates a blur similar to what you'd get in a photograph by jostling the camera during a long exposure. It's particularly effective with an image showing lights on a dark background.

To apply camera motion blur:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Focus▶ Camera Motion Blur**. The **Camera Motion Blur** dialog appears.
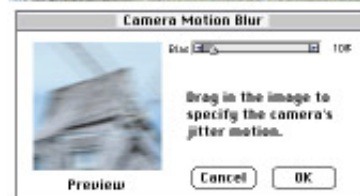
Using the Camera Motion Blue to create a blur.

3 Drag in the image to describe the blur motion. Experiment with different types of drag to get different blur effects. Try fast vs. slow, long vs. short and straight,

curved or zig zag drag paths. A longer drag path increases the amount of blur, which takes longer to finish.

4 Adjust the **Bias** slider to move the origin of motion along the drag path.

5 When you are satisfied with the settings, click **OK** to apply the effect.

Depth of Field

This effect creates a blur based on "distance from the plane of camera focus." Because you're working in a 2D image, you can use the control medium to describe the distance of different pixels.

This effect can take quite a while to process-especially with larger Min. Size and Max. Size settings.

To apply depth of field:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Focus▸ Depth of Field**. The **Depth of Field** dialog appears.
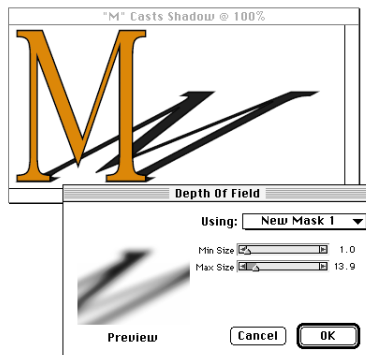
Using the Depth of Field dialog to create a blur.

3 Select the control you want from the **Using** pop-up. Darker regions of control receive greater blur.

4 Use the **Min. Size** and **Max. Size** sliders to set the minimum and maximum radii of the blur regions. **Max.** must be greater than **Min.** to get blurring.

The Depth of Field effect is a variable "circle of confusion" blur. The Min. Size and Max. Size sliders set the range for the radii of the confusion circles. The control medium specifies the radius of the confusion circles (from the Min.-Max. Size range) for different regions of the image.

5 When you are satisfied with the settings, click **OK** to apply the effect.

The "M" is a floating shape. The shadow is on the canvas.

Glass Distortion

Glass distortion offers powerful tools for distorting an image. You can use it put your image behind the pebble glass of a shower door, or you can distort your image beyond recognition.

A myriad of effects are possible with Glass Distortion. So many, in fact, that you'll probably want to experiment for a while before settling on the effect you like.

Glass distortion works by relocating the pixels of the image. Painter lets you control the rules used for relocating the pixels. The primary controls are the displacement map type and what information it uses to create the map.

To apply a glass distortion effect:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Focus▸ Glass Distortion**. The **Glass Distortion** dialog appears.

Using the Glass Distortion dialog to create a blur.

As you make changes, the Preview window shows their effect.

3 Make a selection from the **Using** pop-up to specify the basic information the displacement map begins with. The amount of displacement depends on the value assigned to the image pixels from the **Using** source.

Paper Grain uses the selected paper texture. Paper texture is good for creating the pebbled glass effect. Unless you want frosted glass, you'll probably want to increase the scale of the paper.

3D Brush Strokes uses the difference in luminance between the clone source and the current document.

User Mask uses a mask's luminance. The pop-up lists each user mask in the document. This is a good choice for a controlled distortion map. For example, gradations in the mask lead to a progressive distortion effect. Shapes in the mask distort in the fashion of their shape.

Image Luminance uses the current document's luminance.

Original Luminance uses the clone source's luminance. Use a tesselation as the clone source to produce a bumpy glass effect.

4 If you want to work with an inversion of the option selected in the **Using** pop-up, click the **Inverted** check box.

5 Adjust the **Softness** slider to control the transitions between displaced colors. Increasing **Softness** creates more intermediate steps, which produces a smoother distortion. If you experience aliasing in a glass distortion, try increasing **Softness**.

6 Make a selection from the **Map** pop-up to choose the type of displacement to use:

Refraction displaces pixels like an optical lens bends light. This is the best map type for distortions you'd expect from looking though glass.

Vector Displacement moves pixels in a specific direction.

Angle Displacement moves pixels in different directions.

7 Choose **Fast** or **Good** from the **Quality** pop-up.

8 Adjust the following sliders:

Amount controls the degree of displacement. Increasing the Amount distorts your image more.

Variance creates multiple variations in the neighborhood of the displacement. The result of increasing variance depends on the type of image and other settings.

Direction controls the direction of displacement. Three o'clock corresponds to 0°. The Refraction map type is not dependent on direction.

9 When you are satisfied with the settings, click **OK** to apply the effect.

Motion Blur

This effect makes an image appear as if it has been blurred by movement.

To apply a motion blur effect:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Focus▶ Motion Blur**. The **Motion Blur** dialog appears.

Motion blur applied to a photograph.

3 Use the following guidelines to adjust the sliders:

Radius sets the amount (distance) of blur. Moving the slider to the right makes the image look like it's moving faster

Angle sets the direction in which the image seems to travel. Zero degrees blurs in the direction of 3 o'clock.

Thinness blurs the image in a direction perpendicular to the angle you choose with the **Angle** slider.

4 When you are satisfied with the settings, click **OK** to apply the effect.

Sharpen

This effect heightens contrast by intensifying highlights and shadows.

To sharpen focus:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Focus▶ Sharpen**. The **Sharpen** dialog appears.

Using the Sharpen dialog to sharpen the focus.

3 Use the following guidelines to adjust the sliders:

Radius determines how much of the edge of an element is affected. The farther the slider is to the right, the wider the affected area will be.

Highlight determines the intensity of the bright areas. Move the slider to the right to brighten the highlight.

Shadow determines the depth of the shadows. The farther the slider is to the right, the darker the shadows will be.

4 When you are satisfied with the settings, click **OK** to apply the effect.

Soften

This effect increases the transition from one part of your image to another, enhancing the anti-aliasing of strokes.

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Focus▸ Soften**. The **Soften** dialog appears.
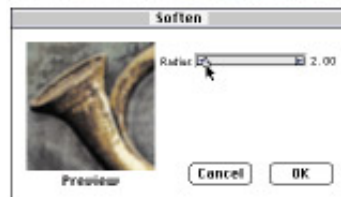
Using the Soften dialog to soften the focus.

3 Adjust the **Radius** slider. The farther the slider is to the right, the more steps there will be between one image element and another, which will mean more blurring.

4 When you are satisfied with the settings, click **OK** to apply the effect.

Super Soften

This effect is simply a much stronger version of Soften.

Zoom Blur

This effect creates a blur by zooming in on (or out from) an area. Imagery around the zoom point stays clear. Imagery distant from the zoom point is blurred more. This is a great way to call attention to a particular area of the image.

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Focus▸ Zoom Blur**.The **Zoom Blur** dialog appears.

3 Click in the original image to locate the point to zoom in on (or out from).
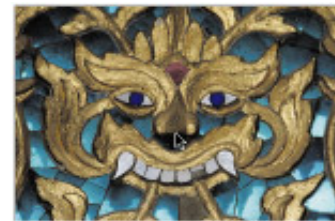
Using the Zoom Blur dialog to blur the focus.

4 Click the **Zoom In** checkbox to zoom in. Leave the option disabled if you want to zoom out.

5 When you are satisfied with the settings, click **OK** to apply the effect.

Esoterica Effects

Esoterica holds some of the more interesting and specialized effects.

Marbling

Marbling creates intricate distortions of the image, following a technique that dates back to the 12th century.

Think of a fork dragging through a mix of chocolate syrup and melted ice cream at the bottom of the bowl. Only instead of syrup and ice cream, the fork drags through your image.

In marbling, the fork is called a rake. Each time the rake drags through the image is called a **step**. You may create marbling recipes that include several steps—each time dragging with a different rake, direction, and waviness. When you create such a multi-step marbling recipe, you can save it for later use.

To apply marbling

1 Open the image you want to marble.

The **Blobs** effect is an excellent way to create the raw materials for marbling. Filling with a pattern is another one.

2 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

Selections can help you control the marbling when you have a particular effect in mind. For example, normally the rake path begins from the edge of the image. If you want the rake path to begin in the center of a blob, select an area that begins at the blob's center.

3 Choose **Effects menu▶ Esoterica▶ Apply Marbling**. The **Apply Marbling** dialog appears.

4 Choose a direction for the rake stroke: **Right-to-Left**, **Left-to-Right**, **Top-to-Bottom**, or **Bottom-to-Top**.

5 Use the following guidelines to adjust the sliders to define the rake and path desired. As you adjust the sliders, the dotted lines in the preview show the rake path.

Spacing adjusts the distance between rake teeth. This is how you can control the number of teeth. When the slider is all the way to the right, the rake has one tooth.

Offset moves the rake perpendicular to the path direction. Use Offset to adjust the position of the rake lines.
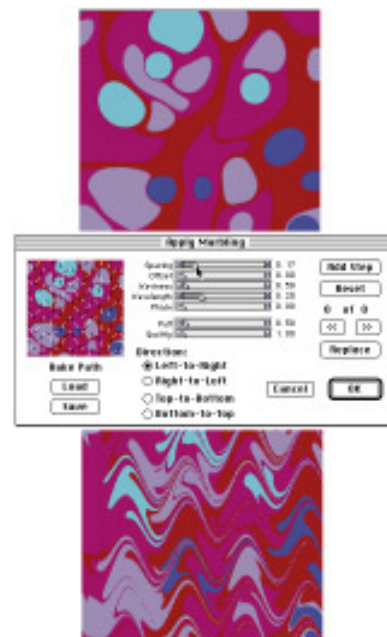
Using the Apply Marbling dialog.

Waviness changes the amplitude (height) of the waves. With the slider all the way to the left, Waviness is zero and the path is straight.

Wavelength determines the distance between wave peaks.

Phase slides the wave in the rake direction. This lets you set where in the curve—peak, downslope, valley, or upslope—the rake begins in the image.

Pull controls how much the rake distorts the image. With the slider near the left, the effect is thin and short. Increasing Pull gives the rake more power to distort the image.

Quality lets you control smoothness in the marbled image. Low Quality settings produce an aliased effect. The marbling looks rough with scattered pixels. Increasing Quality adds antialiasing. The color distortions appear smoother and more fluid.

6 When you're satisfied with the direction and slider settings, click **Add Step**. This adds a rake stroke of the current settings to the marbling recipe.

7 If you want to add more rake steps, repeat steps 4, 5, and 6. The steps will be applied in order, so subsequent steps work from the result of their predecessors. Whether you start horizontally or vertically, with a fine comb or coarse rake, can make a huge difference in the end result.

Each step you add increases the time it takes to apply the recipe.

The **Apply Marbling** dialog shows the number of steps in this recipe and which one is currently displayed by the sliders.

You can move between steps by clicking the forward and backward arrow buttons.

If you change the settings for any step you've created, click **Replace**. Painter updates the current step with the slider settings.

You'll need to click **Replace** when you edit the settings of an existing recipe step.

The **Reset** button clears the current recipe so you can start over.

8 When you are satisfied with the settings, click **OK** to apply the effect.

Saving and Loading Marbling Recipes

If you create a recipe you like, you can save it. Click **Save**. Painter prompts you to name the recipe. Give it a descriptive name and click **OK**.

To load a saved recipe, click **Load**. Painter displays a list of the available recipes. Select the one you want and click **OK**.

Auto Clone

You can have Painter apply brush dabs for you, rather than creating them yourself with a Cloner brush. For information on cloning, refer to Chapter 5, "Cloning and Tracing."

To fill a cloned area automatically:

1 Select the tool you want to clone with. Auto Clone works best with the **Driving Rain Cloner** variant of the **Cloners** brush and the **Seurat** variant of the **Artists** brush. If you want the **Seurat** tool to pick up color from the source document, choose `Art Materials palette`: `Color menu▸ Clone Color`.

2 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected.

3 Choose `Effects menu▸ Esoterica▸ Auto Clone`. Painter applies dabs of paint automatically to the selected area. If you want to vary the color of the dots more, open the expanded `Art Materials: Color palette`. Then set the ±**H**, ±**S**, and ±**V Color Variability** sliders to 15% each. For information on these controls, refer to "Working with Colors: The Color Palette" on page 127.

Use Auto Clone to add brush dabs to a large area.

4 When the right amount of the clone has filled in to suit your design, click anywhere in the image to turn off **Auto Clone**.

If you apply **Auto Clone** to a large area, the paint may fill smaller rectangular tiles one at a time. If you click to stop the **Auto Clone**, it won't automatically finish the final tile of the overall selected area. To fill in non-rectangular areas, you can use **Auto Clone** with selections. For more information, refer to Chapter 9, "Selections and Masks."

When you use **Auto Clone** with the **Felt Pen Cloner** and other tools that turn black as you repeat strokes, areas darken rapidly. You can slow down the color buildup and still use Auto Clone by dimming your original image as described in "Using Auto Clone" on page 83.

Auto Clone works in original images, too. Just select the brush you want, the area and the color you want to fill it with, and

choose **Effects menu▶ Esoterica▶ Auto Clone**. Multiple brush dabs fill the area. This is great for creating new textures in color.
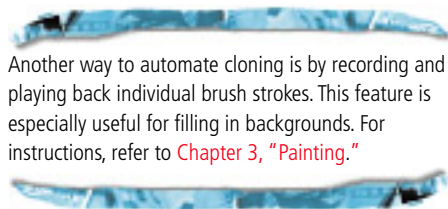
Another way to automate cloning is by recording and playing back individual brush strokes. This feature is especially useful for filling in backgrounds. For instructions, refer to Chapter 3, "Painting."

Auto Van Gogh

The **Effects menu▶ Esoterica▶ Auto Van Gogh** effect works with the Auto Van Gogh variant of the Artists brush. This algorithmic approach to placing directional brush strokes results in a Van Gogh-like rendition of an image.

Using Auto Van Gogh.

To apply Auto Van Gogh to an image:

1 Select the image you want to use.

2 Choose **File menu▶ Clone** to create a clone.

3 Select the **Brushes palette**: **Artists▶ Auto Van Gogh** variant of the **Artists** brush.

4 Adjust color variability on the **Art Materials: Color palette**.

5 Choose **Effects menu▶ Esoterica▶ Auto Van Gogh**.

The effect requires two passes. In the first pass, Painter determines the angles of the brush dabs. In the second pass, Painter applies the dabs. The image is rendered in a set of directionalized brush strokes.

Blobs

This effect is a good step to take before doing marbling because it involves simulating a pattern in paint floating on liquid in a pan, modeling the way that traditional marbling is done. It takes whatever you copy or cut to the Clipboard (or uses the current color if the Clipboard is empty) and puts it in a swirling pattern by placing blobs into the liquid image.
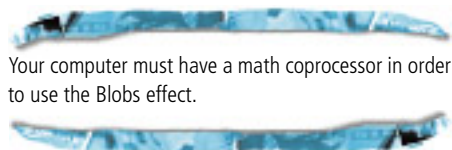
Your computer must have a math coprocessor in order to use the Blobs effect.
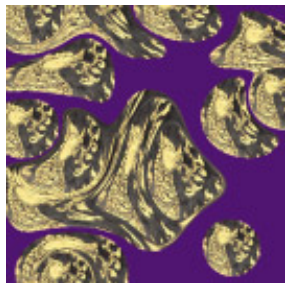
Called a Stone pattern, the Blobs effect is used as a starting point in marbling.

To apply a blob effect:

1 Select the image content for the blobs. You may copy an image, set the primary color or choose a pattern.

Tip: Copy a circular selection that's shaded like a sphere. This will produce blobs that look like bubbles.

2 Open or select the image where you want to create the blobs.

3 Choose **Effects menu▶ Esoterica▶ Blobs**. The **Create Marbling "Stone" Pattern** dialog appears.

4 Enter a value for the Number of blobs. To experiment, try entering 20.

5 Enter values for **Minimum Size** and **Maximum Size**. To experiment, try setting **Minimum Size** at 50 and **Maximum Size** at 60.

6 Enter a **Subsample** value. This option creates the anti-aliasing steps. To experiment, try entering 8.

7 Make a selection from the **Fill Blobs With** pop-up. Your choices are **Paste Buffer** (what you copied), **Current Color** and **Pattern**.

8 The **Seed** is a number used in randomizing the blobs. Each time you "Blob," a different seed number is generated. You may enter a specific number if you like.

9 Click **OK** to apply the effect. Painter creates blobs in the image.

Custom Tile

This effect translates the image into tiles. You can use one of the built-in tile patterns or generate tiles from a paper, pattern or user mask. Each tile gets a single color—the average of the image pixels it covers. Custom tile can lead to a variety of interesting image styles.
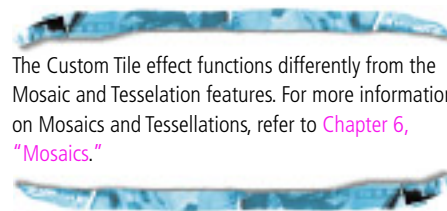
The Custom Tile effect functions differently from the Mosaic and Tesselation features. For more information on Mosaics and Tessellations, refer to Chapter 6, "Mosaics."

To apply custom tiles:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Esoterica▶ Custom Tile**. The **Custom Tile** dialog appears.

3 Make a selection from the **Using** pop-up to the control medium that describes the tile shape you want. In whatever source you use, lighter patches (higher luminance) become tiles. Dark regions become grout—the cracks between tiles.

Brick, **Hex**, **Square**, **Triangle**, and **12-6-4** are built-in tile shapes. You may also choose the **Original Luminance** (source), **Paper** or user mask.
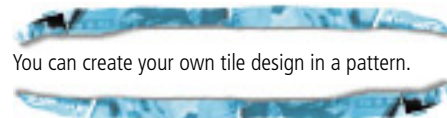
You can create your own tile design in a pattern.

Using the Custom Tile dialog.

4 For **Bricks**, use the **Brick Width** and **Brick Height** sliders to adjust the size of the bricks.

5 For the other built-in tile shapes, use the **Angle** and **Scale** sliders to adjust the tile orientation and size.

6 For **Current Pattern**, **Paper**, and **User Mask**, use the **Threshold** slider to control the distinction between "what is light" and "what is dark." The **Threshold** slides along the luminance range-with everything above becoming tiles, and everything below becoming grout.

7 Adjust the **Thickness** slider to control the width of cracks between tiles (grout lines).

8 Adjust the **Blur Radius** slider to set the sampling radius for blurring the crack or grout color. Increasing the **Blur Radius** adds more neighboring colors to the crack pixels in each pass.

9 **Blur Passes** sets the number of times the crack pixels are blurred. More passes mixes more tile color into the cracks.
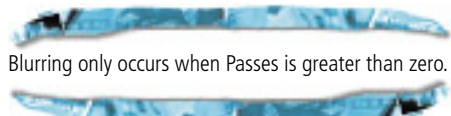
Blurring only occurs when Passes is greater than zero.

10 If you want grout to show between the tiles, enable the **Use Grout** option. If you don't use gout, the image shows between the tiles.

11 Click the **Grout** color chip to set a color for the grout.

12 When you are satisfied with the settings, click **OK** to apply the effect.

Grid Paper

Using **Grid Paper** in the **Effects** menu, you can add horizontal or vertical lines or a grid to part or all of your image. The lines become part of the image canvas, and thus become an element in your design.

Blurring changes the grout appearance.

Grid paper becomes part of the image.

Unlike the Grid Overlay, a transparent layer that floats above your image as a reference, **Grid Paper** becomes part of your image.

To apply grid paper:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▸ Esoterica▸ Grid Paper**. The **Grid Options** dialog appears.
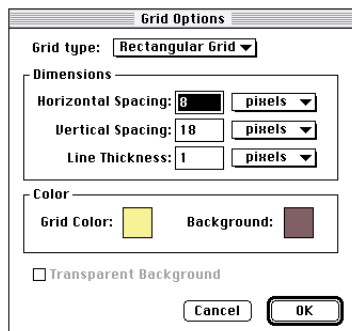
Grid Options dialog.

3 Make a selection from the **Grid Type** pop-up to determine the appearance of the grid pattern. You can choose from **Rectangular Grid**, **Vertical Lines**, **Horizontal Lines**, and **Dot Grid**.

4 Set the dimensions of the grid using the following options:

Horizontal Spacing determines the amount of space between horizontal lines.

Vertical Spacing determines the amount of space between vertical lines.

Line Thickness sets the width of grid lines.

5 Select **Grid** and **Background** colors.

Grid Color changes the color of grid lines. Click the color chip to display the Color Picker. Choose a color in the Color Picker, then click **OK**.

Background changes the grid's background color. Click the background color chip to display the Color Picker. Choose a color in the Color Picker, then click **OK**.
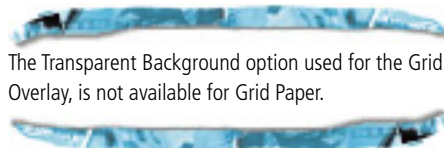
The Transparent Background option used for the Grid Overlay, is not available for Grid Paper.

6 When you are satisfied with the settings, click **OK** to apply the effect.

Growth

Growth patterns are branch-like designs that resemble architectural renderings of trees.

Growth patterns are created using the current primary color. When in the **Growth** dialog, you have access to the **Color** palette, so you can change the primary color at any time.

To create growth patterns:

1 Choose the color you want for growth on the **Color** palette.

2 Choose **Effects menu▸ Esoterica▸ Growth**. The **Growth** dialog appears.
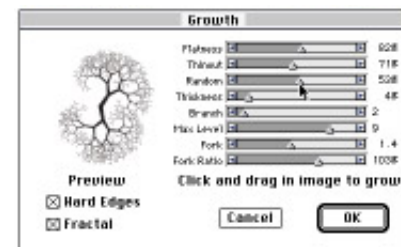
Use the Growth dialog to create branch-line designs.

3 Choose an edge style.

Growth patterns can be created with soft, feathery edges or hard edges. To generate growth patterns with soft edges, de-select the check box next to **Hard Edges**.

4 Choose between fractal and **non-fractal**.

Growth patterns have two forms: **Fractal** and non-fractal. Fractal patterns are open-ended and non-fractal patterns are closed on the outside by a ring. To make non-fractal patterns, de-select the check box next to **Fractal**.

5 Use the following guidelines to adjust the sliders. The sliders affect both the fractal and non-fractal growth patterns in a similar way, with the exception of **Fork** and **Fork Ratio**. Fork and Fork Ratio only affect fractal growth patterns.

Flatness reshapes the growth pattern like a lens effect. Move the slider to the left for a concave lens effect. Move the slider to the right for a "fish-eye" lens effect.

Thinout affects how the size of the growth pattern is distributed from the center to the outside edges. If set over 100%, the outside edges become thicker. Set to under 100%, the edges become finer and more delicate.

Random affects how symmetrical the growth patterns are. When turned down, straight-line, geometrical designs are generated. When is turned up, distorted, crooked designs are generated.

Thickness adjusts the weight of the lines within the design uniformly. Move the slider to the left to thin the design and to the right to thicken it. The growth pattern will never get thinner than one pixel.

Branch determines how many branches come from the center to the outside edge. It has a range of 1 through 20, 3 being the default.

Max Level determines the number of levels or sub-levels of the tree. Specifically, Max Level sets the way the branches split to the outside edge.

Fork adjusts the overall intricacy of the outermost branches.

Fork Ratio is like **Fork**, but it affects only the tips of the outermost branches.

6 Move the cursor to the image window, and drag. As you drag, you see the outline of the growth pattern. Drag in larger arcs to create a larger pattern. When you release, the pattern is created.
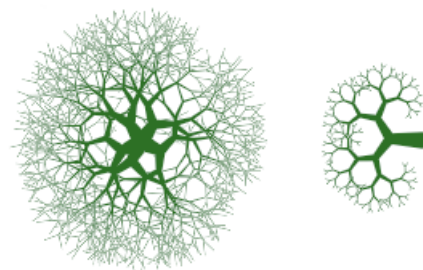
Different slider settings create different growth types.

7 Use the Preview window to make sure that you have planned the Growth pattern you want.

8 To retain the growth pattern you just drew, click **OK**. To discard the growth pattern you just drew, click **Cancel**.

When you click **Cancel**, all growth patterns you have created since you opened the dialog are cancelled. It's a good idea to click **OK** to save each pattern you create.

Highpass

Highpass suppresses low frequency areas containing gradual or smooth transitions of brightness levels. This leaves high frequency areas, or just the edges of an image, containing stark shifts between brightness levels.

You can make the highpass more pronounced by using the **Equalize** command.

To apply a highpass effect:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Esoterica▶ Highpass**. The **Highpass** dialog appears.
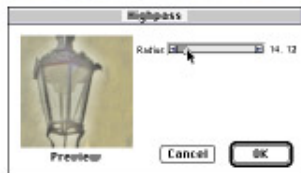
Highpass introduces stark shifts between brightness levels.

3 Move the **Radius** slider to determine the amount that the low frequency areas will be suppressed. This value defines a radius in pixels around each pixel in the selected image area. Moving the slider to the left suppresses larger amounts of low frequency information. Moving the slider to the right suppresses smaller amounts of low frequency information.

4 When you are satisfied with the settings, click **OK** to apply the effect.

Maze

This effect generates an image of a maze. Typically, you'll create a maze in a new, blank image. Each maze has one "solution"—an open route from the entrance to the exit. You can capture a portion of the maze as a pattern or paper texture or use the maze as source material for other effects.

Mazes must be rectangular. They will not respect the contours of a non-rectangular selection.
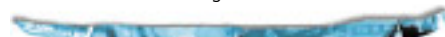
To apply a maze effect:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Esoterica▶ Maze**. The **Maze** dialog appears.
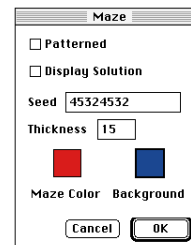
Using the Maze dialog.

3 Set your maze options. When you are ready to create the maze, click **OK**.

4 **Patterned** constrains barriers to the horizontal.

5 **Display Solution** creates a path following the open route from the entrance to the exit.

6 **Seed** generate the maze pattern. For a random maze, enter a number at random. If you want a different maze, enter a different Seed number.

7 **Thickness** sets the width of barriers and paths.

8 Click the **Maze** color chip and use the Color Picker to choose a color for the Maze barriers.

9 Click the **Background** color chip and use the Color Picker to choose a color for the background (pathways).

10 When you are satisfied with the settings, click **OK** to apply the effect.
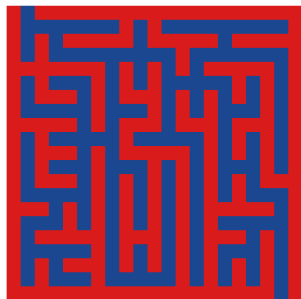
Mazes produce interesting designs.

Place Elements

Place Elements is an effect designed to automate intelligent application of brush dabs. It's particularly useful with the **Image Hose** brush.

Place Elements creates a virtual sphere within the confines of the selection rectangle. (It will be a sphere when the selection is square. But when the selection is rectangular, the sphere will be elongated or flattened.) A certain number of points are created at random locations on this sphere. The points then seek to distance themselves from each other. Finally, a brush dab is placed at each point. The effect adjusts the dab appearance based on its location on the sphere.

To place elements:

1 Choose the **Rectangular Selection** tool and create a selection describing the location and general size for the effect.

2 Load the **Image Hose Nozzle** file you want to use. (For more information on the Image Hose, refer to Chapter 7, "The Image Hose.") You can also use the effect with a different brush. In which case, you should select a primary color.

3 Set the secondary color to black. This effect automatically controls mixing of the secondary color with Nozzle elements to produce depth shading. Shadows tend toward black, so this is the color to use.

4 Choose **Effects menu▸ Esoterica▸ Place Elements**. The **Place Elements** dialog appears.
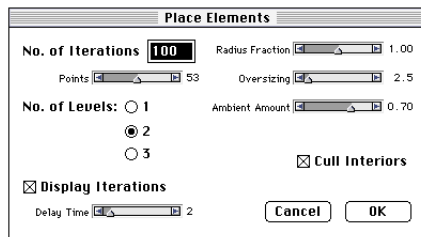
Using the Place Elements dialog.

5 Enter a number in the N**umber of Iterations** entry box.

In each iteration, the points seek to distance themselves from each other on the surface of the virtual sphere. The points start at random locations, so if you set zero as the number of iterations, their placement will be completely random. Higher numbers of iterations increase the regularity of the spacing.

6 Adjust the **Points** slider to set the number of points to create on the virtual sphere. Each point created correlates to an image element placed.

7 Select the **Number of Levels**. At level one, each point receives an element, and that's the end of it.

At level two, each point receives an element, then each point is used as the center for another virtual sphere on which point iteration and element placement repeats.

The third level extends sphere creation and element placement once more.

The number of elements increases rapidly with more than one level. If you choose 12 points and three levels you'll create.... 12 + 122 + 123 elements. Of course, many of these will probably be covered by later placements.

8 Use the following guidelines to adjust the sliders:

Radius Fraction determines the size of the virtual spheres created at the second and third levels. The first level radius is multiplied by the fraction amount to determine the radius of the second level spheres. The fraction is used again between the second and third levels. Higher values (above 1.0) increase overlapping of the spheres. Lower values (below 1.0) preclude overlapping (when sufficient iterations are used to distribute the points.)

Window Oversizing controls the diameter of the level one virtual sphere in relation to the selection marquee. At 2.5, the sphere will fit confines of the selection. Higher numbers shrink the sphere. Lower numbers stretch it beyond the selection.

Ambient Amount controls the use of the secondary color in Nozzle elements that appear on the virtual sphere away from the light source. This is how the clump of placed elements exhibits coherent three-dimensional shading when black is used as the secondary color. The default is 0.7, which gives good shading results. Increasing the value brings in more of the secondary color. Decreasing it reduces secondary color mixing.

9 Enable **Display Iterations** to display a small marker for each point after each iteration. When this is on, you can see the points move as they seek to avoid each other. This can be a help in deciding the number of iterations to use.

10 Adjust the **Delay Time** slider to set a pause between each iteration display. With a slight pause, you can see the track of the moving points more clearly.

11 If you have chosen two or three levels, you might want to enable **Cull Interiors**. It removes points (before elements are placed) that occur inside of other spheres. This option increases processing time for the effect.

12 When you are satisfied with the settings, click **OK** to apply the effect.

An example of Place Elements.

Pop Art Fill

This effect lets you cover the image with pseudo half-tone dots.

To apply pop art fill:

1 If you want to apply the effect to only a part of an image, select that part. If nothing is selected, the entire image is affected. If you want to apply the effect to a floater, select the floater.

2 Choose **Effects menu▶ Esoterica▶ Pop Art Fill**. The **Pop Art Fill** dialog appears.

3 Make a selection from the **Using** pop-up to set the control medium. **Image Luminance**, **Current Grad** or **Original Luminance**.

4 If you want to invert the control medium, enable the **Inverted** check box.

5 Adjust the **Scale** slider to set the dot size.

6 Adjust the **Contrast** slider to mix in the luminance of the control medium. This is particularly useful when using **Image Luminance** as the control.

7 Click the **Dab** color chip and use the color picker to choose a color for the dots.
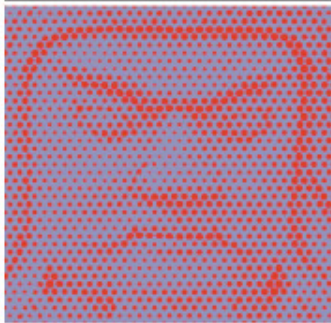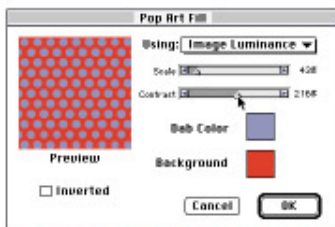
Using the Pop Art dialog.

8 Click the **Background** color chip and use the color picker to choose a color for the background.

9 When you are satisfied with the settings, click **OK** to apply the effect.

Using Pop Art Fill

This mini-tutorial provides you with instructions on using other Painter features for creating a pop art image.

To create a pop art image:

1 Clone the image you want to work with.

2 Choose **Effects menu▸ Tonal Control▸ Adjust Colors**. The **Adjust Color** dialog appears.

3 Drag the **Saturation** slider all the way to the left. This reduces the image to grayscale.

4 Choose **Effects menu▸ Tonal Control▸ Negative**. This lets you create smaller pop art dots in brighter areas.

5 Choose **Effects menu▸ Esoterica▸ Pop Art Fill**. The **Pop Art Fill** dialog appears.

6 Use black as the dot color and white as the background. Set scale as you like it.

7 After creating the Pop Art Fill, select and float the entire image.

8 Copy the floater. You can close the clone file now.

9 Paste the copied floater into your original image file.

10 Set the floater's composite method to **Darken**. This lets the background image appear through all white areas of the Pop Art floater.

11 Deselect the floater and use your favorite color effects to change the colors in the canvas image.

Express Gradation followed by **Posterize** were used in the example below.

An example of Pop Art.

Objects Effects

Drop Shadow

Drop Shadow automatically creates a drop shadow for floaters. You can add a drop shadow to a single floater or to a group. If you wish to apply a drop shadow to several floaters at once, group the floaters before applying the shadow. For information about working with floaters, refer to Chapter 11, "Floaters."

To add a drop shadow to a floater:

1 Select a floater or group of floaters. This effect works only with image floaters. Shapes and other floating objects must be converted to proceed.

2 Choose `Effects menu▶ Objects▶ Create Drop Shadow`. The **Drop Shadow** dialog appears.

3 Enter information in the dialog.

X and Y Offset refers to the number of pixels to the left, right, top, or bottom of the floater.

Opacity refers to the shadow opacity.

You can add a drop shadow to a floating image.

Radius sets the amount of blur. The radius is half the distance across the blurred region. If you set **Radius** to zero, you'll get a sharp edge on the shadow.

Angle sets the direction that the shadow is blurred.

Thinness applies blur perpendicular to the **Angle**. If the blurring shows streaks, you can increase **Thinness** to soften them.

4 Click **OK**. The drop shadow appears with the floater.

The drop shadow is a separate floater that is grouped with the original floater. Enable **Collapse to One Layer** in the **Drop Shadow** dialog if you want the floater and its shadow to be one floater when the operation is complete.

Align

Align moves selected floaters and shapes into positions relative to one another. Align is covered in Chapter 11, "Floaters."

FSMovie:5/26

Onion Skin on

Document Window

Navigate and control Previews using the Frame Stacks palette

Frame Stacks

| 1 | 2 | 3 | 4 | 5 |

Frame 5   of 26

Movie
Add Frames...
Delete Frames...
Erase Frames...
Go To Frame...

Clear New Frames
Insert Movie...

Apply Script To Movie...
Apply Brush Stroke To Movie
Set Grain Position...
Set Movie Clone Source

Use Scripting to make global or progressive changes to animation files

Save Movie
Save options:
○ Save current frame as image
○ Save movie as QuickTime
● Save movie as numbered files
○ Save movie as GIF animation

Cancel   OK

Save as... Image, QuickTime AVI, numbered files or as GIF animation

Brushes

Cloning Image Hose

Mosaics Art Materials

Input

Canvas

Output

Preferences

Internet

Movies

Selections

Effects

Masks   Shapes   Floaters

14

Digital Video and Animation

Understanding Animation

Painter offers a number of cool features that give you the power to work with video and create animations, including onion skinning and rotoscoping. Onion skinning is a feature animators use to view previous and future frames while working in the current frame. Rotoscoping is the ability to paint on and apply effects to existing movies. Painter's controls allow you to clone, trace, edit and composite movies.

In this chapter you'll learn animation and compositing techniques. You'll learn how to create, open and modify movies, how to navigate the **Frame Stacks** palette and how to export movies to QuickTime (Macintosh) or Microsoft Video for Windows™ (VFW or AVI) format (Windows).

How You Can Use Painter to Create Animation and Video

Creating Animations

Painter has powerful features that simplify animation and help you get the best quality possible. You can use Painter's Natural-Media tools to create your own animations with a traditional look. Onion-skinning allows you to see multiple frames at the same time. In Painter, you can view up to five frames at a time, the current frame and four other frames adjacent to it. This will help you determine where the next frame of motion should be drawn. You can play back your animation over and over as you create it, to be sure you have the correct flow of movement.

Working with Video

Painter offers certain ways of working with video that other QuickTime/AVI applications don't. You can use any of Painter's brushes, textures, and effects to modify a QuickTime/AVI movie. You can paint directly into video frames, you can clone video using Painter's Natural-Media tools, and you can combine or *composite* portions of one video clip with another.

When you open a QuickTime/AVI movie, Painter automatically converts it to a *frame stack*. A frame stack is a series of images, each equal in size and resolution.

Painter does not provide features for working with audio.

When you're finished with the movie in Painter, you can save it as a QuickTime/AVI or animated GIF file. You can then open the QuickTime/AVI movie in a video-editing application, like Adobe Premiere or Avid VideoShop, where you can add sound effects and other finishing touches.

Movies and File Size

Before making movies, understand that video and animation can produce huge files. When planning a project, be careful that you don't over-estimate your available disk space. To get an idea of disk requirements, consider this example: Each 640 x 480, 24-bit color frame is 1.2 MB. At this size, a 12 fps, 30-second animation would consume more than 400 MB of disk space.

To calculate the disk space required for a frame stack:

1 (Frame Width) x (Frame Height) x (Bytes per Pixel) x (number of frames)= Bytes required to save the frame stack.

2 Divide by 1024 to convert to kilobytes.

24-bit color with an 8-bit mask is 4 bytes per pixel.

When a movie is saved as QuickTime/AVI, the file size may be reduced by compression. For more information on compression, refer to .

Navigating through a Movie

The Frame Stacks Palette

In Painter, digital video and animation files are called movies or frame stacks. Whether you're working with imported video or building a new animation, the tools you'll use are the same. They're found on the **Frame Stacks** palette and in the **Movie** menu.

Current Frame
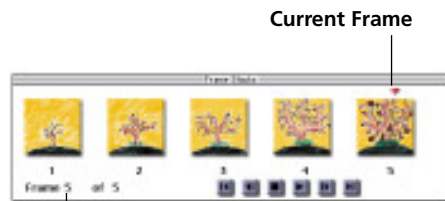
Frame Number

The controls on the bottom of the palette are much like those on a VCR.

Painter's frame stack format is a series of images, each equal in size and resolution. The **Frame Stacks** palette appears whenever you open or create a movie file. The **Frame Stacks** palette must stay open while you work with a movie.

You'll work in one frame at a time—the one appearing in the image window. The **Frame Stacks** palette helps you navigate the frames in the stack and choose which frame to modify.

Icon	Keyboard shortcut
	Home

Rewind returns to the first frame in a stack.

| | Page Down |

Step Reverse moves back one frame. For example, from frame 3 to frame 2.

| | Command-./Ctrl+. |

Stop halts a frame stack that's playing.

| | Command-Shift-P/Ctrl+Shift+P |

Play plays the frame stack.

| | Page Up |

Step Forward advances to the next frame. When the current frame is the last in the stack, this button adds one new frame to the end of a movie and advances to it.

| | End |

Fast Forward advances to the last frame in the stack.

You can modify all frames in a stack with a single command by applying a recorded script to the movie. For tips on applying scripts to a movie, refer to, "Applying a Script to a Movie" on page 303.

The **Frame Stacks** palette displays thumbnails of several frames. The frame numbers appear under the thumbnails. The current frame is shown with a red triangle over it.

The number of thumbnails is determined by the layers of onion skin you've chosen. By default, QuickTime/AVI files are opened with two layers of onion skin. More information on onion skin appears in "Understanding Onion-Skinning" on page 309.

You can select a particular frame by clicking its thumbnail.

To jump to a particular frame, choose **Movie menu▸ Go To Frame** and enter the number of the frame you want.

Creating a New Movie

The first step in creating a new animation is to create a movie file. Movie files are automatically saved as you proceed from frame to frame.

To create a new Painter movie:

1 Choose **File menu▶ New**. The **New Picture** dialog appears.
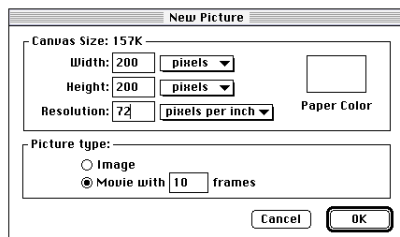
You can create a single image or a movie from the New Picture dialog.

2 Select the frame size and paper color you want.

The standard digital video frame is 640 x 480 pixels, which is a 4:3 aspect ratio. Many people work at sizes consistent with this aspect ratio.

3 Click the **Movie** radio button under **Picture Type** and enter the number of frames you want to create. Remember, you will be able to add and delete frames at any time.

4 Click **OK**. A dialog prompts you to name your new movie.
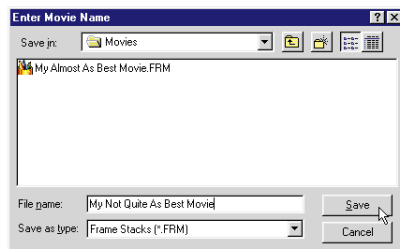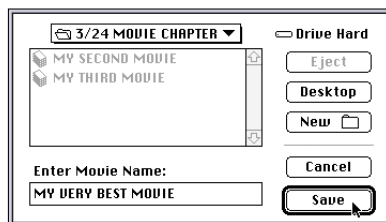
Name your new movie.

5 Type a name for the movie and click **Save**. The **New Frame Stack** dialog appears.
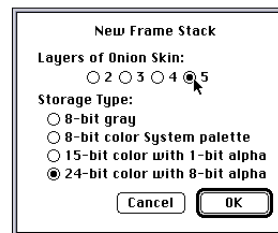
Define the onion skin layers and storage type of your new frame stack.

6 Choose the layers of onion skin and the storage type.

Layers of Onion Skin determines the number of frames displayed in the **Frame Stacks** palette. Only frames displayed in the **Frames Stacks** palette can be used for onion-skinning. For more information on onion skins, refer to .

Storage Type determines the color depth for the new movie. The storage type you choose depends on your goals for the project. If you want to maintain a selection in frames other than the current frame, you'll need to choose the 15-bit or 24-bit storage type. This will allow you to take advantage of compositing options that require the selection layer. You have the following options:

8-bit gray 256 levels of gray.

8-bit color System palette 256 colors.

15-bit color with 1-bit mask 32,768 colors and a layer for a mask.

24-bit color with 8-bit mask 16.7 million colors and a layer for an anti-aliased mask.

The storage type lets you specify the color depth for saving each frame. This applies to the saved frame stack—not to working in the current frame. For example, choosing 256 colors as the storage type still allows you to work with a selection and 24-bit tools in the image window for the current frame. As soon as you change frames, however, the image is saved in the 256 color format and the selection is lost.

7 Click **OK**.

When the movie opens, the **Frame Stacks** palette appears and the image window displays the first frame of the movie.
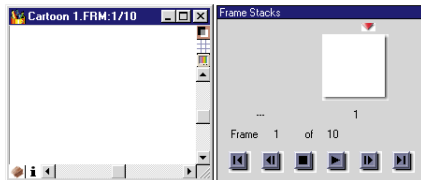
A blank image window and the Frame Stacks palette appear.

Painter saves frame stacks automatically. The **Save As** command is used for exporting the movie to other formats.

Opening an Existing Movie

Quite often, you'll start by opening a movie created in another program—like a captured video segment. You'll also open an existing movie if you worked on a frame stack earlier and now want to return to it.

For efficiency, don't bring in more video frames than you're going to work on. For example, if you have a two minute video clip and you want to paint on the first 10 seconds, don't open the entire clip in Painter. You're better off separating the first 10 seconds in your editing application and bringing in just those frames. After finishing that clip in Painter, you can join it to the other part in your editing application.

To open a QuickTime/AVI movie or a Painter frame stack:

1 Choose **File menu▸ Open**. A dialog appears. Locate and open the movie or frame stack you want.

When a file is selected, the dialog shows the frame size, file size, and the number of frames. If a preview is available, it will show a thumbnail of the first frame.

2 Click **Open**. The **Open Frame Stack** dialog appears.

3 Choose the number of onion skin layers you want to appear in the **Frame Stacks** palette. The layers of onion skin also determine the number of thumbnails visible in the **Frame Stacks** palette. In most cases, you'll want four or five layers.

4 Click **OK**. The **Frame Stacks** palette appears and the image window displays the first frame of the movie.

When you open a QuickTime/AVI movie, Painter makes a frame stack copy of the movie. This ensures the original won't be changed.

Framestacks are uncompressed so you will need an adequate amount of disk space to create them. For example a 1MB QuickTime/AVI movie can become a 20MB framestack.

Modifying Existing Movies

Frames can be added, deleted or erased to any animated stack. These changes cannot be undone, so it is recommended that you create your animation in segments and combine them when you are finished.

Adding Frames to a Movie

You can add frames at any time to your movie. Frames can be added at the end or beginning of a movie or between any frame in the stack. You can also repeat the last frame at the end of the stack.

1 Choose **Movie menu▸ Add Frames**. A dialog prompts you to enter the number of frames to add and choose where to insert them.
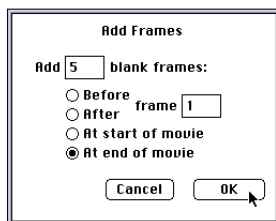
The Add Frames to Movie dialog.

2 Click **Before** or **After** and enter a frame number as reference. For example, to add 6 blank frames before frame 10,

enter 6 in the **Add** box, click **Before**, and enter **10** in the frame number box. To add frames before frame 1, click **At start of movie**. To add frames after the last frame, click **At end of movie**.

3 When you've set the number and selected the insertion point, click **OK**.

When the current frame is the last frame, you can add a new frame to the end of the movie by clicking the **Step Forward** button in the **Frame Stacks** palette.

The **Movie menu▸ Clear New Frames** option controls the content of the new frames added with **Step Forward**. When **Movie menu▸ Clear New Frames** is enabled (has a check beside it), new frames are blank. When this option is disabled, new frames copy the image from the last frame.

Deleting Frames from a Movie

1 Choose **Movie menu▸ Delete Frames**. A dialog appears.
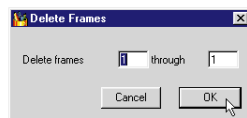
The Delete Frames dialog.

2 Enter the range of frames you wish to delete and click **OK**. For example, to delete frames 7 through 22, you would enter those frame numbers in the dialog and then click **OK**.

Erasing Frames in a Movie

Erasing clears the image to the paper color. The frames themselves remain in the movie.

1 Choose **Movie menu▸ Erase Frames**. A dialog appears.

2 Enter the range of frames you wish to erase and click **OK**. For example, to erase frames 7 through 22, you would enter those frame numbers in the dialog and click **OK**.
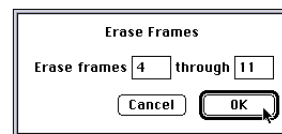
The Erase Frames dialog.

Combining Movies

Inserting a movie lets you add the contents of another frame stack to the current movie.

Painter will insert only a Painter movie, not QuickTime/AVI or numbered files. Convert your files to a Painter movie before trying to insert them.

The movie you insert must have the same frame size (width and height) as the current movie.

You'll get better results if the movie you insert is designed for the same frame rate as the current movie.

To insert a movie:

1 Choose **Movie menu▶ Insert a Movie**. The **Insert Movie** dialog appears.
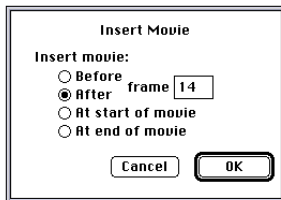
The Insert Movie dialog.

2 Choose where you want to insert the movie and click **OK**. The **Select Movie** dialog appears.

3 Navigate to find and open the movie you want to insert. Painter inserts all the frames in the movie into your current movie

4 If inserting numbered frames, double-click the first numbered file. You may also select it and click **Open**.

Rotoscoping

Rotoscoping is the process of painting on a movie or compositing a portion of the images from one movie with the images of another. This is often done to put the action of a person filmed in one place on a background filmed in another. You can also use rotoscoping to remove an element from a video clip. As an example, we made a short movie of paint pouring from a Painter paint can.

We filmed the pouring sequence against a white backdrop. After capturing the video digitally, we imported it into Painter and removed the hands frame by frame using Painter's masking tools. We then replaced that area of the image with a frame containing the empty background.

Rotoscoping is also useful for adding the background to animations created in Painter. The process is the same whether you're working with digitized video or painted animation cels.
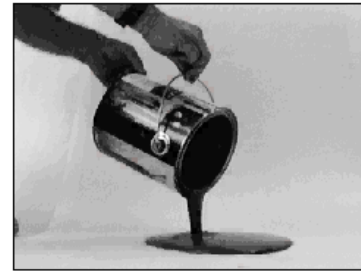
At the top is a frame of a movie showing hands holding the Painter can. The left frame below shows can without hands. Frame, right, shows mask used to hide the hands.

Applying a Script to a Movie

You might want to repeat the same actions for each frame in a movie. Painter helps you expedite the process with the **Script** feature. For example, you might want to apply an effect like Glass Distortion to a video clip. You can record a script that applies the Glass Distortion effect to a single image, then with a single command, apply that script to the entire movie.

For complete information on working with scripts, refer to Chapter 15, "Scripts."

A script may contain almost any action—a single command, a series of commands, or the many steps in creating an original drawing. You'll devise scripts based on the needs of your project.

Warning! There is no Undo for applying a script to a movie. You might want to work with a copy of the movie, or you might apply the script to a short, sample movie to test it.

To create a script for a movie:

1 Become familiar with recording a script in Chapter 15, "Scripts."

2 Working with a separate sample image, determine the precise set of actions you want to record as a script. For example, applying the Adjust Colors or Brightness/Contrast effect.

3 When you've determined the actions, start over with your sample image. This time, record the entire process as a script.

4 Save the script and assign it a descriptive name—You might want to use it on a different project sometime in the future.

To apply a script to a movie:

1 Open the movie to which you want to apply the script.

2 Choose **Movie menu▶ Apply Script to Movie**. Painter opens a dialog that lists the scripts in the current library and offers options for using them.

3 Double-click the script you saved.
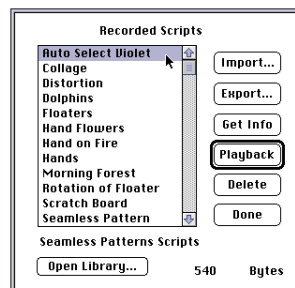
Use Script Playback to apply a script to a movie.

Painter applies that script to each frame in the stack. If you have few, small frames in your movie, and the script is not a complicated one, the script may be applied quickly. If the movie has several large frames, a complicated script could take a long time.

Using Scripts to Set Grain Position

You might use a script to apply a surface texture (paper grain) to an entire movie. In this case, you have several options for the position of the grain in each frame. You can put the grain in exactly the same position, move the grain randomly, or move it linearly by a set number of pixels.

To set grain position:

1 Record a script that applies surface texture or dye concentration to an entire image.

For instructions on applying surface texture and dye concentration, refer to Chapter 13, "Image Effects." For instructions on recording a script, refer to Chapter 15, "Scripts."

2 Choose **Movie menu▶ Set Grain Position**. The **Frame-to-Frame Grain Position** dialog appears.
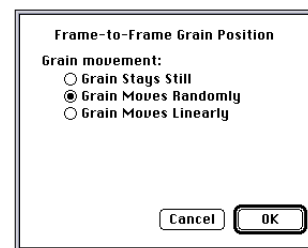
Select the paper grain movement.

3 Make your selections as needed:

Grain Stays Still allows the grain to remain in the same position throughout the movie.

Grain Moves Randomly moves the grain as the movie plays. To make grain move randomly: Before you record your surface texture or dye concentration

script, choose **Objects palette: Script menu▶ Script Options**. And in the dialog, make sure **Record Initial State** is disabled.

Grain Moves Linearly increment the grain movement. Fill in the number of pixels you want the grain to move horizontally and vertically from one frame to the next.

4 Click **OK**.

5 Apply the grain script by choosing **Movie menu▶ Apply Script to Movie**, Painter textures each frame according to your selected method.

Using Scripts to Apply Brush Strokes

Painter also lets you apply a brush stroke to a movie.

Painter divides the stroke into as many segments as there are frames and places the segments in successive frames.

This feature is most useful when used with the Image Hose. When you apply a brush stroke to a movie using the Image Hose brush, Painter deposits one or more Nozzle images on each frame. If the Nozzle file is an animated sequence—for example, a person walking, Painter can drop successive images on successive frames. Play the movie back, and the person walks across the image window. In order for this to work, you must set up the Nozzle file

appropriately and have the right Image Hose brush size. For more information, refer to Chapter 7, "The Image Hose."

To apply a brush stroke script:

1 Record a brush stroke using **Brushes palette: Stroke menu▶ Record Stroke**. For more information on this feature, refer to "Recording and Playing Back Strokes" on page 47.

2 Open a movie file.

3 Choose **Movie menu▶ Apply Brush Stroke to Movie**.

Compositing Movies

You can composite two movies together into one, for example to composite a foreground action against a new background. In order to do this, you must mask the foreground action in each frame.

To composite one movie with another:

1 You must create a selection for each frame as you work. You can also create a new user mask for each frame and load it as a selection as you work. The loaded selection should carefully exclude the foreground image. Because the foreground image continues to move, the selection in each frame must be different.
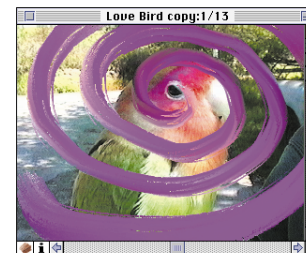
You can apply a brush stroke to a movie. If you use the Image Hose, you will have to pay attention to size and spacing.

Because you can set Painter to draw either inside or outside of a selection, you may mask whichever is easiest—then set the drawing mode accordingly.

When the background is uniform—all white, for example, you can take advantage of Painter's automatic selection and script features to mask each frame.

2 When each frame of the foreground is properly protected by a selection, open the background movie. If the background doesn't move, you can use a single image instead of a movie. You now have both movies open. Make sure both are rewound to frame 1.

3 With the background movie selected, choose **Movie menu▶ Set Movie Clone Source**. If you are using a single image, not a movie, choose **File menu▶ Clone Source▶ Image Title**.

4 Select the foreground movie. Check the drawing mode. If you masked the portion of the image that you want to keep, Painter's Drawing mode should be set to the second button for "draw outside." You may invert the selection instead of using the Drawing mode.

5 Choose the **Cloning** brush from the **Brushes** palette. If you want to bring the background across perfectly, select the **Straight Cloner** variant. You can now paint in the foreground movie to fill in the background from the other movie.

6 When you finish the first frame, click **Step Forward** button. Painter automatically advances the foreground and clone source movies by one frame. The movies stay synchronized as you proceed.

To composite two movies, create a selection in each frame to protect the foreground movie. You may also create a user mask, as shown, and load it as a selection.

The movies are composited frame by frame.

7 If you want to automate the painting process, you can record the complete painting of one frame as a script, then apply that script to the entire movie. Of course, this assumes that the entire movie can use the cloned background.

Automatic Selecting and Scripting for Efficiency in Compositing

When compositing movies, it takes a long time to generate selections for each frame and then paint in the background movie before moving on to the next frame. Scripting can make this much easier and faster.

To use Scripting and Auto Select to create a movie:

1 Work with a separate, sample image to determine which masking feature works best with your image. You can use **Auto Select** or **Color Select**.

2 When you've determined the settings for the best method, start over. This time, record the **Auto Select** or **Color Select** process as a script. When you've finished creating the selection, stop recording. Save the script.

3 Open the frame stack you wish to create selections in. Choose **Movie menu▶ Apply Script to Movie**. In the dialog, select the **Auto Select** or **Color Select** script you saved.

Painter applies that script to each frame in the stack.
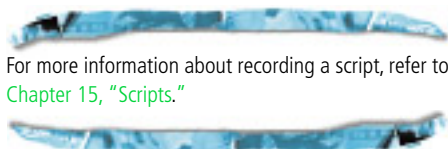
Original frame stack of the background movie.

The frame stack of the foreground movie where the selection of the bird is generated.
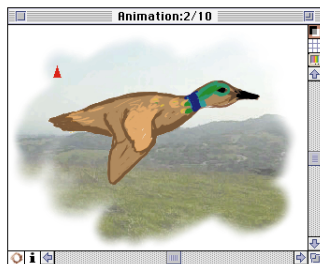
The original frame stack composited into the scripted Auto Selection.

Applying Effects to a Single Frame

You may not want to apply effects using scripts to the entire movie. You may want to apply effects to a single frame.

To paint on or apply an effect to a single frame:

1 Using the **Frame Stacks** palette, go to the frame you want to work in. To go to a frame, you may click on the thumbnail of the frame or click the **Step Forward** button to advance to the frame. You may also choose **Movie menu▶ Go to Frame** and enter the number of the frame to which you want to go.

2 When the frame appears in the image window, you may use any of Painter's Natural-Media tools to modify the image. Anything you can do in a single image, you can do in a frame. Paint with a brush, add floaters, or apply an effect to a selection or to the entire image.

Paint on the image in the image window—not on the thumbnail in the **Frame Stacks** palette.

3 When you're ready to work on the next frame, click the **Step Forward** button.

Changing frames automatically saves the frame. You cannot undo changes after the frame is saved.

Cloning a Movie

Cloning from one movie to another is almost exactly like cloning from one image to another. The only difference is that you must identify to Painter that you want to clone *from one sequence* of frames *to another sequence* of frames. In this case, by advancing one frame in the clone frame stack, Painter automatically advances one frame in the source frame stack.

Note: If you have a Painter movie open and you choose **File menu▶ Clone**, Painter will create a clone only of the frame in the image window.

To clone a movie:

1 Open the source movie you want to clone. Choose **File menu▶ Open**.

2 Create a new movie with the same dimensions and number of frames as the source. For more information on creating a new movie, refer to "Creating a New Movie" on page 300.

With these two frame stacks open, you're ready to clone the source into the new movie.

3 With the original movie selected and rewound to frame #1, choose **Movie menu▶ Set Movie Clone Source**.

When you choose **Set Movie Clone Source**, the current frame in the clone is matched to the current frame in the source. If both movies are rewound to frame #1, the clone-to-source correspondence is 1-1, 2-2, 3-3.... This means that the source for frame #1 in the clone movie is frame #1 in the source movie, and so on.

If you like, you can create a different correspondence by choosing other frames before setting the movie clone source. For example, if the current frame of the clone movie is frame #1 and the current frame of the source movie is frame #5, the correspondence would be 1-5, 2-6, 3-7.... This means that the source for frame #1 in the clone movie is frame #5 in the source movie, and so on.

4 Select the new movie. Using any **Cloners** brush, paint into the image window. You will be painting the source movie into the clone.

For information on cloning brushes, refer to Chapter 5, "Cloning and Tracing."

You can control the areas cloned by setting up a selection in the clone movie. For complete information on creating selections, refer to Chapter 9, "Selections and Masks."

5 When you're finished cloning in one frame, advance to the next one. Painter automatically advances the clone source to maintain the correspondence.

You can also use AutoClone to do the cloning. You also can record an AutoClone script and apply the script to the new movie with a Cloners brush selected. First record the Auto Clone effect on a sample image and save the script. Open the frame stack you wish to clone in. Choose **Movie menu▶ Apply Script to Movie**. In the dialog, select the **Auto Clone** script you saved. Painter will Auto Clone the source movie into the destination movie.

Tracing a Movie

Have you ever wanted to animate your own cartoon but didn't know where to start? Painter's **Tracing Paper** command (**Canvas menu▶ Tracing Paper**) makes it possible to trace the contents of a movie into a brand new animated feature. This is particularly useful with video as the source.

For best results, the source should have the same frame rate you intend for the animation. For more information on frame rates, refer to "Frame Rate—A Matter of Timing" on page 312.
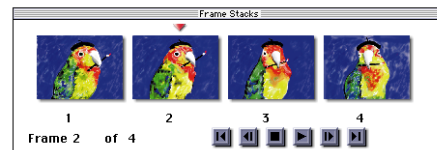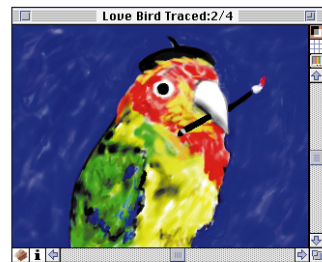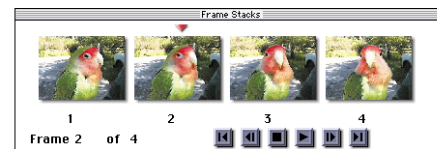
Clone a movie to create an animation.

1 Open the source movie you want to trace. Choose **File menu▸ Open**.

2 Open a new movie with the same dimensions and number of frames as the source.

With these two frame stacks open, you're ready to trace the source into the new movie.

3 With the original movie selected and rewound to frame 1, choose **Movie menu▸ Set Movie Clone Source**.

4 Select the new movie and choose **Canvas menu▸ Tracing Paper**. The first frame of the original movie appears ghosted in the first frame of the new movie.

5 Trace the first frame using any of Painter's tools, textures and effects.

6 When finished, click the **Step Forward** button in the **Frame Stacks** palette (or press **Page Up**) and trace the second frame.

7 Continue frame by frame until you have created your own animation.

Creating an Animation

An animation is a series of drawings with progressive change. When viewed in rapid succession, they create a moving image.

Because Painter has its full suite of Natural-Media tools and effects available for each image in a frame stack, it's an extraordinary program for creating original animation.

Painter offers several methods to create original animations:

- By cloning or tracing video as described in the previous section

- By manipulating floaters

- By drawing each frame by hand

Understanding Onion-Skinning

Traditional cartoon animators work on an onion skin paper that allows them to see a sequence of frames through the transparent layers. They then draw successive frames using the previous frames for reference. Seeing the several images superimposed helps in incrementing the action evenly.

Painter allows you to work in two to five layers of onion skin. You select the number of layers when you open a frame stack. To change the number of layers, close the file and select more layers when you open it again.

Tracing Paper (onion skin view) off.

The Frame Stacks palette displays the frames available for onion skin layers.
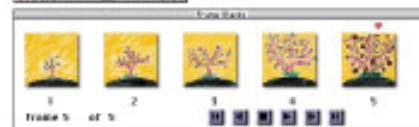
Tracing Paper on.

Each frame in the frame stack represents one onion skin layer. The image in the current frame appears the darkest

To use the onion skin feature, simply choose **Canvas menu▸ Tracing Paper** or press **Command-T/Ctrl+T**.

In the image window, the current frame appears darkest. Each frame moving away is progressively fainter.

The **Frame Stacks** palette displays a linear view of the onion skin layers. Each thumbnail represents one onion skin layer, and the thumbnail of the current frame has a red triangle above it.

You may view with the current frame in any position of the onion skin sequence. Click on any thumbnail in the **Frame Stacks** palette to change the current frame position.

For example, if you want to display the reference frames before the current frame, set the current frame to the far-right position in the palette. If you want to display the frames before and after the current frame, set the current frame to the middle thumbnail in the palette.
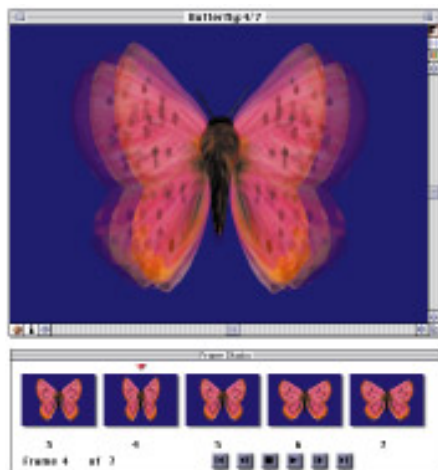
When the current frame is placed at the right, only before onion skin layers are displayed.

Change the position of the current frame to display before and after layers.

Animating Floaters

A simple animation you can create in Painter is moving a floater across a series of frames.

To create motion with a floater:

1 Open a new Painter movie of 1 frame. Choose **File menu▶ New**.

2 Open the **Floaters** palette by choosing **Objects palette: Floater menu▶ Floater Portfolio**. The **Floaters** portfolio appears.

Select a floater from the Floaters portfolio.

3 Drag a floater from the **Floaters** portfolio to the image window. Position the floater to the far left of the image window.

4 Click the **Frame Forward** button on the **Frame Stack** palette. Painter adds a frame and advances to it.

When you leaving a frame to go to the next one, Painter drops the floater in the previous frame. The floater contents become part of the image in the previous frame, but keeps floating above the current frame.

5 Tap the **Right Arrow** key five times to nudge the floater toward the center of the frame. You may also rotate the floater or any other action.

6 Repeat steps 3 through 5 until you've created a dozen frames.
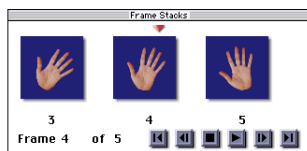
By changing position, a floater appears to move across the frame.

7 In the last frame, click in the image window to drop the floater.

8 Now click the **Play** button on the **Frame Stacks** palette. The floater image slides or rotates across the screen.

This is the most basic example of animating a floater. Adding multiple floaters allows you to layer them.

You can group floaters and move them together, but be careful. As soon as you leave a frame, the floaters in it are placed or "dropped" and the changes are saved. For this reason, you want to work from the background forward. Start by animating what's farthest from your point of view.

The more you work with floaters, the more creative ways you'll find to animate them
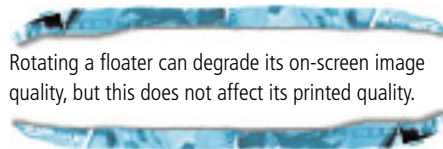
Rotating a floater can degrade its on-screen image quality, but this does not affect its printed quality.

Duplicating a Cycled Action

Many animated actions cycle, a person walking for example. You want only to draw the cycle once, then duplicate it as many times as needed.

This example shows a dog scratching as a cycled action. You draw the frames once, then repeat them.

The beginning and ending images need to be the same—in this example the dog would be in the sitting position at the beginning and the end. This way, when the end of one cycle is "hooked up" to the beginning of the next, the action continues smoothly.

Scrolling a background is another example of a cycled action. Commonly, a subject remains in one place while the background slides by.

Animation Considerations

This section provides more information on creating animations. These topics will give you ideas about how to work.

Color

You might want to create a color set for the animation. Creating a color set helps you better control the use of color. For example, you wouldn't want the colors of your characters shifting between frames. Using a particular color set prevents this from happening.

Not all colors are video legal. For more information on colors, refer to Chapter 8, "Applying Art Materials."

You might want to set up an image of each character with annotations to specify which colors to use in which areas.

Frame Rate—A Matter of Timing

To understand the process of creating an original animation, you need to look at the implications of frame rate. Frame rate describes the number of image frames displayed per second (fps).

When you save a movie as a QuickTime/AVI file, you can specify the rate of display. This doesn't necessarily mean that what you specify is what you'll experience. Factors like frame size, compression method, and computer speed can prevent some movies from achieving their set rate.

If your animations are going no farther than the computer, frame rates of 8, 10, and 12 fps are good choices.

If you intend to create your work for NTSC video, 15 fps is a good choice. If you're less concerned with quality, you might use 10 fps.

- The frame rate of film is 24 fps.

- The frame rate of NTSC video is 30 fps (29.97 fps in broadcast video). This is the video standard used in the United States

- The frame rate of PAL video is 25 fps.

These frame rates are sufficient to produce smooth, continuous motion with filmed or video-recorded subjects.

Animation drawings contain far less detail than live-action images. The difference in the level of detail allows animations to be produced at frame rates significantly below

those designed for live action. Because of the smoothness of color fills and continuity between images, animations can look quite nice at rates between 10 and 15 frames per second.

Frame Rate and Animations In Painter

Painter is an animation *creation* tool. You need to consider frame rates to know how many drawings are needed to make actions smooth, natural, and consistent throughout the project.

The computer can display frames at any reasonable rate. You'll define the rate after creating the artwork. The **Frame Stacks** palette does not provide control over frame display rates. For more control over display rates, save the movie as QuickTime/AVI.

You can't display different sections of a movie at different rates. What you can do is create sections separately at different rates, then modulate them to the same rate before joining them. This is the kind of work you'll do in your video-editing application.

Saving and Exporting Painter Movies

Painter provides several options for saving and exporting your finished movies.

Exporting a Single Image from a Movie

To export a frame as a single image.

1 Display the frame you want to export in the image window. You can click on the frame thumbnail in the **Frame Stacks** palette, or use the controls in the **Frames Stacks** palette to display the frame.

2 Choose **File menu▸ Save As**. The **Save Movie** dialog appears.

3 Select **Save current frame as image**.

4 Click **OK**. A standard **Save** dialog appears.

5 Navigate to a location where you want the file saved, choose a file format type, enter a name for the file, and click **Save**.

Some file format types (like QuickTime and Video for Windows) have compression options available.

Exporting Movies as a QuickTime Movie (Macintosh)

If you are using a Macintosh system, you may want to export your movie as a QuickTime movie.

To export a Painter movie as a QuickTime movie:

1 Choose **File menu▸ Save As**. The **Save Movie** dialog appears.
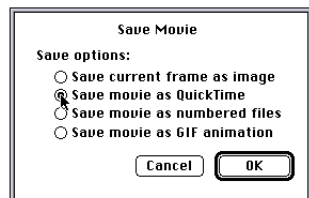
The Save Movie dialog.

2 Select **Save movie as QuickTime**.

3 Click **OK**. The standard **Save** dialog appears.

4 Navigate to a location where you want the movie saved, enter a name for the movie, and click **Save**. The **Compression Settings** dialog appears.
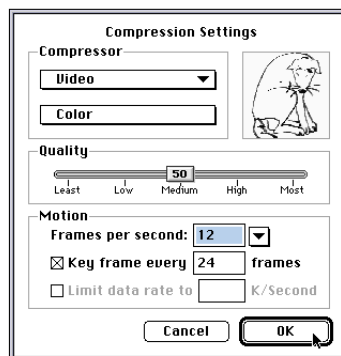
The Compression Settings dialog.

5 Make a selection from the **Compressor** pop-up.

QuickTime supports several compression schemes. The following descriptions should help you choose one; however, you'll probably want to experiment with different compressors and settings to identify the best settings for your work.

Animation The Animation compressor works well with areas of continuous tome. At the **Most Quality** setting with every frame a key frame, this compressor is lossless.

For most Painter animations, this compressor is a good choice.

Cinepak Cinepak produces acceptable motion and image quality at remarkably small file sizes. It is the preferred format for CD-ROM delivery and transfer across the Internet.

Cinepak takes an excruciatingly long time to compress, and it can be difficult to find the best compression settings for certain image types and frame rates.

Graphics The Graphics compressor is limited to 256 colors. It compresses the file at a greater ratio than the Animation compressor, but does not play as quickly.

None No compressions is used, to the images retain all of their quality. With a large frame size, some computers might not be fast enough to play at a high frame rate.

Photo-JPEG JPEG is an international standard for image compression. It allows high compression ratios while maintaining excellent image quality. However, it does not play at high rates.

Video The Video compressor is designed for recording and playing back digitized video at high rates. Because of the spatial compression method it uses, the Video compressor does not provide great results for images with large areas of continuous tone, such as those in most animations.

Note: You may have additional compressors available.

6 Select a value for the **Quality**.

The compression ratio is inversely proportional to image quality. The slider allows you to set an optimum between the amount of compression and image quality. For most work in Painter, you'll want **Quality** set to high.

7 Make other selections as needed based on the following information:

Frames per second controls the speed of display. Enter the number of frames you want displayed in a second. You may also use the pop-up to the right to choose one of the common frame rates.

With **Key frame every**, the key frame is used in temporal compression methods. Each key frame is stored in its entirety. The next set of frames—up to the next key—are saved only as changes.

Limit data rate determines the limit for the data rate. This is only available for some compressors. The data rate limit overrides the Quality setting if necessary, to keep the compressed movie within the set limit.

8 Click **OK**. The movie is saved.

Exporting a Movie as an AVI Movie (Windows)

If you are using a Windows system, you may want to export your movie as and AVI movie.

To export a Painter movie as an AVI movie:

1 Choose **File menu▶ Save As**. The **Save Movie** dialog appears.
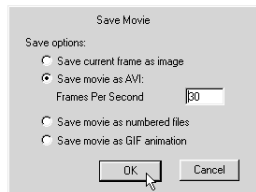
The Save Movie dialog.

2 Select **Save movie as AVI**. The **Frames Per Second** option appears in the dialog.

3 Click **OK**. The standard **Save** dialog appears.

4 Navigate to a location where you want the movie saved, enter a name for the movie, and click **Save**. The **Video Compression** dialog appears.
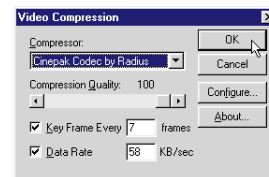
The Video Compression dialog.

5 Make a selection from the **Compressor** pop-up.

AVI supports several compression schemes. The following descriptions should help you choose one; however, you'll probably want to experiment with different compressors and settings to identify the best settings for your work.

You can press **Configure** to set other options for the selected compressor.

Cinepak produces acceptable motion and image quality at remarkably small file sizes. It is the preferred format for CD-ROM delivery and transfer across the Internet.

Cinepak takes an excruciatingly long time to compress, and it can be difficult to find the best compression settings for certain image types and frame rates.

Intel Indeo Video R3.2 is capable of full-motion playback on systems with a hardware compression accelerator.

Microsoft Video 1 is designed for recording and playing back digitized video at high rates.

Full Frames (Uncompressed) uses no compression, so the images retain all of their quality. With a large frame size, some computers might not be fast enough to play at a high frame rate.

This is the preferred format for transferring Painter movies to AVI-editing applications.

Note: You may have additional compressors available.

6 Select a value for the **Compression Quality**.

The compression ratio is inversely proportional to image quality. The slider allows you to set an optimum between the amount of compression and image quality. For most work in Painter, you'll want **Compression Quality** set to high.

7 Make other selections as needed based on the following information:

Key Frame Every uses the key frame in temporal compression methods. Each key frame is stored in its entirety. The next set of frames—up to the next key—are saved only as changes.

Data Rate determines the limit for the data rate. This is only available for some compressors. The data rate limit overrides the Quality setting if necessary, to keep the compressed movie within the set limit.

8 Click **OK**. The movie is saved.

Working with Numbered Files

Painter support importing and exporting as numbered files. Numbered files are any series of files which are the same size and resolution and named following a specific style, which includes a number at the end of each file name. For example, the first frame might be called Movie01, the second frame Movie02, and so on.

Importing Numbered Files as Movies

Some 3D and animation programs export animations as a series of numbered files. This is an excellent method of bringing the animation into Painter.

When importing numbered files into Painter, the file type must be supported by Painter, and the number of digits in each of the numbered files must be the same.

If the number of files is 10 or more, the single-digit numbering must begin with a zero. If the number of files is 100 or more, the single-digit numbering must begin with "00," and the double-digit numbering must begin with a zero.

To import numbered files:

1 Choose **File menu▶ Open**. The Open dialog appears.

2 Click the **Open Numbered Files** check box at the bottom-left of the dialog.

A message appears in the dialog asking you to select the first numbered file of the sequence.

3 Double-click the first numbered file. You may also select it and click **Open**.

A message now asks you to select the last numbered file of the sequence you want to import.

4 Double-click the last numbered file. You may also select it and click **Open**. A standard **Save** dialog appears.

5 Navigate to a location where you want the movie saved, enter a name for the file and click **Save**.

6 Make your selection for layers of onion skin and storage type. For more information on these dialog options, refer to "Creating a New Movie" on page 300.

7 Click **OK**. Painter sequences the images into the frames of a new frame stack.

Exporting Movies as Numbered Files

You may need to export to numbered files so you can import your movie into a new environment that doesn't support Painter's standard formats.

To export a movie as numbered files:

1 Choose **File menu▶ Save As**. The **Save Movie** dialog appears.

2 Select **Save movie as numbered files**.

3 Click **OK**. A standard **Save** dialog appears.

4 Navigate to a location where you want the file saved, choose a file format type, and enter a name for the file.

When you save as numbered files, you must begin or end the file name with a number—for example, "01Movie," or "Animation01."

5 Click **Save**. Every frame in the movie is saved as a separate file.

Animations for the WWW

Painter lets you export a frame stack as an animated GIF. The animated GIF format is ideal for displaying simple animations on the World Wide Web (www).

Animated GIFs are easy to create and add to your Web pages. You give them the same HTML tag you would any GIF image. The only difference is that the browser displays the file as an animation. Animated GIFs may be used as a link anchor or as an image map. Animated GIFs may not be used in the background.

The client browser must support GIF animations for the images to display properly. The latest versions of Netscape and Internet Explorer support GIF animation.
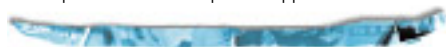
Creating Animated GIFs

If your movie is intended for the Web, you will want to consider several issues while you create it.

To create a GIF animation:

1 Create your animation in a Painter frame stack. Take advantage of your favorite animation features and techniques to develop the images.

As you design your animation, consider the file size and transfer time necessary. Your animations will be more accessible if they're small enough to download in a reasonable time. You can minimize file size by compromising in several ways.

- **Reduce the frame size.** A smaller rectangle (x, y dimensions in pixels) leads to smaller files.

- **Limit the number of frames.** Each frame increases the file size, so if you can get by with fewer frames, do it.

- **Limit the number of colors.** Fewer colors in the image allow the software to use a reduced color palette for the image. Lower color palettes lead to smaller files.
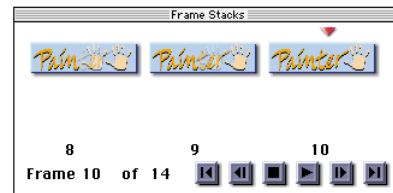
Good animations may not necessarily need a large number of frames.

For best results, choose colors from Painter's default 256-color color set. This color set matches Netscape's color palette, so the colors in your GIF will be reproduced on the client without dithering.

2 If the animation requires transparency, you'll need to set up a selection for each frame. For information on creating masks, refer to Chapter 9, "Selections and Masks."

3 Export it to **GIF** file format by choosing **File menu▸ Save As**.

Exporting Animated GIFs

When the frame stack has the animation you want, you're ready to export it as an animated GIF.

To export a frame stack as a GIF animation:

1 With the frame stack open, choose **File menu▸ Save As**. Painter displays a dialog that lets you choose the export format.

2 Choose **Save movie as GIF Animation**. Click **OK**.

3 Painter displays a standard **Save** dialog so you can choose a save destination and enter a file name. By convention, **GIF** files are given ".gif" as the file name suffix. Click **Save** to proceed.

4 Painter displays the GIF options dialog. Set your general GIF options. You can find more information on these GIF options in "Saving Documents" on page 30.
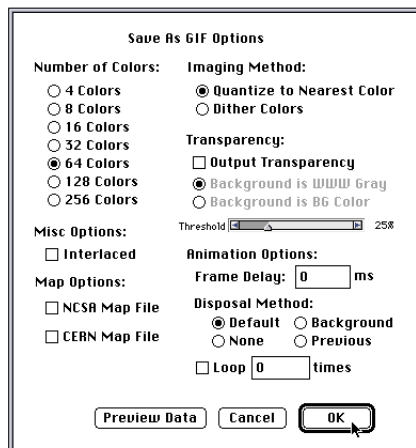
The Save as GIF Options dialog.

• Choose the number of colors and Imaging Method—Quantize or Dither. If you want the frames to display interlaced, enable that option.

• If you want your image to have transparency (and you set up a selection in each frame), enable the checkbox for **Output Transparency** and choose your background option.

You might need to adjust the **Threshold** slider to determine at what selection mask value the image becomes transparent. Use the **Preview Data** button to see how the **Threshold** slider is affecting the transparency of the first frame of your image.

5 Set your animation-specific GIF options— **Frame Delay**, **Disposal Method**, and **Looping**.

• The **Frame Delay** allows you to specify a pause (in 100ths of a second) between each frame. Without a delay, the frames appear as quickly as the system can load and display them. The display of each image (especially with larger frames) will vary between computer systems, so the actual animation display rate may be lower.

You can use the Frame Delay to approximate a particular frame rate. For example, you capture some one-quarter size video at 8 frames per second (fps). You want 8 frames to appear in one second, so divide one second (100 hundredths of a second) by 8. (8/100=12.5) Discard the decimal portion and enter 12 as the frame delay. Discarding the decimal is the only allowance for the time required to display each image. For a large frame size, you might want to allow more time for display.

- The **Disposal Method** applies to frames #2 through the penultimate frame. It lets you specify what happens to the image after it has been displayed. (After its Frame Delay is over.) The disposal method is significant only when transparency is used and it differs between frames.

  With **Default**, the client browser's default disposal method is used.

  With **None**, the image is left on screen and the next frame is rendered over it.

  With **Background**, the region covered by the image is restored to the background color.

  With **Previous**, the region covered by the graphic is returned to the imagery of the previous frame.

- If you want the animation to repeat, enable the **Loop** option. Enter the number of times the animation should repeat. If you want it to repeat indefinitely, enter 0 (zero).

6 When you've finished setting GIF options, click OK.

You can now use your browser to open the file and view the animation. You can place the animation on a Web page with the same image tag you'd use for a simple GIF.

In the client browser, the animation will appear one frame at a time during the download. In most cases, this will be significantly slower than the intended display rate. After all frames have been downloaded, the browser will loop the animation (if the loop option is used) with the specified delay between frames. The animation plays from the browser's cache, so it's much faster.

If the animation in the browser window stops playing, it's probably finished the set number of loops. In some browsers, you can get it started again by resizing the window. In all browsers, you can get it started again by reloading the page.

*Record actions
as a Script*

Script Options

☑ Record Initial State
☐ Save Frames on Playback
Every [10] 1/10ths of a Second

Cancel   OK

Objects:Scripts
P. Float   Floater   Mask   Script   Net

*Record, run, or
step through
Scripts using
the control strip*

Objects:Scripts
P. Float   Floater   Mask   Script   Net

Flower

Start Time
Start Random Number
Variant
Paper Texture
   Library "Paper Textures"
   Texture "Basic Paper"
   Invert Paper Texture
Paper Scale
   Scale 1.000000
Floaters Library
Gradation

*Store and
access Scripts
using the Recorded
Scripts List and
Script Library*

*Manage and edit Scripts
using the Scripts Palette*

▽ *Nested sublevels
Perform as a group or
as individual items*

Recorded Scripts

(Current Script)
4/10/97 8:00 PM
4/10/97 9:43 PM
Add Grain
Flower
Mineral Pattern
Morning Forest

Import...
Export...
Get Info
Open
Delete
Done

PAINTER.SSD

Open Library...   ...   Bytes

*Brushstrokes, Floaters,
Shapes, Selections,
custom Variants, Effects
- almost any process or
tool in Painter can be
part of a Script*

15

Scripts

Understanding Scripting

Scripts allow you to record every action
you make in Painter. Painter transparently
records all of your actions into an "always
script." You can also record a deliberate
set of actions into a specific script. Scripts
are similar to video tape. You can record,
edit, and play them back at any time from
the **Objects**: **Script palette**. But, there's
more! The ability to edit scripts step-by-
step also gives you more control over
recorded action sequences.

When you playback a script, sit back and watch Painter do the work. You can record anything in a script—from a single edit command to an entire work session.
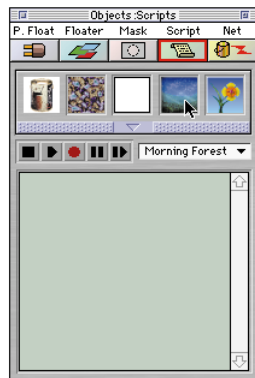
Scripts can be stored in a script library found on the Script palette.

There are a number of ways to take advantage of scripting:

- Scripts offers the ultimate in Undo. If you record your work, you can revert to any stage in the project by playing the script and stopping it at the stage you want.

- You can use scripts to create macros. If you have a repetitive task, or an operation you use frequently, you can record that

series of commands. Whenever you want Painter to perform the task, play the script. Let the script do the work for you.
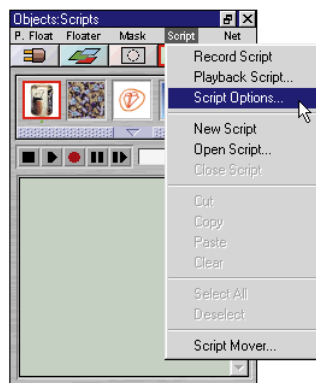
Record Script, and other commands are found under the Script menu.

- You can playback a script at a different resolution. This enables you to record at a low resolution, then automatically produce the same results at a higher resolution.

- You can record a script that will play back using the current art materials. For example, you could record a script for a complete pencil drawing. Then you decide you'd like to see the same drawing in chalk with a different paper texture. Open a new document and choose your art materials. Now, play back the script. Watch Painter repeat your drawing with chalk.

To make a script where you can change art materials on playback, you must disable the **Record Initial State** option on the **Script Options** dialog before you record the script.

- Scripts are a great educational tool. Playing the script of an art project lets you see the step-by-step process in which the image was created. The art appears, develops, and matures almost by magic. It's as if you are looking over the artist's shoulder.

- Scripts are particularly useful for working with movies. When you have an operation you want applied to each frame in a movie, record the set of commands in a script. You can then apply the script to the entire movie at one command.

- When you play a script, you can output it to a movie. Every action you take becomes a frame in the movie. This is a great way to create special effects for your QuickTime (Macintosh) or Video for Windows (Windows) movies.

How Scripts Work

The Script Recorder saves each instruction you give Painter, including what values, locations, colors, and textures are used. By repeating the instructions, Painter can reproduce the artwork "from scratch."

Because Painter saves instructions, scripts are efficient and flexible. For example, you can play a script one instruction at a time. You can also edit scripts, taking a few instructions from one script and inserting them in another one.

The Script Palette

The **Objects: Script palette** provides the basic tools for recording, playing, and storing scripts.

To open the **Objects: Script palette**, click the **Script** icon in the **Objects** palette.

The Scripts icon

Existing Scripts

Push Bar

Play Controls

Open Script
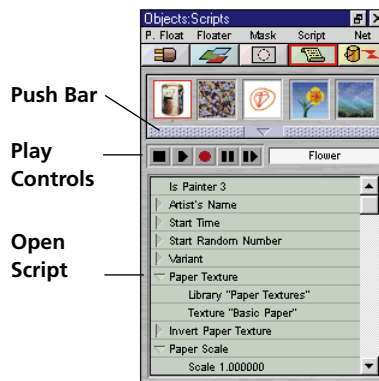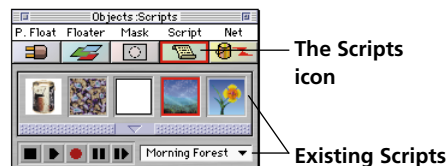
The Script palette contains controls for storing, recording and playing scripts.

Record and Playback Buttons

Five buttons on the bottom of the palette make it easy to stop, play, record, pause, and step forward when you're working with scripts.

Script List

The Script List in the **Script** palette offers tighter control in developing and playing scripts. The palette lets you view the instructions that comprise a script. You

can then select and play individual instructions, or cut and paste them to edit the script.

To display the Script List, click on the **Objects: Script palette** push bar.

You may record a script using the tools in the window.

The window is empty until you load a script.

Recording Scripts

When you record a script, first you setup your script options. Then begin the recording and perform the actions you want scripted.

To record a script:

❶ First setup your Script Options. Choose **Objects palette**: **Script menu▶ Script Options**. The **Script Options** dialog appears.
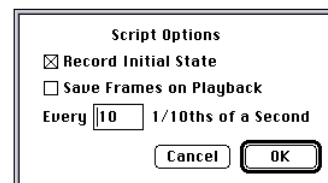
Use the Script Options dialog to control recording and playback options.

2 Set your options. **Record Initial State** is the only recording option.

Save Frames on Playback and the frame rate option are for playback. For more information on these options, refer to "Converting a Scripted Session into a Movie" on page 324.

Record Initial State Records the tools and art materials you use during the session, including brushes, colors, and paper textures. Painter plays the session using the materials you recorded.

Brushes, papers, patterns, and other materials may be stored in alternate libraries. These libraries must be available during playback.

When disabled, Painter uses the tools and art materials that are selected at the time you play back the script. So by disabling **Record Initial State**, you can use a different brush, color, and paper texture each time you play the script.

3 Click **OK**.

4 Choose **Objects palette**: **Script menu▶ Record Script** or click the **Record** button on the **Objects: Script palette**. The **Record** button glows red while recording.

To record a script, click the Record button or choose Record Script from the Script menu.

5 Draw, paint, or use whatever features and effects you want to record.

6 When you're finished, choose **Objects palette**: **Script menu▶ Stop Recording** or click the **Stop** button. Painter prompts you to name the script.

7 Enter a name and click **OK**. Painter automatically puts an icon for the script in the drawer. The new script is saved to the current library.

You can move scripts between libraries using **Objects palette**: **Script menu▶ Script mover**.

New scripts are saved to the current library. You can move a script to a different library using the Script Mover.For information on working with libraries and movers, refer to "Libraries and Movers" on page 10.

Use the Script Mover to customize script libraries.

Playing Scripts

When you play your recorded script, you can sit back and watch the operations unfold. In Painter, replaying a script of a painting is like watching the artist at work.

Playing a Script from the Script Palette

To play a script:

1 On the **Objects: Script palette**, click the icon for the script you want to load.
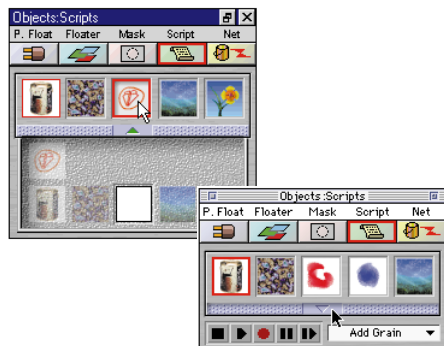
Select a script from the Script palette.

2 Click the push bar to display the play controls and **Script** pop-up.

You can also use the **Script** pop-up to select a script by name. Click on the **Script** pop-up inside the **Script** palette and choose **Load Library** to open other Script libraries.

Click the push bar to reveal the play controls or to select a script from the pop-up menu.

3 Click the **Play** button. The **Play** button glows green during playback.

If necessary, you may use the **Stop**, **Pause**, and **Step Forward** buttons to control playback.

Script buttons, from left to right, Stop, Play, Record, Pause and Step Forward.

You may use **Command-./Ctrl+.** to stop a script from playing.

Replaying a Script at a New Resolution

Replaying a script at a higher resolution is a good way to create a high resolution image. When you create, you get the smooth, responsive performance of working at low-resolution. When you play back the script at a higher resolution, you get the benefit of a higher quality image.

The record to playback scaling ratio is limited. A factor of four is probably too much. For best results, experiment.

To record for resolution-independent playback:

1 Before you start recording, open a new document at the resolution you want to work in.

2 Before painting or drawing, choose **Select menu▸ All**, press **Command-A/Ctrl+A**. This action creates a reference rectangle which will be part of the recording. This reference rectangle must be recorded to play a session back into a higher resolution file later.

3 Click the **Record** button on the **Objects: Script palette**.

4 Either choose **Select menu▸ None**, **Command-D/Ctrl+D** or draw inside the selected area.

5 Proceed with your script recording as usual.

Before playing back the script, create a new document of the resolution you want. The document may be larger or smaller than the original script file.

To play back at a different resolution:

1 Create a new document in which to play the script. If you want the resulting image to be a higher resolution than the original, create a document with proportionally larger dimensions. For example, if the original document is 500 X 500 pixels, make the new document 1000 X 1000 pixels to double the size.

If the destination document has a different aspect ratio from the original, the image created by the script will be proportionally distorted.

2 Load the resolution-independent script you recorded.

3 Before playing back the script, choose **Select menu▶ All**, press **Command-A/Ctrl+A** in the new document. The rectangle recorded at the outset of the original script is referenced to the selected rectangle in this document.

4 Click **Play**. The original script replays into the new document. All brushes, paper textures, and related functions are be appropriately scaled for the new resolution.

Using Scripts as a Productivity Tool

Scripts can contain the artist's process while creating an image or it can hold procedures and operations. For example, if you need to apply color adjustments to a collection of images, you can script these operations. When you play back the script you can perform color correction and many other operations all with the click of a single button.

Scripts and Movies

Painter allows you to play back a script in a movie file. This allows you to create some interesting effects as well as automate processes.

Converting a Scripted Session into a Movie

You can replay a script into a Painter movie and, if you like, save it as a QuickTime/AVI movie. Every action you take becomes a frame in the movie. This is a great way to create special effects for your movies.

To replay a script into a movie:

1 Record a session now or load a pre-recorded session.

2 Open a new image at the size you want the movie to be.

If the script was recorded to be resolution-independent, you can replay your session into a movie with different dimensions. For additional information, refer to "Replaying a Script at a New Resolution" on page 323.

If the script is not resolution-independent and the new image window is larger, the script plays back in the upper-left corner of the movie. If the new image is smaller than the script dimensions, only the upper left portion of the scripted session appears in the movie.

3 Choose **Objects palette: Scripts menu▶ Script Options**. The **Script Options** dialog appears.

Use the Save Frames on Playback option to create a movie on playback.

4 Enable **Save Frames on Playback**. This is the option that directs Painter to create a movie on playback.

5 Choose how many 1/10ths of a second you want between frames. The lower the number, the more frequently a frame is created, and the more fluid the movie will be. More frames, however, use more disk space.

6 Click **OK**.

7 In the **Script** palette, click **Play**. A dialog appears asking you to name the new frame stack that the script will play into.

8 Enter a name, choose a destination folder, and click **Save**. The **New Frame Stack** dialog appears.

9 Select how many layers of onion skin and the storage type you want. Then click **OK**. Painter plays the script into frame stack.

For more information about frame stacks, onion skin, and movies, refer to "The Frame Stacks Palette" on page 299.
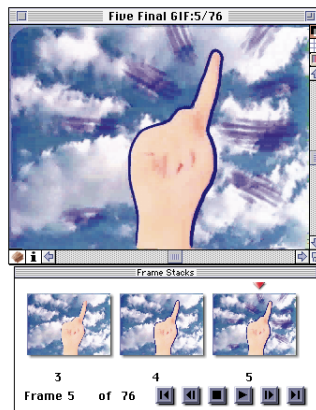
The Frame Stacks palette displays movie frames.
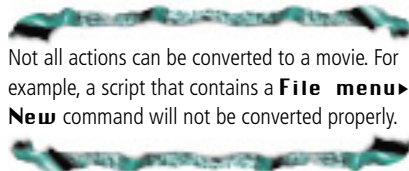
Not all actions can be converted to a movie. For example, a script that contains a **File menu▶ New** command will not be converted properly.

Applying Scripts to Movies

Painter lets you apply a script to a movie. This feature is particularly useful when you have a script that functions as a macro.

You can apply scripts to movies using the Apply Script to Movie command.

For example, you might want to apply an effect like Glass Distortion to a video clip. You can record a script that applies the Glass Distortion effect to a single image. Then choose **Movie menu▶ Apply Script to Movie**, and select the Glass Distortion script. With this one command, Painter will apply the script to each frame of the movie.

For more information, refer to "Applying a Script to a Movie" on page 303.
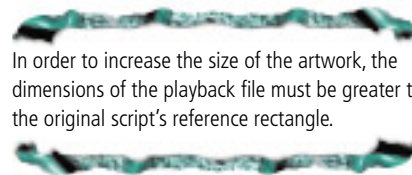
In order to increase the size of the artwork, the dimensions of the playback file must be greater than the original script's reference rectangle.

Remember, a script can only be played back at a new resolution if a reference rectangle was recorded at the outset. For more information on setting the resolution of a movie, refer to "Replaying a Script at a New Resolution" on page 323.

Editing Scripts

Painter lets you edit your scripts. You can cut, copy and paste steps to change script behavior. You must first open the script before you can edit its steps.

Loading a Script

To load a script for editing:

1 Choose **Objects palette: Script menu▶ Open Script**. A dialog appears containing scripts available in the current library.
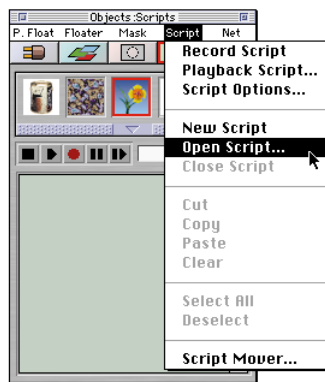
Use the Open Script command to load a script for editing.

If the script you want is in a different library, click **Open Library** and choose the correct one.

2 Select the script you want and click **Open**. Painter displays the script in the **Script** palette.

The script appears as a series of instructions, each with a triangle at its left. You can click the triangle to open the instruction and see the steps or parameters it uses. Most of these parameters can be edited by double-clicking on them.
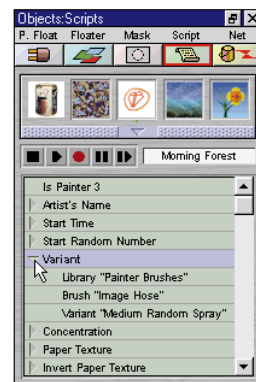
Each line in the script represents an instruction. Click on the triangle to expand the list.

Painter always records every action you take in the "always script." This script appears as (Current Script) in the **Open Script** dialog. If you open this script, you can copy elements from it, but you will not be able to cut, paste, clear or edit elements. This allows you to copy elements from the current script and paste them into a new script. In this way, you can easily encapsulate recently-taken steps into a script.

3 When you are done editing the script, choose **Objects palette: Script menu▶ Close Script**.

Because Painter always saves your script data, this data can build up in your Painter Script Data file. You can control the number of days these scripts persist in the file by entering a number of days into the **Auto Save** box in the **General Preferences** dialog. For more information, refer to "Setting Painter Preferences" on page 34.

Selecting Script Instructions

To select one or several instructions:

1 Select an instruction by clicking on it. You may add to the selection by holding down the **Shift** key and clicking on additional instructions.

2 You can select all instructions in a script by choosing **Objects palette: Script menu▶ Select All**. You can use this with **Shift-click** (described above) to select all but a small number of elements within a script.

3 You can deselect all selected script elements by choosing **Objects palette: Script menu▶ Deselect**.

Editing a Script

You may edit a script to change the order of instructions, remove an instruction, or add a segment from a different script.

To edit the script:

1 Locate and select the instruction you want to edit.

2 Choose **Objects palette: Script menu▶ Cut** or **Copy**.

3 To paste, select the instruction you want to precede the cut or copied segment. Choose **Objects palette: Script menu▶ Paste**.

Copied instructions are stored in the clipboard, so you may close one script, open another, and paste them there.
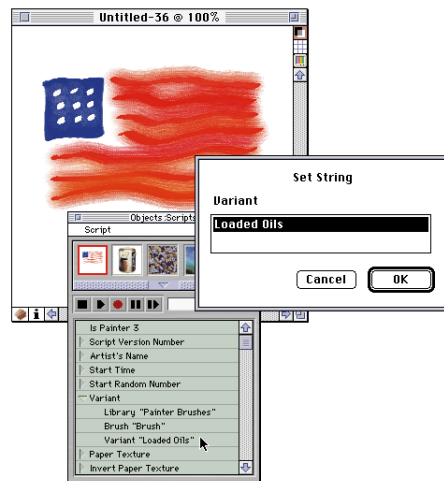
You can edit the script in the Script palette. Change the variant or another element and play the script back.

Creating a New Script

To create a new script:

1 Choose **Objects palette: Script menu▶ New Script**.

2 You can now build a script by copying segments from other scripts and pasting them in the new script.

Find Painter
Libraries
on the Internet

Set up
connection
parameters

Network Setup

Host IP Address:
<Network
Host Name:
<Network Disabled>

User Name: MC Escher

Chat ID: ME

Port for Painter: 2100

☒ Disable Network Painter

Debugging Options

○ Full Debug
○ Debug no Token or ACK
◉ No Debug

Only one person can *paint at a time.*
Click the Red light when you finish painting

The Yellow light means someone
else is working - you have to wait

Click the Green light
to start to paint

Artist List

Chat Area

Manage Net interactions
using the Network Palette

16

Net Painter

Understanding Net Painter

The Net Painter feature supports real-time collaboration across a network as well as sharing of documents with other Painter users on a TCP/IP network. As you paint and make changes, your strokes and effects appear in the image window on the screen of other collaborators.

Net Painter is a powerful tool in the development of design between artist and client.

Net Painter works by utilizing scripting and sending instructions across the network. For more information about scripting, refer to Chapter 15, "Scripts."

When you're done painting, you can turn over the controls so other collaborators can pick up where you left off. Other collaborators' work appears in the image window on your desktop. Take turns working until the project is finished.

You may use Net Painter across a local area network or across the Internet to connect with anyone running Painter 4.0 or later. It doesn't matter if the collaborators are across the hall or across the country.

You may even have several collaborators in a session. One collaborator paints while the others watch. A famous artist might demonstrate his technique while a dozen students watch. Anyone connected can communicate with other collaborator by typing in the chat window.

Net Painter allows two or more users to collaborate on a single piece of artwork over the Internet.

Note: Painter 5 is compatible with Painter 4 for Net Painter sessions. However, Painter 5 has a number of features that are not part of Painter 4, including masking and selections, plug-in brushes and plug-in floaters. Likewise, Painter 4 has a few features not supported by Painter 5. This discrepancy may cause performance problems between Painter 4 and Painter 5 collaborators. You can avoid problems by limiting tool and feature choices to those common to both versions, for example the default Brushes library.

Net Painter sends instructions—not pixels—over the network. The one copy of Painter tells the other copies what tools, colors, and effects to choose and how to apply them.

Some operations take advantage of local resources, like custom paper textures, patterns, brush variants, brush looks, nozzles, plug-in filters, or objects, like floaters and paths. Such resources must be shared before you can use them effectively on the network project.

Window operations are not conveyed across the network. This means that zooming and panning are not duplicated on the system of other collaborators.

Technical Requirements

Net Painter uses the TCP/IP communications protocol. All computers connecting for a Net Painter session must be networked using to TCP/IP. If your computer is TCP/IP-capable, you're ready for Net Painter.

If you can use Netscape to browse the World Wide Web, your computer is TCP/IP-capable.

The methods of TCP/IP setup differ between operating systems. If your computer is not set up with TCP/IP communication, contact your network administrator or Internet Service Provider (ISP) for assistance.

Fractal Design Technical Support can help you to use the Net Painter features. If you need technical assistance with your TCP/IP communications, please see your network administrator or service provider.

If networking by modem, a 28.8K bps modem (V.34) is recommended for optimum results. A 14.4K bps modem will be adequate if you intend to collaborate using only Painter's default libraries and not transfer any files. 14.4K bps is very slow if you intend to transfer images and library files to other collaborators.

File transfer from within Painter can be slow on a local area network as well. It would be more efficient for local collaborators to manually copy any large files from the network into each of their Network Folders. Once the file is copied the collaboration lead can open the file on their machine and it will appear on the other collaborators machines automatically.

Net Painter works on Power Macintosh and Windows 95/NT systems.

Crossing a Firewall

Some companies isolate their local area network from the Internet using a firewall. The firewall acts as a filter, allowing some types of information transfer, while preventing others.

Net Painter uses its own protocol based on User Datagram Protocol (UDP). Some firewalls may obstruct the transfer of Net Painter information. If you are working from within such a firewall, you may be unable to use Net Painter beyond the local area network. You should try it and see if the firewall causes any problems.

Contact your network administrator if you think a firewall might be interfering with your Net Painter connection. The firewall software can be reprogrammed to recognize the Net Painter UDP and allow it passage.

The Net Painter Palette

The controls for setting up and connecting to a Net Painter project are on the **Objects palette: Net menu**.
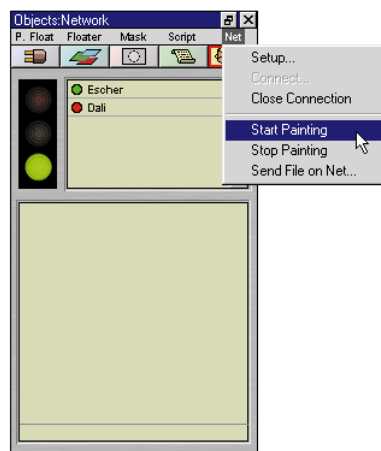
The Net menu holds the controls for setting up and connecting.

The controls for communicating with your collaborators are on the **Objects: Network palette**.

Traffic Status   Network button
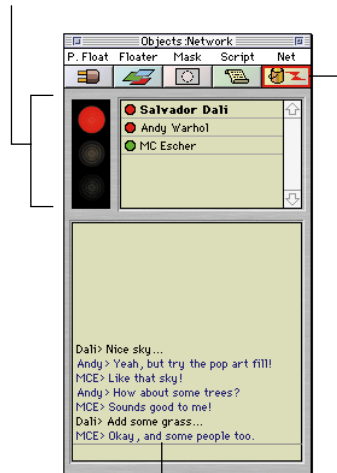
Chat Window

The Network palette holds the controls for communicating and checking status. Click on the Network button to display the Network palette.

To display the **Network** palette, click on the **Network** button.

The **Traffic Status** area lists the names of all collaborators and the participation status of each. Each light has a different meaning.

Green light indicates the active collaborator. This person is *now painting*.

Yellow light indicates collaborators who are *waiting to paint*. Someone who is "waiting to paint" has asked to paint—either by clicking the green light or by choosing **Objects palette: Net menu ▶ Start Painting**.

People who are waiting to paint are queued. They will receive permission in round-robin order as shown in the list on the **Network** palette.

Red light indicates a user who is *just watching*.
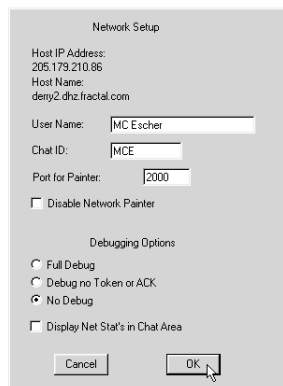
The **Chat** window allows you to talk to other collaborators. You don't have to be the active collaborator to chat to others.

Setting Up Net Painter

Before you can begin your Net Painter session, you must setup your network.

To set up Net Painter:

1 Choose **Objects palette: Net menu▶ Setup**. The **Network Setup** dialog appears.

Use the Network Setup dialog to set your Net Painter options.

2 Set your options as needed for your system.

Host IP Address displays your computer's IP address. Painter gets this address from your TCP/IP configuration settings.

An IP address is a numerical address to a computer on the network, such as "256.204.145.34"

Host Name displays your computer's domain name, if available. A domain name is not necessary.

A domain name is an alphanumeric address to a computer on the network, such as "somebody.somewhere.com."

User Name controls the name that appears in the **Network** palette. For example, "Salvador Dali."

Chat ID determines your net "handle." Enter a short version (up to four alphanumeric characters) of your name. The Chat ID nickname identifies who spoke a line of chat. For example:

MCE> Send me your custom brush so I can see what you're doing!

Dali> I just sent it, it's in your folder.

Port for Painter directs transferred information to the right application. Everyone in a Net Painter session must use the same port number. You and other collaborators must arrange which

port number to use in advance. You may use any port number between 1024 and 65535.

To prevent others from connecting to your session, you can choose a private port number.

Disable Network Painter prevents Painter from dialing your service provider if you have a modem-based connection. If you are using a network, deselect this option.

Debugging Options contains debug and statistics display options which are technical services provided for those who may want them.

3 Click **OK**.

Using Net Painter

When you use Net Painter, you will coordinate with others to connect to the session, exchange files, take turns and communicate using the Chat Window.

Joining a Painter Collaboration

Make sure of the following:

• Both you and all other collaborators are on the network.

- All collaborators are running Painter 4.0 or later.

- All collaborators have set up Net Painter to use the same port number.

- All collaborators are idle until everyone is connected. This means no files can be open, no one can be painting. If you have a file open and you try to join a collaboration you will get an error message explaining you can't join because you have an open file.
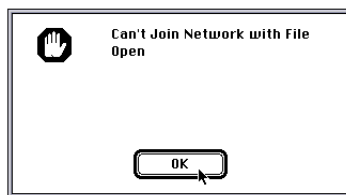
An error message appears if you try and join a collaboration when you have a file open.

To join a collaboration:

1 Open the **Objects: Network palette**. Click on the **Objects palette: Network button**.

2 Choose **Objects palette: Net menu▶ Connect**. The **Network Channel** dialog appears.
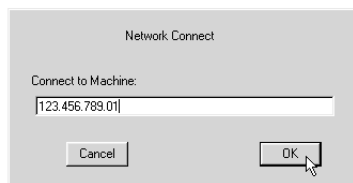
Enter the IP or Internet address into the Network Connect dialog.

3 You may enter either the IP address or the domain name of your collaborator's machine. Painter displays the last IP address you connected to.

4 Click **OK**.

If Painter connects successfully, your name and your partner's name appear in the top panel of the **Network** palette.

If Painter fails to connect, an error message appears.
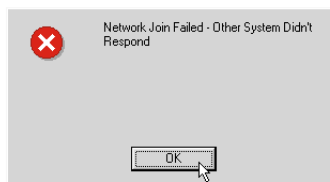
This error message appears when the address you entered could not be connected to.

Multiple users may join the project by connecting to any collaborator's machine. The procedure for additional collaborators connecting is identical. All collaborators must connect from the outside. Someone who is outside the group can join to anyone within the group. Someone who is in the group cannot connect to another machine. A Net Painter group may not join another group.

When all collaborators are joined to the group and the first person begins painting, the group becomes locked. No one can join once the collaboration commences. If you try and join into a group once the painting starts you will get an error message explaining that you can't join because the group is currently collaborating.

This error message appears when you try and join a group that has already started painting.

Sending Files

If you are going to be using custom resources (custom paper textures, patterns, brush variants, Brush Looks, Nozzles, plug-in filters, or objects, like floaters and paths) that you know other collaborator do not have, you may want to

send them in advance. Custom resources may be unique to a machine and using them will disrupt the project.

For example, if you paint with a customized variant, the chances are other collaborators won't have that tool available. Painter will display a message informing those connected that a tool is not available. Each user's Painter will choose a different variant and proceed with the project.

So, before starting a project, you should share resources you anticipate using. The best way to do this is to create special libraries of custom resources, then send the library files.

You can send the files to other collaborators before you begin a session, or the active collaborator (green light) can send files to other collaborators once a session has begun.

To share the project files.

When the collaboration is going to begin with an existing file, every member in the group must have a copy of that file in their Network Folder. The Network Folder is the directory where Painter puts and looks for project resources.

1 Remain idle until all members have joined.

2 Initiate painting either by clicking on the green light or using the pull down menu.

3 If you are the first person to "go green" then you can send the file. The file will be sent to all members of the collaboration. When you open the file on your own machine, Painter automatically looks into the Network Folder and opens the file on the other members' machines.

To send a file:

1 You must be the active collaborator (green light) to send a file.

2 Choose **Objects palette: Net menu▶ Send File on Net**. The standard **Open** dialog appears.

3 Locate the image or library file you want to send.

4 Click **Open**. Painter sends the file to everyone connected.

Receiving Files

Files sent using the **Objects palette: Net menu▶ Send File on Net** command are automatically saved to the Network Folder. If you are expecting a file, look for it here.

Keep only files used in collaboration in your Network Folder. If someone sends you a file by the same name as an existing file in your Network Folder, the existing file will be deleted without warning.

You want to leave library files you receive in the Network Folder. When the active collaborator uses a resource not available in your current library, Painter will search the library files in the Network Folder. When Painter finds the resource, it proceeds with the project.

Taking Turns in a Net Painter Session

Only one person may paint at a time. The controls for negotiating permission are located in the Traffic Status area of the **Network** palette.

To start painting:

1 If you want to paint, click the green light. You may also choose **Objects palette: Net menu▸ Start Painting**. You must then wait for other collaborators to finish before you can start paining.

Clicking the green light initiates painting.

2 If someone else is painting, your traffic light turns yellow, indicting you are ready to paint. When the artist finishes, their light turns red, and yours turns green. You can begin painting.

You may also use the Network palette menu to start painting.

3 When you are finished painting, click the red light. You can also choose **Objects palette: Net menu▸ Stop Painting**. This turns over permission to the next user in line.

The traffic status of each user connected appears in the top panel of the **Network** palette.
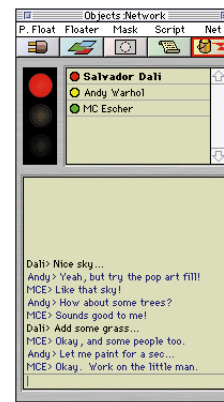
People wanting to paint have a yellow light while people who only want to watch have a red light.

Using the Chat Window

The chat feature lets you type messages to other users in the session. For example, you might suggest an effect, ask for an opportunity to paint, or say "That looks fantastic!!"

Chat is always active—even when you don't have the green light. You can type messages, and you'll see the messages from others regardless of your traffic status.

Chat messages appear in the lower panel. Messages you enter appear in black. Messages from other artists appear in color. Chat messages do not update while the computer is computing.

Example of typical chat:

Dali> Let Andy add some trees

Andy> I'm going to use the Oil Paint brush

Dali> Make them darker

MCE> You can use the Relief brush to add texture

Andy> What a great idea!

Dali> That looks fantastic!

At which point, MCE clicks the red light to stop painting. Andy's traffic light turns from yellow to green, and he goes on to create the trees.

To send a chat message:

1 Click in the chat line at the bottom of the chat panel. When the insertion point appears, begin typing your message.

2 Press **Return**/**Enter** to send the text.

3 Press **Return**/**Enter** on an empty line (without typing anything) to close the text entry. After closing the text entry, you'll need to click the chat line again to send messages.

Leaving a Net Painter Project

To leave a project:

When you're done in a Net Painter group, choose **Objects palette: Net menu▶ Close Connection**.
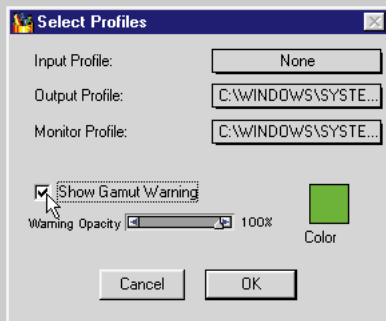
Set your profiles and preview options

Kodak Color Management System profiles help maintain color consistency

Click to view colors that are out of gamut
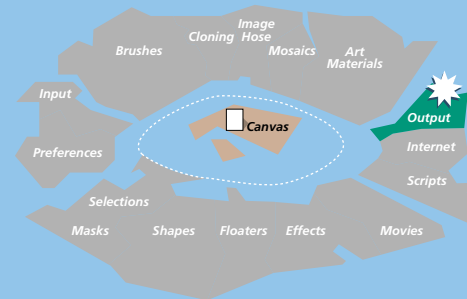
17

Printing

Understanding Printing

You can print Painter images on many kinds of printers including PostScript and Windows GDI printers and high-resolution imagesetters.

Although your final goal may be to print high-quality color prints, it is a good idea to first print proofs on any printer you have available.

You can use a black and white printer to check page size and placement of images on the page. If you have a color printer, you

can print proofs to get a general impression of what your image looks like. Keep in mind that the proof will not be an accurate representation of a final print produced by an offset printing process. The print process, inks, and paper types combined affect the final output.

To help you prepare for color printing and to ensure that you get the best results when you do print, Painter supports color management through the Kodak Color Management System (KCMS).

Color management is an option. To use it when you work or print, you'll first need to set it up for your system. "Color Management" on page 342 describes how to set up and use KCMS in Painter.

Printing Images with Shapes

Shapes can be interleaved with floaters in the Floater List, which can affect the way your document will print.

Shapes are inherently resolution-independent—they're mathematical representations of curves, not actual pixels. When you print on a PostScript printer, normally these are turned into PostScript paths and printed at the full printer resolution, although there are some exceptions.

Some effects that can be applied to Painter Shapes are not actually printable with PostScript Level I or II, so they must be

rasterized into your canvas before printing. These include transparency and compositing methods.

It is important to note that any object in a lower position on the Floater List that is "touched" by a rasterized shape causes that to be rasterized, as well. That is, if you have a Shape with transparency on top of a number of other shapes, all those shapes below must be rasterized as well as the top shape to preserve the transparency all the way down to the canvas. This is true even if the overlap area is small.

Similarly, if you place an image floater partially over a Shape, the Shape must be rasterized in order to print correctly.

If you want Shapes to print at the full resolution of your printer, make sure they do not overlap with raster floaters, and that you do not make them transparent or set their compositing methods to anything other than Default.

Page Setup (Macintosh) and Print Setup (Windows)

Options for setting up your file for printing depend on several factors—the output device, color versus black and white printing, and whether or not you are printing separations.

Macintosh options are located in the **File menu ▶ Page Setup** dialog.

The Macintosh Page Setup dialog has standard Apple controls and the Size to Fit Page option.

Windows options are contained in the **File menu ▶ Print Setup** dialog.
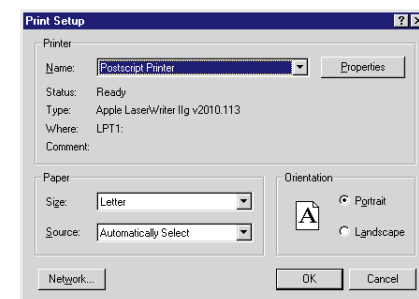
The Windows Print Setup dialog has controls specific to your printer.

Size to Fit Page

Choose this option if you want Painter to shrink an image that is larger than a selected page size. For example, when this option is checked, a 12" x 12" image would be resized to fit on an 8 1/2" x 11" page. Painter resizes the image to fit the page.

If an image is larger than the page size and you haven't checked **Size to Fit Page**, you see an alert message when you print. Click **Continue**, and the image will be clipped to fit the page. Click **Cancel** to stop printing. You can then open the **Page Setup** (Macintosh) or **Print** (Windows) dialog and choose **Size to Fit Page**.

Using the Print Dialog

Once you have chosen options in the **Page/Print Setup** dialog, you are ready to print.

To print an image:

1 Choose `File menu▸ Print` to open the Painter **Print** dialog. The top half of the dialog contains the standard print commands.

2 Select one of the four printing methods Painter supports.

Check **Color Quickdraw/GDI Printing** if your printer is not a PostScript printer. Some common examples are the Hewlett-Packard DeskJet, the Canon BubbleJet, and the Epson Stylus. You cannot print separations to non-PostScript printers.
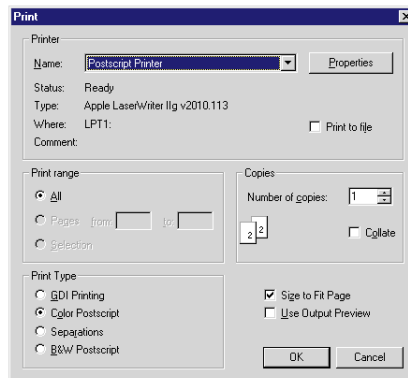
The Print dialog has standard controls for printing. Painter-specific controls are at the bottom.

Check **Color PostScript** if you plan to print to a color PostScript device. The QMS ColorScript and Tektronix color thermal printer are examples of color PostScript printers.

Painter 4 included a PRINTER.STG file that contained color calibration information for obtaining a high quality color separation based on the settings: Dot Gain 16%, Screen Frequency for all four process colors at 133 lpi, and Angle set to 15° for cyan, 75° for magenta, 0° for yellow, and 45° for black.

Painter 5 does not limit your files to these settings, it uses the device's default screening information. If you save to EPS format with Output Preview off, Painter will use the Color Studio separation tables with your device's default screening.

Check **Separations** to print separations. The output consists of four pages, one each for cyan, magenta, yellow, and black. You can print separations from Painter with any PostScript device, including high-resolution imagesetters.

Painter places a color bar, registration marks, and color name on each of the four separated plates.

Check the **B & W PostScript** box if you are printing on a black-and-white PostScript laser printer.

3 If you want to use the Color Management System to control printing, enable the **Use Output Preview** option. For more information, refer to "Color Management" on page 342.

Printing Tips

Print Composited Images

Having numerous floaters and shapes in a document makes it take longer to print. Painter is more efficient printing a fully composited version of the image.

Instead of dropping all of the floaters, you can clone the file, then print the clone. You want to keep everything floating in the saved RIF file so you can return and make changes.

Size and Orientation

Most printers cannot print across the entire page. Any given printer has a maximum printable area, which is largely determined by the paper handling mechanism. For example, the maximum printable area on an 8 1/2 x 11" sheet of paper may be 7 1/2 x 10".

If you have a printer selected, you can visually confirm if your image fits by clicking and holding on the "i" icon in the lower left corner of the image window. This will pop-up a print preview box. The rectangle with the "X" in it represents your image. The white box is the printable area of the page, and the gray border is the non-printable area. If your image is too large to fit, you have several options:
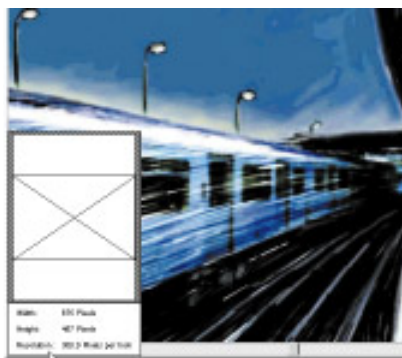
When you click and press down on the "i" icon in the lower left corner of the image window, a print preview shows you how your image will print on the printer's page.

- Use the **Canvas menu▸ Resize** command. Enter a lower value for either the width or the height. For this purpose, it's easiest to set the measuring units to inches or centimeters, not pixels.

- Change the printer page orientation from portrait to landscape or vice-versa. This is done in the **File menu▸ Page Setup/ Print** dialog. Depending on your image dimensions, changing the orientation may allow your image to fit. The new orientation will be visible when clicking the "i" icon.

- Use the **Size to Fit Page** option under **File menu▸ Page Setup/Print**. Selecting this option will always make your image fit the maximum printable dimensions. This

means that if your image is large, Painter will shrink it to fit. And if your image is small, Painter will enlarge it to fit.

Microsoft maintains a large library of Windows-related printing information that is available on the World Wide Web. Connect to the Microsoft Knowledge Base at— http://www.microsoft.com/kb

Color Management

Painter 5 supports color management through the Kodak Color Management System (KCMS). Kodak is the leader in advanced color systems, and the KCMS is designed to meet the most demanding standards in color production work.

Color management is a control system for the chain of devices you use in computer graphics production—from scanning input to monitor display to output on a color printer. Color management is designed to help artists who create full color images for printing.

For Painter artists, color management offers three main benefits:

- It lets you view an on-screen preview of how Adobe Photoshop would separate the image to CMYK. This includes separations based on the default tables in Photoshop.

- It lets you view an on-screen preview of how your image will look when printed on a particular printer.

- It lets you apply a device-specific "optimization" to the color data when printing from Painter or saving to EPS separations.

Color management has no clear benefit for artists creating for the www, CD-ROM interface, games or any project destined for the computer display.

Color management is not a panacea for all your color woes. It's a tool that helps you negotiate the turns and hurdles in the route to high quality color production.

Color management helps ensure color consistency and accuracy. It improves your output quality and saves you time and money by helping to avoid redos.

About KCMS

The Kodak Color Management System integrates with your system software, where Painter and other programs can use it. Several files must be loaded on startup to enable KCMS for that work session. If these files aren't loaded, KCMS is unavailable.
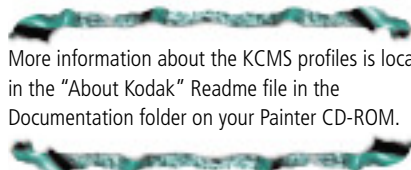
More information about the KCMS profiles is located in the "About Kodak" Readme file in the Documentation folder on your Painter CD-ROM.

The Painter Installer will place the KCMS files in the correct locations. If you choose not to install the KCMS files, the color management features described in this section will be unavailable. If you want to use them, run the Painter Installer again and do a custom install to obtain just the KCMS files.
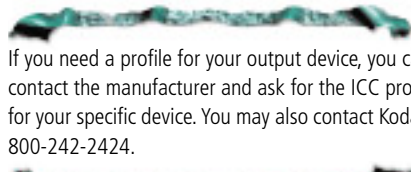
If you need a profile for your output device, you can contact the manufacturer and ask for the ICC profile for your specific device. You may also contact Kodak at 800-242-2424.

Using Output Preview

The **Output Preview** provides an on-screen preview of how your image will look when displayed or printed on a particular device.

When **Output Preview** is turned on, the **Color** palette and color chips on the **Controls** palette obey the preview display. this shows how the colors you choose will print.

The KCMS Output Preview includes an **out of gamut warning** option. This feature identifies colors of the image that are beyond the capabilities of the selected output device.

KCMS must be loaded in your system to proceed.

To use Output Preview:

1 Open the file you want to use **Output Preview** with.

2 Choose `Canvas menu` ▸ `Output Preview` ▸ `Kodak Color Management`.

Note: If this item is not available, KCMS is not properly installed in your system.

If this is the first use of Output Preview, Painter opens the **Preview Options** dialog. For more information, refer to

When you've set Preview Options, Painter turns on the Output Preview display mode.

During KCMS Output Preview display, the document window shows the colors as they will print on the selected device. The preview is a good approximation of the result, but it won't be exact. Too many variables influence display and printing results.

You might want to work for a while with Output Preview enabled. Painter maintains the preview as you work. The colors and effects you apply are automatically displayed under the preview.

It's important to understand that with Painter, KCMS never changes the data *in the file.* Preview and printing adjustments adapt the data *for this device at this time.* KCMS will only alter data in a file when you save in EPS format.

To turn off Output Preview:

Choose **Canvas menu▸ Output Preview▸ None**.

Preview Options

You use the **Preview Options** dialog to identify your input, display and output devices to the system.

You can toggle Output Preview on and off by clicking the preview icon. This icon is invalid until Preview Options are set.

You'll use the **Preview Options** dialog to choose **Device Color Profiles** (DCPs) the first time you use Output Preview and any time thereafter when you change a device. For example, on one project you print to a color laser printer, and on the next you print to a dye sublimation. You should choose the correct output Device Color Profile whenever you prepare an image for a different printer.

KCMS uses the ICC standard for device color profiles. An array of DCPs is included in the Painter installation. You may have ICC DCPs from other sources. Using the correct device color profiles (DCPs) is the foundation of the color management system.

Setting KCMS Preview Options

Painter will open the **Preview Options** dialog automatically if you turn on Kodak Color Management, but haven't yet chosen DCPs for your devices.

You can reopen the **Preview Options** dialog at any time to change the settings.

To return to the Preview Options dialog:

1 Choose **Canvas menu▸ Output Preview▸ Kodak Color Management**.

2 Then choose **Canvas menu▸ Preview Options**.

Note: You must have an image open to set Preview Options.
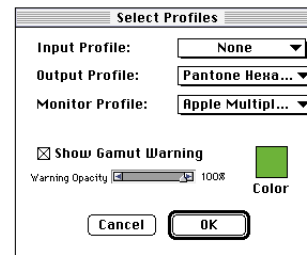
The Kodak Color Management Preview Options dialog.

To set KCMS preview options:

1 Use the **Input Profile** pop-up to select the DCP for the color input device used to digitize the image you are opening.

If color management is not appropriate for acquire data, select **None**. For example, any image you created in Painter won't need an input profile. Also, if color management was already used in acquiring the data, you should choose **None**.

The DCPs available in the pop-ups are in files loaded by KCMS. You can add new DCPs by getting new files and copying them to the correct location in your system. For Macintosh, add the profiles to the Color Sync Profiles folder in the system Preferences folder. For Windows, add the profiles to the following directory: Windows\System\Color.

2 Use the **Output** pop-up to select the DCP for the output destination.

Many printers come with ICC profiles you can install. If you are unable to locate a DCP for your printer, contact the manufacturer for assistance.

Note: Remember that whenever you change your output target, you need to return to the Preview Options and select the DCP for the new printer.

If you intend to use Adobe Photoshop to create CMYK separations, you can use the **Photoshop RGB to CMYK** profile. This output profile is based on the default Photoshop separation tables.

3 Use the **Monitor Profile** pop-up to select the DCP for your monitor.

4 If you want to use the **Show gamut warning**, enable the option.

When this option is enabled, **Output Preview** display puts an overlay on colors that are beyond the color reproduction capabilities (gamut) of the selected output device.

Use the color chip to set the warning color.

Use the Warning Opacity slider to set the overlay strength.

Not all DCPs include the gamut data, so the gamut warning might be unavailable for some devices.
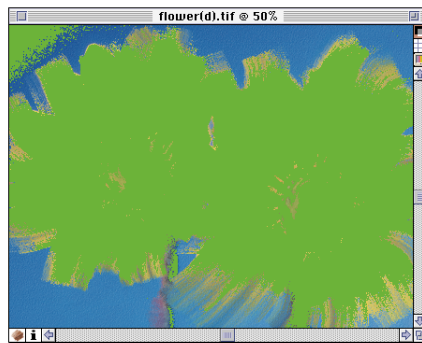
Output Preview shows that this image has several areas outside the printer's gamut.

The **out of gamut** warning may lead you to make color and design choices that will produce better results on a particular printer.

Printing with KCMS

When you print from Painter, the **Print** dialog offers an option for using the **Output Preview**. If you enable the option, Painter uses KCMS to transform the image to the printer's color space. The transformation only applies when printing to a Color Postscript printer.

To use KCMS for printing:

In the Print dialog, enable the **Use Output Preview** check box.

Saving EPS Separations with KCMS Transforms

When you save an image as EPS-DCS *while Output Preview is turned on*, Painter uses the KCMS transform to prepare the separation files.

If you want to create the separation files without using KCMS, turn off Output Preview before saving the file in EPS format.

Hexachrome Separations

Two of the output profiles provided with Painter are for Hexachrome printing. Hexachrome is a high quality printing process from Pantone that adds orange and green to CMYK, resulting in six color plates.

1 With Output Preview turned on, choose **Canvas menu▶ Preview Options**.

2 In the **Preview Options** dialog, choose one of the Hexachrome output DCPs from the **Output Profile** pop-up:

- Pantone Hexachrome High SID

- Pantone Hexachrome Normal SID

3 Click **OK** to dismiss the dialog.

4 Choose **File menu▶ Save As** and choose **EPS** from the **Type** pop-up.

5 Click **Save**.

6 Choose your Save As EPS options in the **EPS Options** dialog and click **OK**. Painter generates your separation for you.

Options for Files Saved as EPS

Saving in EPS for Printing

Painter's EPS files conform to the Desktop Color Separation format (EPS-DCS format). Although Painter save files in EPS-DCS, it can't read EPS-DCS. If you plan to save an image in EPS-DCS, it's a good idea to save it in another format first so you will have a copy of it that you can reopen in Painter.

When Painter's Output Preview is turned on and you save in EPS, Painter uses the loaded ICC profiles to control separation. If Output Preview is turned off, Painter uses default separation tables. For more information, refer to "Color Management" on page 342.

When you save a file in EPS-DCS, Painter opens the **EPS Options** dialog.
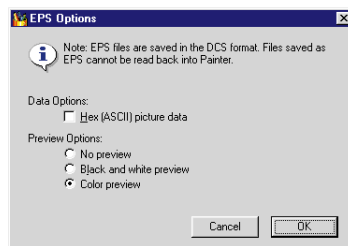
The EPS Options dialog.

Although you can save your images as EPS separations, Painter can't open or edit CMYK files.

Hex (ASCII) Picture Data

This is just another way of storing PostScript information. Some programs require that this option be checked. The file size will be approximately twice as large when the file is saved with this option.

Preview Options

The radio buttons under **Preview Options** tell Painter whether to save preview data and in what format. **No preview**, **Black and white preview**, or **Color preview**.

If you have an older laser printer, you may have to use the black and white preview to print these files on your laser printer. Although the preview or display is black and white, the color information remains intact. If you are going to create on-line documents as well as printed documents—for example a PDF—be sure to choose a high quality color preview.

A

Painter Brush Variants

Introduction

This appendix is a catalog of Painter's built-in Brush and Plug-in Brush variants.

These descriptions of the variants outline the behavior of a brush when pressure information is available. If you are using a mouse to paint, you'll want to modify a brush to achieve those pressure-sensitive effects. Modifying brushes will help you get the most out of the mouse as an input device.

Brush Variants

Brush variants are located in the **Brushes** palette. After selecting a brush, you can select a variant from the pop-up menu within the palette.

For more information, refer to .

Pencils

Pencils are great for anything you'd use real pencils for—from rough sketches to fine-line drawings. Like their natural counterparts, **Pencils** interact with canvas texture.

All the **Pencils** variants build to black. **Pencils** are pressure sensitive in terms of opacity. The **Colored Pencils** variant is an exception. **Colored Pencils** have uniform opacity regardless of pressure.

With the **Colored Pencils**, **2B Pencil**, **Sharp Pencil**, and **500 lb. Pencil** variants, dragging quickly produces a thinner line; dragging slowly leaves a thicker line.

The thick-to-thin variation becomes more apparent as you increase the ±**Size** setting on the **Brushes palette: Controls menu▸ Size palette**.

Thick & Thin Pencils

With this semi-anti-aliased variant, line width depends on the direction of your stroke.

2B Pencil

This variant is a soft lead pencil that produces thin, anti-aliased lines.

500 lb. Pencil

The **500 lb. Pencil** creates fat, semi-anti-aliased lines.

Single Pixel Scribbler

The **Single Pixel Scribbler** has a one-pixel pencil point. Pressure affects opacity.

Sharp Pencil

This variant is a hard lead pencil with semi-anti-aliased strokes.

Colored Pencils

The **Colored Pencils** variant produces lines with semi-anti-aliased edges.

Eraser

Painter has two ways to remove color: the **Eraser** variants, which erase down to the paper color, and the **Bleach** variants, which erase to white. **Darkeners** are **Eraser** variants that increase color density, building colors toward black. **Darkeners** are the inverse of **Bleach**.

With all of the **Eraser** variants, pressure determines how much you erase. To erase lightly, press gently.

If you're using a mouse, the **Opacity** slider controls how much you erase. With an eraser variant's opacity at 100%, it will completely remove color in one stroke. With opacity low, the eraser removes color gradually.

Small Darkener

Medium Bleach

Ultrafine Eraser
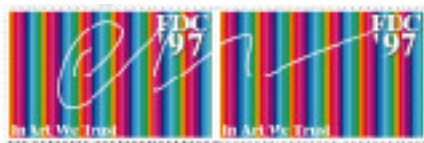
Medium Eraser
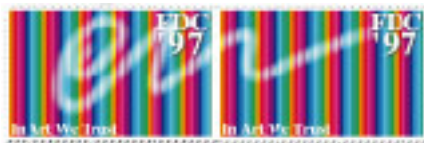
Fat Bleach

Ultrafine Bleach

Small Eraser

Flat Eraser

Medium Darkener

Fat Eraser
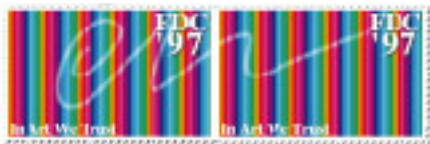
Small Bleach

Single Pixel Bleach

Fat Darkener

Ultrafine Darkener

Water

Water smudges and dilutes existing colors in the image. It doesn't add any color. All of the **Water** variants are pressure sensitive—the harder you press, the more you'll smear the image.

The **Water** variants work in the image layer. They are not associated with the wet layer or the **Water Color** variants.
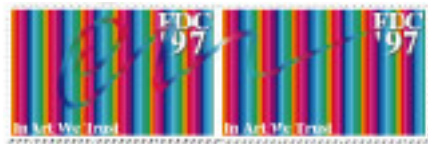
Just Add Water

This variant smudges with smooth, anti-aliased strokes. It removes grain and responds to the velocity of your stroke, smearing more when you drag slowly.
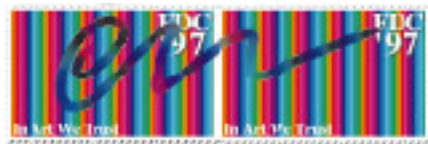
Frosty Water

This variant smears with a hard-edged, brittle stroke. It interacts with the texture grain. Try choosing other textures for some different results.

Tiny Frosty Water

This variant is a sharpened version of **Frosty Water**.

Single Pixel Water

This is the smallest **Water** brush available, similar to wetting a single hair and using it to smear an image.
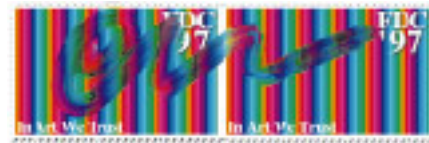
Water Rake

This variant is a multi-bristle water applicator.

Water Spray

This variant sprays pixels of water onto the image.

Big Frosty Water

This variant is a large version of **Frosty Water**.

Grainy Water

This variant reacts to grain. It is ideal for smearing existing textured strokes because it helps them maintain their graininess. You can also use it to add texture to smooth strokes.

Chalk

Chalk produces the thick, rich texture of the natural pastel sticks. **Chalk** covers with strokes that interact with grain.

The **Chalk** variants are pressure sensitive in terms of opacity. Adjust the **Opacity** slider to get the same effect with a mouse.

Large Chalk

This variant is a wider version of **Artist Pastel Chalk**.

Artist Pastel Chalk

This variant produces a medium width, semi-anti-aliased stroke.

Oil Pastel

This variant slightly smears the underlying color. It uses a captured triangular tip to produce a chiseled edge.

Sharp Chalk

This variant is a sharper version of **Artist Pastel Chalk**.

Square Chalk

This variant uses a captured rectangular tip to produce a chiseled edge.

Charcoal

Charcoal leaves covering strokes that interact with grain. Both **Grain** and **Opacity** are pressure sensitive.

Gritty Charcoal

Gritty Charcoal gives deep-toned, semi-anti-aliased strokes. The width of the stroke depends on the direction you drag.

Default Charcoal

This variant produces heavily textured, semi-anti-aliased strokes.

Soft Charcoal

Soft Charcoal produces a soft, anti-aliased stroke.

Pens

The **Pens** variants give you ink pens that never clog, spatter or run dry.

Smooth Ink Pen

This variant behaves like the traditional fountain pen. Strokes get darker as you layer them. Stroke width and grain depend on pressure. Heavy pressure produces a wide stroke that penetrates the grain. Light pressure produces a narrow stroke that reveals grain.

Scratchboard Tool

The **Scratchboard Tool** is smooth, anti-aliased and pressure sensitive.
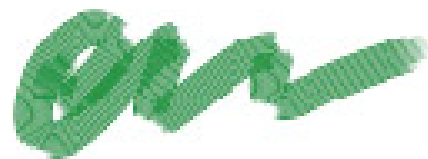
Scratchboard Rake

This variant is a multi-toothed version of the **Scratchboard** tool. This brush is ideal for crosshatch shading. Line width depends on pressure.

Pixel Dust

Pixel Dust sprays a random distribution of pixels.

Calligraphy

The **Calligraphy** pen is great for stylized lettering. The line width varies with the direction of the stroke.

Heavy pressure produces a wide stroke; light pressure produces a narrow stroke.

Keep the **Opacity** slider in its default position for the most ink-like lines.

With variants where direction determines stroke width, you can set the angle where the width changes. For information, refer to "Angle Controls" on page 60.

Leaky Pen

This variant leaves a scattering of drops, like you'd expect from a leaky pen. The slower you drag, the bigger the drops.

Single Pixel

The **Single Pixel** variant draws with a single pixel brush.

This variant is not pressure sensitive.

Use this variant with the Straight Lines drawing style to draw single-pixel lines.

Pen and Ink

With the **Pen and Ink** variant, the width of the stroke is determined by how fast you drag. The faster you drag, the thinner the lines become.

Fine Point

The **Fine Point** variant produces a ballpoint pen stroke that reveals texture.

Flat Color

This variant lets you cover large areas with even color.

Image Hose

The **Image Hose** is a special brush that applies images instead of color. The images it paints come from **Nozzle** files.

The following examples are previews of the default nozzles. For complete information on **Image Hose** variants, creating **Nozzle** files, loading them, and controlling the **Image Hose**, refer to Chapter 7, "The Image Hose."

Hands

English Ivy

Poppies

Med. Village

Grass

Small Forest

Stones

Cumulus Clouds

Ivy

Sushi

Felt Pens

The **Felt Pens** variants draw smooth, anti-aliased lines that build toward black as you layer strokes. Pressure determines opacity for all of the **Felt Pens**.

Dirty Marker

The **Dirty Marker** produces shades that build toward black more quickly than those made with the **Felt Marker**. The direction of the stroke determines its width.

Medium Tip Felt Pens

This variant draws medium-width lines. Drag quickly for a narrow stroke. Drag slowly for a wider one.

With variants where drag speed determines stroke width, you can adjust the width range and the smoothness of transitions between wide and skinny in the **Brushes**

Single Pixel Marker

This variant is a one-pixel **Felt Pen**. Pressure affects opacity.

Felt Marker

The **Felt Marker** produces a softer shade than the **Felt Pens**. The direction of the stroke determines its width.

With variants where direction determines stroke width, you can set the angle where the width changes. For information, refer to
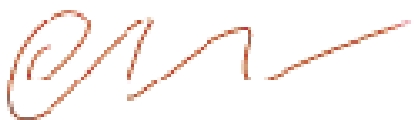
Fine Tip Felt Pens

This variant draws narrow strokes.

Crayons

The **Crayons** produce semi-anti-aliased strokes that interact with texture and build up as you layer them. Pressure determines opacity and grain.

Waxy Crayons

This variant smears the primary color with the underlying colors.

Default

This is a basic crayon.

Airbrush

The **Airbrush** applies a fine spray of color. The **Airbrush** covers underlying colors. Stylus pressure determines the concentration of color.

Spatter Airbrush

The **Spatter Airbrush** introducing a random texture into the airbrush spray. This variant produces a semi-anti-aliased stroke. Stylus pressure determines how much grain is revealed.

The results vary with different textures. Experiment with different textures and see how the brush stroke is affected.

Fat Stroke

The **Fat Stroke** variant covers a large area with a soft, anti-aliased paint stream.

Feather Tip

Feather Tip is a small sized variant that paints soft, anti-aliased lines of varied widths. The width variation is more apparent when you widen the brush size.

Single Pixel Air

This variant is a single-pixel brush. Color builds up based on pressure.

Thin Stroke

This variant covers a smaller area than **Fat Stroke**.

Liquid

The **Liquid** variants treat the underlying image as though it was floating on a thick liquid. The brush stroke drags image colors behind it.

This can be particularly useful when working with scanned photographs. These brushes can create a palette knife painting effect.

To smear existing paint with a **Liquid** brush variant—without adding color—move the **Opacity** slider all the way to the left.

To smear while adding some color, move the **Opacity** slider to the right.

Stylus pressure affects texture differently for the **Liquid** variants (drip method). More texture is visible when you press heavily, and less texture is apparent when you press lightly. This follows the natural behavior of smearing—the harder you smear the paint, the more you will reveal the surface it is painted on.

Drag these brushes slowly. The amount of pressure determines how much of the image you smear.

The **Grain** slider controls the strength of distortion a **Liquid** brush exerts on an image.

Smeary Bristles

This variant smears the primary color into the image. This variant is grain-sensitive. Dragging quickly produces a thinner stroke; dragging slowly creates a wider one.

Total Oil Brush

This variant is similar to **Smeary Bristles**, but produces a tighter stroke.

Tiny Smudge

Tiny Smudge is a single-pixel, multi-bristled smudging tool.

Smeary Mover

This variant is similar to **Smeary Bristles**, but it smears existing paint without adding color.

Coarse Smeary Mover

This variant is a semi-anti-aliased version of **Smeary Mover**.

Coarse Smeary Bristles

This variant is a semi-anti-aliased version of **Smeary Bristles**.

Coarse Distorto

This variant is a semi-anti-aliased version of **Distorto**.

Thick Oil

Thick Oil smears with a stroke loaded with the primary color.

Distorto

This variant moves paint around without adding color. Dragging quickly produces a thinner stroke; dragging slowly creates a wider one.

Brush

The **Brush** provides effects you'd expect from oil paints and acrylics. All of the brush variants cover underlying brush strokes, and many are capable of multi-colored strokes.

For information on defining the colors for multi-color brushes, refer to .

Some of the brush variants, like **Loaded Oils**, give the striated effect of real bristles. Using these variants with **Apply Surface Texture** in the **Effects** menu produces some great oil or acrylic-like brush strokes.

Penetration Brush

This brush has hard, aliased edges. Its strokes look like acrylics when you apply surface texture to them using the Effects menu. For more information, refer to . The **Penetration Brush** reacts to grain. Pressing lightly with a stylus allows more texture to show through; pressing heavily reveals less texture.

Camel Hair Brush

The **Camel Hair Brush** gives soft, anti-aliased strokes. Bristle size is dependent on drawing speed. Dragging quickly narrows each bristle; dragging slowly widens each bristle. **Opacity** depends on pressure.

Brushy

Brushy is a multi-bristle brush that runs out of paint toward the end of a stroke and picks up colors it's dragged through.
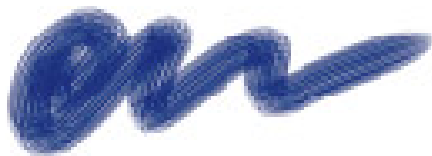
Fine Brush

The **Fine Brush** is a very fine-hair brush that changes scale quickly based on pressure.
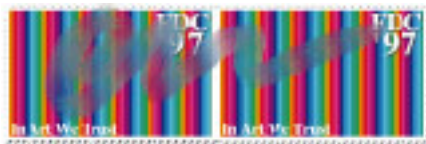
Sable Chisel Tip Water

This variant is a fine-hair brush that uses water to smear the colors in an image.

Loaded Oils

The **Loaded Oils** brush simulates the look of a traditional loaded brush—a brush dipped in more than one color. Use the **Color Variability** sliders to adjust how loaded oils appear. For more information about **Color Variability**, refer to .

Big Rough Out

This variant is a wider version of **Rough Out**.

Big Dry Ink

Big Dry Ink is like **Big Wet Ink**, but with a bit harder edge.

Huge Rough Out

This variant is an even wider version of **Rough Out**.

Big Loaded Oils

This variant is a wider version of **Loaded Oils**.

Hairy Brush

The **Hairy Brush** simulates strokes made by a bristle brush, showing semi-anti-aliased "brush hair" lines. The **Hairy Brush** interacts with grain and is pressure sensitive in terms of opacity and stroke width. The **Hairy Brush** can paint multi-color strokes.

You can customize the **Hairy Brush** dramatically by adding bristles and opening up space between them. For instructions, refer to "Spacing Palette" on page 61.

Big Wet Oils

Big Wet Oils is a wide loaded brush that mixes with the colors in the image.

Graduated Brush

The **Graduated Brush** is ideal for shading. It paints semi-anti-aliased brush strokes of just the primary color or the primary and secondary color, depending on pressure. It interacts with grain, and its stroke width is also determined by pressure.

For instructions on selecting primary and secondary colors, refer to "Primary/Secondary Color Rectangles" on page 128.

Smaller Wash Brush

The **Smaller Wash Brush** has a multitude of fine, closely spaced bristles that mix and smear the current color with colors in an image.

Big Wet Ink

Big Wet Ink is a thick striated brush, loaded with ink. It has a soft appearance and looks like the bristles are spread apart.

Cover Brush

The **Cover Brush** produces brush strokes that have soft, anti-aliased edges. It does not interact with grain. Stroke width and opacity are determined by pressure.

Rough Out

Rough Out acts like a fast, dry brush and is ideal for roughing out ideas. The dab size of the brush is dependent on drawing speed. The faster you drag your stylus, the thinner the lines. Dragging slower produces thicker lines. The amount of grain revealed by this

brush depends on pressure. Pressing lightly reveals more grain; pressing harder reveals less grain.

Ultrafine Wash Brush

This variant is similar to the **Smaller Wash Brush** but with a larger bundle of finer bristles.

Oil Paint

The **Oil Paint** brush gives you strokes that have hard, aliased edges. Its strokes interact with grain. Stroke width and opacity are determined by pressure.

Small Loaded Oils

This variant is a narrower version of **Loaded Oils**.
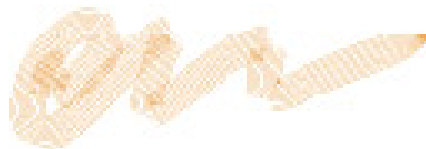
Digital Sumi

The **Digital Sumi** brush variant is a multiple-bristle brush made up of single-pixel bristles. Pressure affects width.

Coarse Hairs

The **Coarse Hairs** brush produces a stroke with a small number of coarse hairs that change scale quickly based on pressure.

Artists

The **Artists** brush helps you paint in the styles of the master artists. Paint in the style of Vincent Van Gogh, where your brush strokes are multishaded, or in the style of Georges Seurat, where multiple dots combine to form an image.

With all of the **Artists** brush variants, dragging quickly produces narrower strokes, dragging slowly produces wider strokes. Use the **Color Variability** sliders to adjust how the **Artists** brush strokes are colored. For more information about **Color Variability**, refer to .

Van Gogh

One of the things that made Vincent Van Gogh's style special was his use of multicolored brush strokes. The **Van Gogh** brush recreates this style with a multicolored, anti-aliased brush stroke that covers underlying colors.

This is a complex brush and the strokes must be pre-computed; hence the dotted line that follows the cursor during the

stroke. For best results, use shorter strokes with this brush, and wait for them to render before making new strokes.

Impressionist

This brush re-creates the style of the Impressionists who painted with flattened dabs of color. The direction you drag determines the angle of the dab.

You can use the **Impressionist** variant to push around existing paint in an image by moving the **Opacity** slider to the left.

Auto Van Gogh

The Auto Van Gogh variant is used in conjunction with **Effects menu▸ Esoterica▸ Auto Van Gogh**. For more information on Auto Van Gogh, refer to

Flemish Rub

This variant creates an effect similar to the Impressionist variants. The difference is that **Flemish Rub** smears existing color instead of applying new color. Use this variant to apply an impressionistic effect to an existing image.

Van Gogh 2

Van Gogh 2 has about the same look as **Van Gogh** but it paints interactively—the strokes do not have to be pre-computed.

Piano Keys

This variant creates a colorful ribbon-like stroke with color bands perpendicular to the direction of your stroke. **Piano Keys** uses a closely spaced, thin captured rectangular tip to produce the effect.

Seurat

Georges Seurat painted in the pointillist style, a neo-Impressionist technique of using clusters of dots to represent the subject. The **Seurat** brush automatically creates multicolored, anti-aliased dot clusters. To add more dots, drag over the area again.

You can regulate dot size on the **Size** palette accessed from the **Brushes palette: Controls menu▸ Size**. Move the **Size** slider to the right to make the dots bigger.

Cloners

The variants of the **Cloners** brush behave like their "plain" brush counterparts—for example, the **Chalk Cloner** produces the same effect as the **Artist Pastel Chalk** variant of the **Chalk** brush.

You can customize the **Cloners** variants with Painter's other customizing functions that are described in "Customizing Painter's Brushes" on page 55.
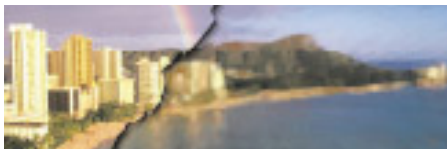
Melt Cloner

The **Melt Cloner** melts an image so that it looks like it's dripping, and works the way the Distorto variant in the **Liquid** brush works. When you use this brush with oil painting, it looks like you applied paint with a palette knife.

Van Gogh Cloner

This variant paints multicolored brush strokes in the style of Vincent Van Gogh.

Felt Pen Cloner

This variant re-creates felt pen strokes that get darker as you paint over other strokes. To keep the colors from darkening too quickly, move the **Opacity** slider in the **Controls palette: Brush tool** to the left.

Hard Oil Cloner

The **Hard Oil Cloner** gives you a harsh stroke with a hard edge that interacts with the grain and covers underlying strokes. It's good for oil painting and works best with short strokes.

You can configure this cloner to respond to speed or velocity of stroke. Use **Brushes palette: Control menu▸ Sliders** and **Brushes palette: Control menu▸ Size** to adjust the size based on velocity. How quickly you drag the mouse or stylus determines the width of the stroke. Drag slowly for thick strokes, quickly for thin ones. This brush interacts with the current paper texture.

For more information, refer to "Size Palette" on page 57 or "Sliders Palette" on page 71.

Driving Rain Cloner

This variant clones your image as it would look through a window during a rainstorm.
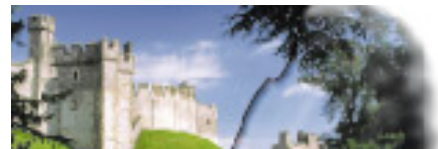
Soft Cloner

The **Soft Cloner** gives you airbrush-style strokes that softly recreate the source area. The edges of the **Soft Cloner** brush are soft, allowing it to blend realistically with an existing background.
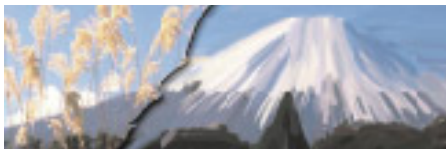
Hairy Cloner

The **Hairy Cloner** paints like the **Hairy Brush** variant of the brush, producing somewhat anti-aliased strokes that show the brush's "hair lines" and react to the grain. This brush is useful with oil painting.

Oil Brush Cloner

The **Oil Brush Cloner** gives you anti-aliased brush strokes that hide underlying ones. This is another good brush to use with oil painting. Short strokes work best with the **Oil Brush Cloner**. How quickly you drag the mouse or stylus determines the width of the stroke. Drag slowly for thick strokes, quickly for thin ones.

Impressionist Cloner

The **Impressionist Cloner** uses the directions of your brush strokes to place many short dabs in varied colors based on the source point.

Painter has all of these great brushes to create surface maps, but you can also customize your own brushes. The next chapter describes all of the brush controls and how you can customize Painter's brushes for your own specific needs.

Straight Cloner

This variant duplicates the image without changing it. Simply click and drag and you'll see the area around the source point come through.

Pencil Sketch Cloner

This variant imitates pencil lines. To get a quick-sketch effect with uneven lines, open the **Brushes palette: Controls menu▶ Random palette** and move the **Clone Location How Often** slider all the way to the left.

Chalk Cloner

This variant draws like the **Artist Pastel Chalk** variant of the **Chalk** brush.

Water Color

The **Water Color** brush variants produce natural looking watercolor effects.

All of the **Water Color** variants, except Wet Eraser, interact with the canvas texture. The **Grain** slider works differently with the **Water Color** brushes than with the other brushes. With **Water Color** variants, moving the slider to the right makes the texture more pronounced. Moving the slider to the left reduces the grain interaction.

Stylus pressure affects the width of the brush stroke for all of the **Water Color** brush variants except **Wet Eraser**. Increased pressure widens the brush stroke; less pressure narrows the stroke.

Pure Water Brush

This variant behaves like the **Water Brush Stroke** variant except without adding color. Use this variant to spread and blend the colors of existing watercolor strokes.

Broad Water Brush

This variant paints a wide brush stroke that shows its bristles.

For ways to customize bristle brushes, refer to .
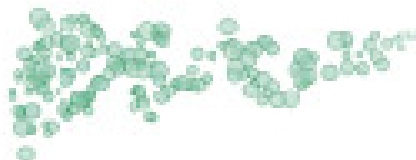
Spatter Water

This variant spatters water randomly with each stroke.

Simple Water

The **Simple Water** variant leaves a stroke of the primary color without bristles.

Large Simple Water

This is a larger version of the **Simple Water** variant.

Water Brush Stroke

This variant is a watercolor bristle brush. When you first make a stroke, a dotted line appears while Painter computes the stroke.

Large Water

This variant paints a broad wash of color.

Diffuse Water

This variant produces a stroke with diffuse edges (refer to the description of **Diffusion** at the beginning of the **Water Color** section).

Wet Eraser

The **Wet Eraser** removes watercolor strokes from the wet layer. The **Wet Eraser** is pressure sensitive. Pressing heavily erases more quickly.

If you've "dried" the wet layer (by saving the image), use the regular eraser to remove the stroke from the image.

New Brush Variants

Painter 5's new brush variants include plug-in brushes. You can access these brushes by clicking the icon on the **Shortcut To New Brushes Custom** palette.

You can also load these new brush variants by choosing **Load Library** from the **Brush Library** pop-up in the **Brushes** palette.

For more information, refer to .

F/X

Glow

The **Glow** brush delivers soft-edged color that increases in value with each overlapped stroke. The **Opacity** slider controls brush strength. The **Grain** slider controls the saturation of the glow. Low Grain settings lead more quickly to white. High Grain settings increase the saturation of the glow.

To use the **Glow** brush, choose the color you want for the glow. The range between red and yellow produces excellent glows. To slow the effect, choose a color with very low value. (Saturation=100% and Value=10%). Repeat strokes to build the effect.

This brush is useful for painting the halo of light on a glowing object. For best results, use Glow on a dark background.

Fire

Fire is a variation of the **Glow** brush that uses a captured dab to produce tongues of flame. Fire delivers color that increases in value with each overlapped stroke. The **Opacity** slider controls brush strength. The **Grain** slider controls the saturation of the flames. Low Grain settings lead more quickly to white. High Grain settings increase the saturation of the flames.

To use the **Fire** brush, choose the color you want for the fire. An orange-red creates excellent fire. To slow the effect, choose a color with very low value. (Saturation=100% and Value=10%). Repeat strokes to build the effect.

For best results, use **Fire** on a dark background.

Note: You can create fire in a separate floating layer. Create a floater over the area you want to light on fire. Fill the floater with pure black. Set the floater's Composite Method to Screen. This makes it effectively transparent (because all pixels in it are black). Now you can use the **Fire** brush in this floater.

Graphic Print

The **Graphic Print** brush adds contrast broadly. Colors are reduced to black, white or the closest major hue—R, G, B, C, M or Y. Regions are homogenized and borders are softened. Opacity controls brush strength.

Confusion

The **Confusion** brush creates a confusion pattern in existing imagery. Repeat strokes to build confusion. Only the **Size** slider has an effect on Confusion. The **Color** palette and other sliders have no effect.

Bubbles

The **Bubbles** brush creates circles of distortion in underlying imagery. The distortion is like the refraction you see in bubbles. The **Opacity** slider controls the warping in the bubble. Higher Opacity settings produce greater warping. Grain and color settings have no effect.

Gooey

Bulge

The **Bulge** brush distorts existing imagery by spreading it apart. Opacity controls brush strength.

Pinch

The **Pinch** brush distorts existing imagery by pulling it together. Opacity controls brush strength.

Horizontal Pinch

The **Horizontal Pinch** brush distorts existing imagery by pulling it together in horizontal strokes and spreading it out in vertical strokes. Opacity controls brush strength.

Vertical Pinch

The **Vertical Pinch** brush distorts existing imagery by pulling it together in vertical strokes and spreading it out in horizontal strokes. Opacity controls brush strength.

Left Twirl

The **Left Twirl** brush distorts existing imagery by pulling it in counterclockwise spirals. Opacity controls brush strength.

Right Twirl

The **Right Twirl** brush distorts existing imagery by pulling it in clockwise spirals. Opacity controls brush strength.

Twister

Twister is an extreme Right Twirl variant that uses a captured dab.

Blender

Blender is an extreme Right Twirl variant that uses a captured dab.

Turbulence

Turbulence is a Left Twirl variant with randomized dab placement. This brush creates chaotic, fractal-like effects.

Diffuse Pull

The **Diffuse Pull** brush distorts and smears existing imagery in the stroke direction. Opacity controls brush strength.

Marbling Rake

The **Marbling Rake** uses a rake stroke to smear existing imagery in the stroke direction. It's like dragging a comb through thick oil paint. Grain controls the amount of smearing.

Runny

Runny brush creates directional distortion with randomized dab placement. Opacity controls the amount of color applied. Grain controls the amount of distortion.

Layer

The **Layer** brushes use the Transparent Layer Brush Plug-in method subcategory. These brushes paint on transparent portions of image floaters.

Brush

The **Brush** variant of the **Layer** brush creates paint brush-type strokes in a transparent floater.

Airbrush

The **Airbrush** variant of the **Layer** brush creates paint airbrush-type strokes in a transparent floater.

Pen

The **Pen** variant of the **Layer** brush creates Pen-type strokes in a transparent floater.

Mouse

The **Mouse** brush variants are designed for artists using a mouse, not a stylus.
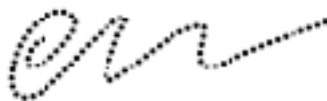
Dotted

The **Dotted** variant creates dotted. lines. Change the size in the Size palette for larger or smaller dots

Spirex

The **Spirex** variant fragments the image.

Line Tool

The **Line** variant is good for drawing in straight line mode.
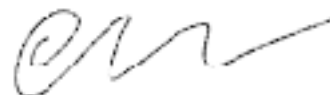
Scratchy

The **Scratchy** variant produces a random width line.

Brush Dab

The **Brush Dab** variant produces nice brushed looking strokes. This brush responds to the velocity of your stroke.

Rubber Stamp

The **Rubber Stamp** variant clones the active clone source. Hold the **Control**/**Shift** key to set the source point in the same document.

Single Pixel

The **Single Pixel** variant produces good clean aliased (jaggy) lines

Impressionist

The Impressionist variant uses directionality in conjunction with thin brush pads.

Calligraphy

The Calligraphy variant produces a stroke similar to calligraphy.

New Paint Tools

Palette Knife

The **Palette Knife** smears existing colors with a large, rectangular dab. It lets you emulate the traditional artist's palette knife painting technique.

Dry Brush

The **Dry Brush** smears existing colors but keeps them from blending too much. This is exactly the effect a traditional artist gets by dragging a stiff, dry brush over oil paints.

Sargent Brush

The **Sargent Brush** smears existing imagery and applies color. The **Grain** slider controls the smearing amount. The **Opacity** slider controls how much of the current color is added in.

Big Wet Turpentine

Big Wet Turpentine smears existing colors with a large, bristle dab. The **Grain** slider controls the smearing amount.

Big Wet Luscious

Big Wet Luscious applies color and smears existing colors with a large, bristle dab. The **Grain** slider controls the smearing amount. The **Opacity** slider controls how much of the current color is added.

Photo

Dodge

Dodge lightens the colors of the image.

Dodge is a photographer's technique. A photographic print is made in the darkroom by projecting the negative's image onto light-sensitive paper. While making a print, a photographer might mask a small portion of the image for a few seconds. The photographer keeps the mask moving, "dodging" it over the paper, so that it won't leave an outline. When the exposure is finished, the area that was dodged received less light. When the paper is developed, the dodged area is lighter.

Burn

Burn darkens the colors of the image.

Burn uses the same technique as dodge, but with the opposite mask—one that covers most of the image. The un-masked portion receives more light during the exposure, so it develops darker.

Blur

The **Blur** brush softens color transitions in existing imagery. Lower Opacity produces a more gentle blur.

Diffuse Blur

The **Diffuse Blur** brush creates a directional motion blur on existing imagery. Lower Opacity produces a milder effect.

Sharpen

The **Sharpen** brush increases contrast in imagery on a small scale so that borders become sharper. For best results, use extremely low Opacity.

Scratch Remover

The **Scratch Remover** brush uses blurring to remove aberrations in the image. For best results, use low Opacity and a small Size setting.

Add Grain

The **Add Grain** brush produces value changes in existing imagery based on the current Paper grain. The **Grain** slider controls the strength of the effect. For best results, keep the **Grain** slider very low.

Relief

The **Relief** brush changes contrast in existing imagery based on image luminance. The result is surface relief (three dimensional appearance) in the image. For best results, keep the **Opacity** slider very low.

Comb

The **Comb** brush changes contrast in existing imagery following the stroke direction. The result is surface relief lines that follow the brush stroke.

Overlay

The **Overlay** brush adds contrast broadly. Colors are reduced to black, white or the closest major hue—R, G, B, C, M or Y. Opacity controls brush strength.

Hue

The **Hue** brush migrates existing colors toward the hue of the current primary color. Saturation and value are not changed. Opacity controls brush strength.

Both the existing imagery and the current primary color must have some degree of saturation for this brush to be effective.

Hue Add

The **Hue Add** brush migrates the hue of existing colors around the color ring. The **Grain** slider controls the direction of hue migration. **Grain** slider settings above 50% migrate hues clockwise. **Grain** slider settings below 50% migrate hues counterclockwise.

Hue Sat

The **Hue Sat** brush migrates existing colors toward the hue and saturation of the current primary color. Value is not changed. Opacity controls brush strength.

To use the Hue Sat brush: Set the color you want to move toward as the primary color on the **Color** palette. Set the **Opacity** slider to describe how quickly you want to get there. Paint in the image to change hue and saturation.

The **Hue Sat** brush is ideal for colorizing grayscale imagery.

Saturation Add

The **Saturation Add** brush changes the saturation level of existing colors. Hue and value are not changed. The **Grain** slider controls whether the brush increases or decreases saturation. **Grain** slider settings above 50% increase saturation. Grain settings below 50% decrease saturation. The closer the **Grain** slider is to either extreme (zero or 100%) the more quickly the colors change saturation level. Opacity controls brush strength.

Note: Color palette settings have no effect on this brush.

Value Add

The **Value Add** brush changes the value level of existing colors. Hue and saturation are not changed. The **Grain** slider controls whether the brush increases or decreases value. **Grain** slider settings above 50% increase value (move toward white). Grain

settings below 50% decrease value (move toward black). The closer the **Grain** slider is to either extreme (zero or 100%) the more quickly the colors change in value. Opacity controls brush strength.

Note: Color palette settings have no effect on this brush.

Value Add Sat Subtract

The **Value Add Sat Subtract** brush changes the value and saturation of existing colors. Hue is not changed. The **Grain** slider controls whether the brush increases or decreases value. **Grain** slider settings above 50% increase value while reducing saturation. Grain settings below 50% decrease value while increasing saturation. The closer the **Grain** slider is to either extreme (zero or 100%) the more quickly the colors change. Opacity controls brush strength. With the **Grain** slider below 50%, this brush is ideal for darkening touch-up work.

Note: Color palette settings have no effect on this brush.

Super Cloners

For more information on the Super Cloners, refer to "The Super Cloner Brush" on page 87.

B

Photoshop Compatibility

Introduction

Painter reads and writes image data in the Photoshop file format. The following descriptions cover how the several document elements are handled.

Note: Unless otherwise stated, "Photoshop format" refers to both version 3.0 and 4.0.

Layers and Floaters

When reading in a Photoshop file with layers, each layer is automatically trimmed and converted to a Painter image floater with the appropriate opacity.

All of Photoshop 3's layer blending modes are supported by Painter. However, Photoshop 4's new blending modes are not supported. These blending modes are converted to Pointers "normal" method, on open. Due to differences in the way

Photoshop and Painter deal with color conversions, a few blending modes will look slightly different in Painter than in Photoshop. Once brought back to Photoshop, the file will look as it did before it was brought into Painter.

Painter's "Pseudocolor" compositing method is not supported in Photoshop. "Pseudocolor" is mapped to Photoshop's "Normal" compositing method. Note that in Painter, "Normal" and "Default" methods are identical. "Normal" is included for compatibility with Photoshop.

Photoshop's user-defined layer masks are automatically consolidated in the image floater's visibility mask. When you bring the image back to Photoshop, the layer masks will have been combined with the non-editable transparency mask for each layer. In addition, Photoshop's ability to clip layer data to the layer below is not supported by Painter.

When saving Painter documents as Photoshop files, each Painter floater is converted to a Photoshop layer. Shapes and Plug-in floaters are committed so that they may appear in Photoshop layers. Opacity and composite methods are maintained whenever possible. Grouped floaters become separate Photoshop layers.

Rulers, Guides and Grid

Painter uses the ruler, guide and grid information when opening Photoshop 4.0 documents. Likewise, Painter saves this data in Photoshop 4 format, so it will be available to Photoshop.

Adjustment Layers

Painter does not support adjustment layers. This data is dropped when Painter opens a Photoshop 4 file.

Paths

When you open a Photoshop file that contains paths, Painter alerts you that paths will be converted to shapes. Click **OK** to proceed.

If the Photoshop path consists of subpaths that are completely separate from each other (i.e., they don't intersect), each of these subpaths will be converted to an individual Painter shape. If any of the subpaths have "holes" in them (i.e., some subpaths lie completely inside other

subpaths), each Photoshop subpath with "holes" will be converted to a Painter shape with "holes."

When saving Painter documents as Photoshop files, Painter "assumes" that shapes are elements of the image and converts them to pixel data so that they can go into a Photoshop layer. However, if you are using shapes to generate selections, you might want them as paths in Photoshop. This is easy to accomplish.

To transfer Shapes to Photoshop paths:

1 Group all shapes you want converted to Photoshop Paths.

2 Select the group and choose **Shapes menu▸ Convert to Selection**.

3 Save the file in Photoshop format.

Any path-based data in the selection is converted to paths for Photoshop format.

Note: Mask-based data in the selection is ignored when saving to Photoshop format.

Channels and Masks

When reading a Photoshop with channels, Painter converts channels #4 and above to user masks. When saving a Painter document with user masks as a Photoshop file, the masks are saved to channels #4 and above in the Photoshop file.

Painter does not support transparent images. Therefore, when you open a transparent Photoshop file, Painter automatically creates a blank background on which all of the layers will sit.

Previewing Photoshop Separations:
If you are creating artwork in Painter with the intent of separating the image (into CMYK files for printing) in Photoshop, you might want to use Painter's Output Preview feature to see how Photoshop will make the separation.

For complete information on setting up and using Output Preview, .

To use the output profile derived from Photoshop's default separation tables, choose **Photoshop RGB—>CMYK** (Macintosh) or **RGB2CMYK** (Windows) as the output device profile.

If you've created a custom separation table in Photoshop by loading an ICC profile for a particular printer. You should select that ICC profile for the output device profile.

Index

T

Fractal Design License Agreement

THIS LICENSE AGREEMENT IS A LEGAL AGREEMENT BETWEEN YOU, THE END USER, AND Fractal Design Corporation. IT IS A LICENSE AGREEMENT AND NOT AN AGREEMENT FOR SALE. PLEASE READ THIS LICENSE AGREEMENT CAREFULLY BEFORE OPENING THIS SEALED PACKAGE. IF YOU DO NOT AGREE WITH THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT, PROMPTLY RETURN THE PACKAGE UNOPENED TO THE PLACE YOU OBTAINED IT AND YOUR MONEY WILL BE REFUNDED.

Fractal Design Software License

1) License

This software can only be used on a single computer at any one time. This means that the software should be loaded on only one hard drive at a time. If you wish to use this software on more than one computer, you must either erase the software from the first hard drive when you move the software to a second hard drive, or else purchase two copies of the software. You may not under any circumstances have this program loaded onto the hard drives of two or more computers at the same time. You also may not copy this software onto a hard drive and then use the disks on another computer. The software may be executed from a common disk shared by multiple computers provided that one authorized copy of the software has been licensed for each computer executing the software.

2) Copyright

This software is owned by Fractal Design and is protected by United States copyright laws and international treaty. By law, you, the end user, may do the following:

a) make a copy of the software solely for backup or archival purposes; or

b) transfer the software to a single hard disk, provided you keep the original solely for backup or archival purposes.

United States copyright laws prohibits you from making any other copy of the software for any reason without our permission. These federal copyright laws also prohibit you from copying the written materials accompanying the software without first obtaining our permission.

3) Restrictions

You may not rent, lend, lease, or assign this software. You may, however, transfer the software and the accompanying written materials on a permanent basis. When you transfer the software on a permanent basis, you may not keep any copies, and you must remove the software from your hard disk. Also, the person to whom you transfer the software must agree to the terms of this License.

You may not alter, modify or adapt the software or accompanying materials. In addition, you may not translate, decompile, disassemble or reverse engineer the software. You also may not create any derivative works based on this software. A derivative work is defined as a translation or other form in which the software may be recast, transformed or adapted.

4) Limited Warranty

Fractal Design Corporation warrants that this program will perform in substantial compliance with the published specifications and documentation supplied in this package, provided it is used on the computer hardware and with the operating system for which it was designed. This warranty is limited to a period of 90 days from the date of the original purchase.

Fractal Design Corporation warrants that the original disks and documentation are free from defects in material and workmanship, assuming normal use, for a period of 90 days from the date of purchase.

5) Remedies

If you report a significant defect in performance of the software in writing, within 90 days of purchase, Fractal Design Corporation will attempt to correct it or, at its option, authorize a refund of your license fee.

If a defect in the disk or documentation occurs during this period, you may return the faulty disk or documentation, along with a dated proof of purchase, and Fractal Design Corporation will replace it free of charge.

6) No Other Warranties

Except as specifically provided above, Fractal Design Corporation makes no other warranty or representation, either express or implied, with respect to this software, the disks or documentation, including their quality, merchantability, or fitness for a particular purpose. In no event will Fractal Design Corporation be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the software or documentation, even if Fractal Design Corporation has been advised of the possibility of such damages.

The warranties and remedies set forth above are exclusive and in lieu of all others, oral or written, express or implied.

Fractal Design Corporation is not responsible for any costs including, but not limited to, those incurred as a result of lost profits or revenue, loss of time or use of the software, loss of data, the costs of recovering such software or data, the cost of substitute software, claims by third parties, of other similar costs. In no case will Fractal Design Corporation's liability exceed the amount of the license fee.

The warranties provided give you specific legal rights. You may have other rights which vary from state to state. Some states do not allow the exclusion of incidental or consequential damages, or the limitation of how long an implied warranty lasts, so some of the above may not apply to you.

7) U.S. Government Restricted Rights

Fractal Design Painter and documentation thereto are provided with RESTRICTED RIGHTS. Use, duplication or disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at 52.227-7013. The contractor/manufacturer of Fractal Design Painter and documentation thereto is Fractal Design Corporation, P.O. Box 66959, Scotts Valley, CA 95067-6959, (408) 430-4000.

Fractal Design Painter Troubleshooting Worksheet

Fractal Design Technical Support

Phone: **(408) 430-4200**

Fax: **(408) 438-9672**

Date:_____

Your Name: _____

Phone: _____

Fax:_____

p Macintosh   p Windows

System Software version: _____

Fractal Design Software version (ex. 4.1.2)

Found on the splash screen:_____

Serial #: _____

Description of Problem:

Do symptoms appear: Consistently   Intermittently   Once only

---

Describe how to duplicate the problem, step by step:

1)

2)

3)

4)

Have you checked our Website, **www.fractal.com**, to see if the solution to the problem is already posted?   p Yes   p No

Does the problem still occur under the following conditions?

Windows		**Macintosh**
Using Standard VGA video driver? Yes/No		When all Extensions are off? Yes/No
When all TSRs are off?	Yes/No	