How To Do Cool Things in Ray Dream
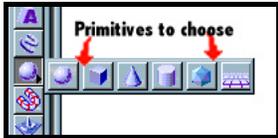
# Moving and Manipulating 3D objects

To successfully manipulate a 3D object we will create a simple primitive and then reposition the object in 3D space. For more rapid success and understanding, please find the following tools/buttons within the Ray Dream interface:

*Selection Tool button*
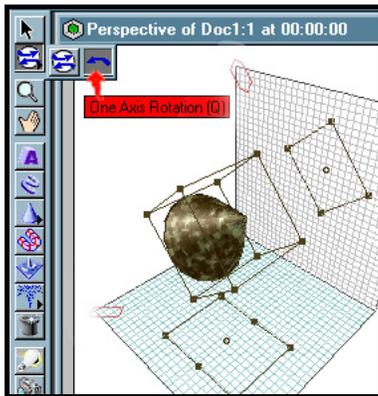
*Virtual Trackball/Rotation buttons*

*Click to turn on:*

*The Interactivity Button...*

*Primitive tool button*

*and Shaded preview*

**1)** Mouse Click hold and drag a primitive object into the grid center in the perspective window (the empty 3D scene).

**2)** Use the selection tool to mouse click and drag the object back forth, in and out along the grid. Release the object in the middle of the grid.

**3)** In the workspace display, turn on one of the verticle grids by clicking once on the small icon's corresponding preview.

**4)** Click the mouse in the primitive object's projection on the vertical grid and lift the object. (Do not grab the object's center hot spot).

**5)** Select the Virtual Trackball option on rotation button and rotate the object by grabbing the handles of the three ellipses around the object.

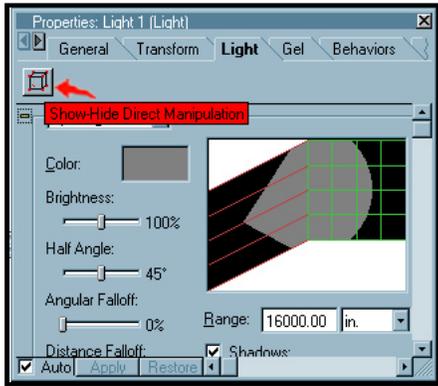

*One Axis Rotation*
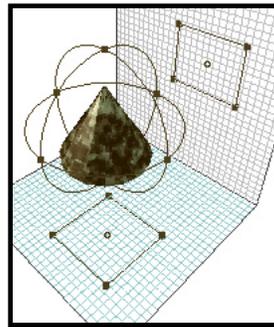


*Virtual Trackball*



*Workspace display*

# Using direct manipulation and point at to control lighting.

Find the following windows/tools:

In the Properties palette, find Light Tab and Direct Manipulation button

*Light tab and direct manipulation*

Also, on the Properties palette, find the Behaviors Tab.

Locate the Time Line palette.

Finally, find light in perspective window (it's the red cone).

**1)** Select light and be sure direct manipulation is toggled on.

**2)** Find projection of light beam on the floor grid plane in perspective window and experiment dragging each handle. Position handles to reveal an ellipse showing the light's cone shape.
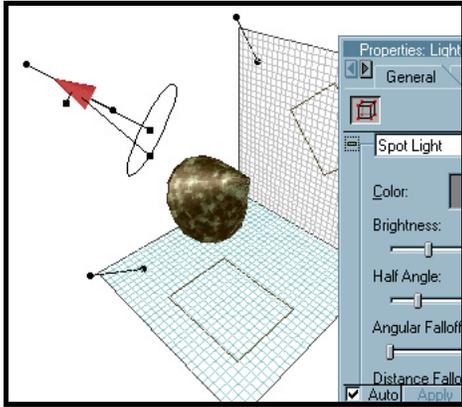
*Reposition lighting*

**3)** Grab handle on ellipse and hold down Alt/Option key, mouse click, hold, and drag inside the ellipse to create a 2nd inner ellipse.

**4)** Note changing light preview in Lights tab as you change the diameter of the ellipses by dragging each handle.

**5)** Grab the handle that comes out of the light (at a right angle to the lines which pass through the ellipses) and drag this handle to change the light's brightness.

# Pointing a light at an object

To control pointing the light, turn on all three grids using the Display Workspace Planes button. Drag a primitive into the center of the floor grid or use the object created in the first example.  Note name of object in the Time Line including use of capital letters.

 1) Click on to select the light and use the three projections to roughly aim the light at the object.

2) Choose the Behavior Tab in the Prop Palette. Click the plus button.

3) Select "point at" from pop-up window.
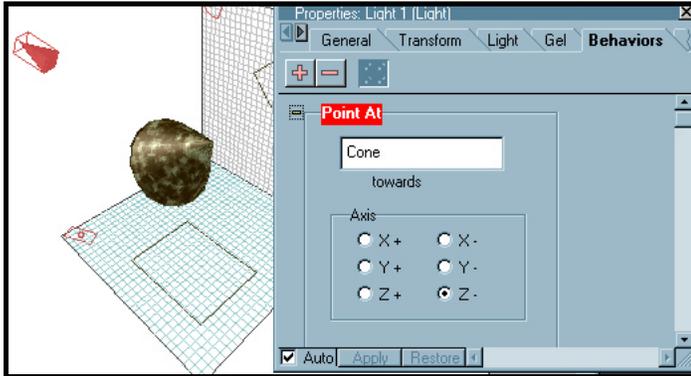


4) Click in "towards" field to  activate it, then type in Object name exactly as shown in time line including Caps.

Experiment with light by dragging around and releasing it. Note how it always points at object.

*Point AT Behavior*

# Create complex environments using the Scene Wizard.



*The Scene Wizard*

**1)** Navigate to File> New to create a new scene.

**2)** Choose the "Use Scene Wizard" option.

**3)** Select Logo template and click Next button.

**4)** Select the Lightbulb option and click the Next button.

**5)** Type your first name in the top type field and your last name in the lower type field. Click Done.

**6)** Click Render Preview button and drag a selection around the model you've created to render a simple preview.

OPTION: Choose Apply Scene Wizard from File pulldown menu to apply new Scene Wizard settings if you want to experiment.
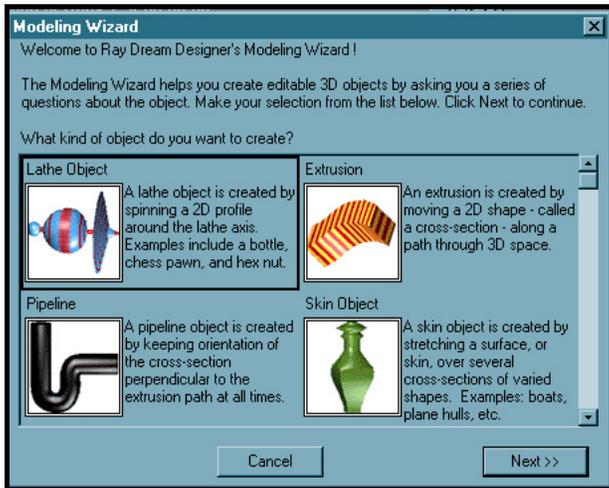
# Using the Modeling Wizard to create complex objects
## with one step buttons .

Find Modeling Wizard button.



*the modeling wizard button*

*modeling wizard*



**1)** Click Modeling wizard button. Click and drag in the center of the 3D scene

**2)** Choose Lathe Object. Click Next

**3)** Choose Vase Profile. Click Done.

**4)** Increase Vase size by grabbing upper left hand corner handle. Using mouse click and shift key drag the handle and release when the Vase is large enough to view easily.

OPTION:  To see how vase is constructed, double click on the vase. This Jumps into free form modeler. Click Done to leave Free Form modeler.

# Applying Shaders means changing colors and textures

**1)** Use the Vase created in prior example to apply a Surface Shader (color/texture)

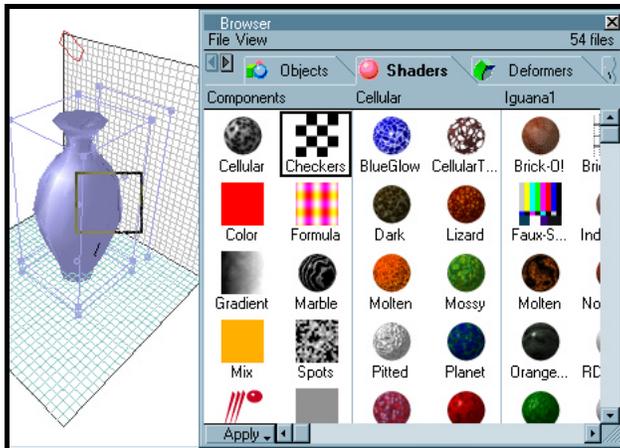**2)** Navigate to Windows>Browser and click on the Shader Tab.

*Shaded preview*



*Shader browser*



**3)** Select Shaded Preview setting.

**4)** Select Checkers Shader. Click and drag the texture onto the Vase in the perspective window.
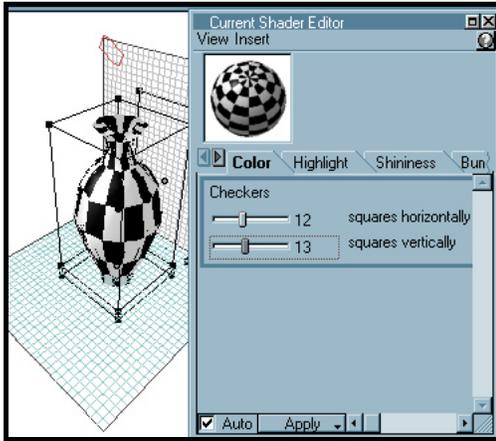
**5)** Choose eyedropper tool and sample the applied Shader by clicking on the Vase.

**6)** Click Auto in lower left hand corner of Shader Editor pop-up window.

**7)** Change numerical settings for checkers in Color tab of Editor. Choose a number higher than twelve for each of the 2 sliders.

*Shader Editor*

The texture will update automatically. Close Shader Editor window when you are finished experimenting.

# Key Frame Animate a primitive using the Time Line

Navigate to View>Tool Bars and make sure that a check mark appears next to the Time Controllers option.

**1)** Drag a primitive into center of floor grid in Perspective window.

**2)** Click on the Time Line palette.

**3)** Click and drag small red triangle of Current Time bar to position it at the :02:00 second point.
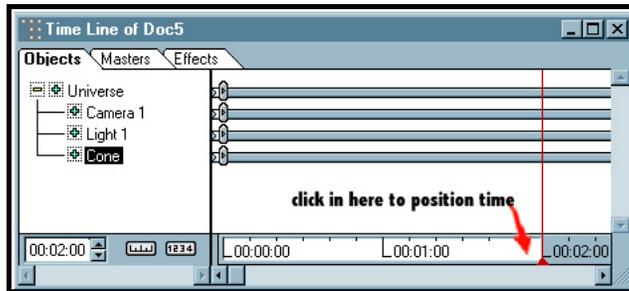


*Set time position*

**4)** Select Perspective window and move primitive object's postion.

**5)** Use Time Controller like a VCR to playback your animation.

# Using Deformers to create effects like an explosion

**1)** Use the Modeling Wizard to create a Vase. Make it larger using bounding box handles (remember to hold down the shift key to keep proportions intact!).

**2)** Click on the Deformer Tab in the Browser palette.

**3)** Use the lower Scroll Bar in Browser palette to locate Explode library.

**4)** Click and drag the "Top Down" Deformer preset onto Vase.

**5)** Advance the Time Line Time bar to :02:00.

**6)** Click on the Deformers Tab on the Properties palette. Slide "Completion Of Explosion" from 50% to 100%.

**7)** Rewind animation via Time Control VCR buttons. Playback animation.

*Deformer Properties*

*(cont...)*
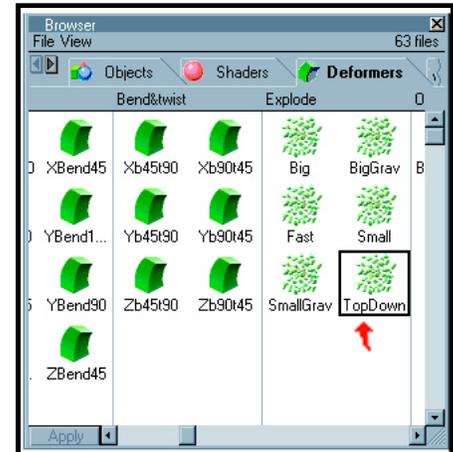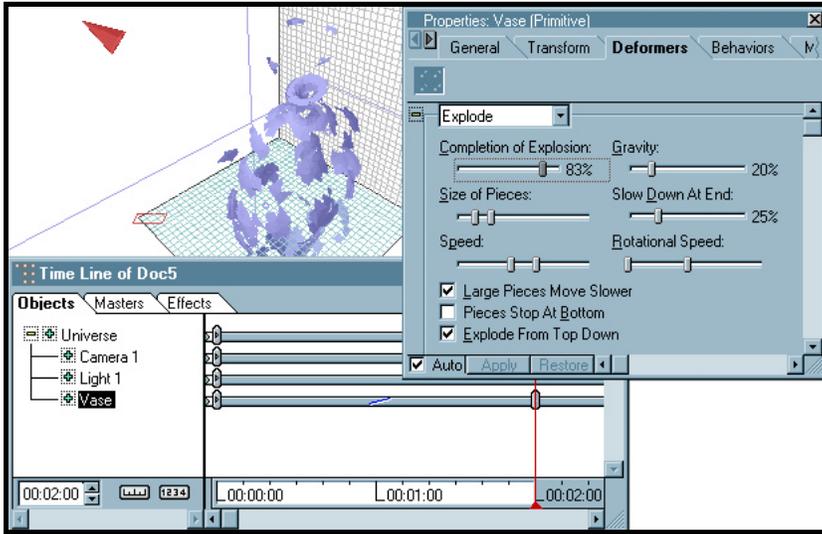
*Deformer Explosions*

OPTION: Experiment with other Deformers by holding down arrow next to word Explode in Properties> Deformers palette. To create new custom Deformer library settings, drag from Properties> Deformers into appropriate Browser> Deformers tabbed heading.

# Very Cool Rendering Options

**1)** Use the Modeling Wizard to create a vase as in prior examples. Make the vase larger using bounding box handles.

**2)** Navigate to View>Production Frame to display the production frame on the scene.
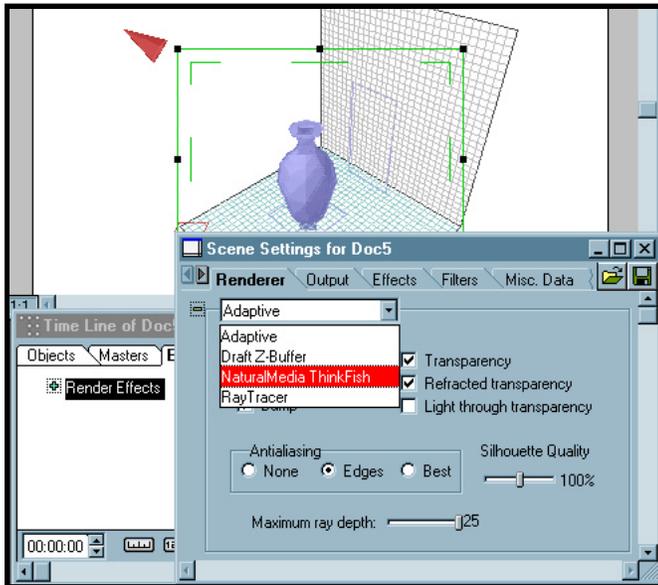


*Render Options*

**3)** Click on the production Frame in Perspective Window to change aspect ratio of Frame.

**4)** On the Time Line>Effects Tab, double click on words "Render Effects".

**5)** In Scene Settings pop-up dialog window select Renderer Tab to display rendering options.

**6)** Change Renderer type from Adaptive to NaturalMedia ThinkFish.

**7)** Under Cube Preview, toggle on Auto Preview and Preview Scene.

OPTIONS: Check out Crystal Setting and Silk Screen setting. Choose one of these two. Experiment with settings and Line color choices. Close window.



*Think Fish*
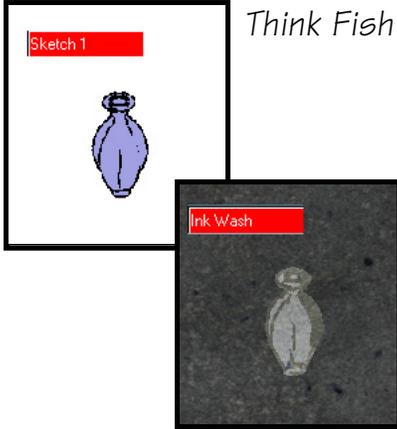
# Applying Physical Animation Behaviors

**1)** Create a primitive sphere in the center of the floor grid. Using a vertical wall grid lift the sphere off the floor to the top of the vertical grid.

**2)** Create a second primitive, a cube this time in the center of the floor grid. Change the shape of this cube to create a floor using the handles (squash it down flat).
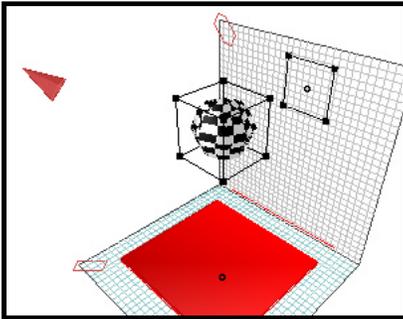


*Getting ready for gravity*

**3)** Click on the sphere and select the Behaviors tab on the Properties palette.

**4)** Click on the Plus sign button and choose Apply Physical Effects from pop-up menu. Choose Okay to close menu.
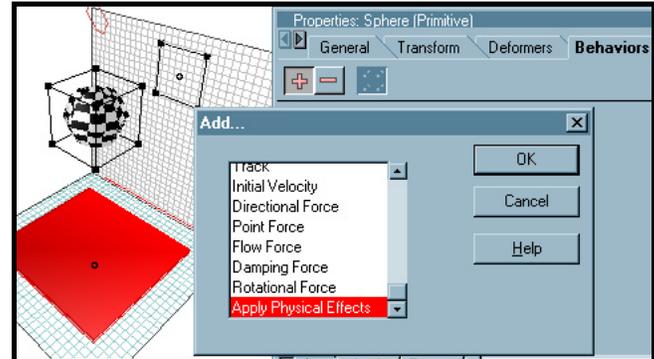
*Properties Behavior*

**5)** Select the sphere, click on the Plus sign button second time and choose Directional Force from pop-up. Click OK.

**6)** Change Z setting to -80.

**7)** Select the cube that you made into a floor.  Click on the Behaviors tab on the properties palette.  Click on the Plus sign.  Choose Physical Effects and click OK.  Uncheck the box next to "Movable by Impact" to keep the floor from moving when hit by another object.

**8)** Use Time Controller like a VCR to playback your animation.