

## Identification of



Intervals,



Chords



and Scales

The Chord, Interval and Scale exercises work the same way.

EarMaster plays a random chord chosen from among the selected chords and transposed to a randomly chosen key. Your job is to identify what was played.

Basically you can give your answer in two ways: either directly give the name of the chord or name each tone you heard. However, there are several ways you can do this.

Press:

'Play question' to play the question again.

'Play selected' to play your answer (the tones you have entered).

'Answer' when you have entered the tones and want EarMaster to evaluate your answer.

If your answer is wrong, EarMaster will indicate your answer with a red color and the correct answer with a green color.

You can always get detailed information of your current results and compare it with previous results, in the "Results" window.



[Setup Chord Identification](#)

[Theory on Intervals](#)

[Theory on Chords](#)

[Theory on Scales](#)



## Interval comparison

Which interval is the greater?

EarMaster plays two intervals randomly chosen from among the selected intervals.

Click on 'A' if the first of the intervals was greater or 'B' if the last was greater. The frame around the chosen answer will change color. Green if the answer is correct. Red if the answer is wrong.

Press 'Play question' to play the intervals again.

You can always get detailed information of your current results and compare it with previous results, in the "Results" window.



[Setup Interval Comparison](#)

[Theory on Intervals](#)



## Melody dictate

What tones are played?

EarMaster plays a phrase according to the settings in the setup. Your job is to identify which tones were played and transcribe them using the [note sheet, piano or guitar](#).

Press

'Play question' to play the phrase again.

'Play selected' to play your answer (the tones you have entered).

'Answer' when you have entered the tones and want EarMaster to evaluate your answer.

You can always get detailed information of your current results and compare it with previous results, in the "Results" window.



[Setup Melody dictate](#)



## Rhythm reading and



## Rhythm imitation

Rhythm reading: EarMaster shows a rhythmic score. You clap it following the metronome.

Rhythm imitation: EarMaster plays a rhythm. You repeat it following the metronome. After your first attempt you can choose to view the rhythm to support you in a second attempt.

You can either tap the rhythm on the space bar, play the rhythm on a MIDI instrument or clap into the microphone. Microphone recording is enabled in the "Answer input" menu.

In the rhythmic score you will see a symbol below each note:



If the note was hit correctly.



If you hit the note a bit too early.



If you hit the note a bit too late.



If you did not hit the note at all.

Notice: EarMaster also evaluates how precise the rhythm was clapped, so you might not get 100% even though you got all the notes.

You can always get detailed information of your current results and compare it with previous results, in the



"Results" window.

The difficulty level and length of the rhythm can be set in the exercise setup.

[Setup Rhythm Imitation](#)



## Rhythm correction

Find differences between a transcribed rhythm and a played rhythm.

EarMaster shows a rhythmic score. When you press 'Play changed', EarMaster will play the shown rhythm but with a few changes. Only three types of changes are possible:

- one note is divided into two notes.
- two notes are joined together.
- two notes are exchanged.

You select all the notes involved in the changes. A note is selected with a mouse click on it. A second click will deselect it.

When all notes are marked click 'Show changes'. This will show both the played rhythm and the correct selections.

You can always get detailed information of your current results and compare it with previous results, in the "Results" window.



The difficulty level and length of the rhythm can be set in the exercise setup.

### Setup Rhythm Correction



## Chord progressions

EarMaster plays a chord progression. Your job is to identify the harmony functions (scale degrees) and quality of the chords that were played.

Basically you can give your answer in two ways: either directly give the name of the chord progression or give each chord you heard. In the "Answer input" menu you can show and hide the different answer options:

**Notesheet** - in this exercise you cannot use the note sheet to give your answer. Instead it is used to show your answer. Click in one of the bars to play the chord and to move the orange cursor to this bar. Just below the notesheet you will find a panel where you can specify the quality of the chord. If you click on a chord in the notesheet (to move the orange pointer), you can change its quality on these buttons and hear the sound of it at the same time.

**Name** - Click once on the button with the name of chord progression. Left click to select and play the tones without giving it as the answer to EarMaster. Right click to select the tones and give this as your answer.

**Piano** - the harmony functions in the current key are shown on the piano. Left click to insert a chord in the position where the orange cursor is shown in the notesheet, right click to remove the chord. You can change the instrument sound and volume in the green display.

**Guitar** - the harmony functions in the current key are shown on the guitar. Left click to insert a chord in the position where the orange cursor is shown in the notesheet, right click to remove the chord.

Press

'Play question' to play the question again.

'Play selected' to play your answer (the chords you have entered).

'Answer' when you have entered the chords and want EarMaster to evaluate your answer.

If your answer is wrong, EarMaster will indicate your answer with a red color and the correct answer with a green color.

You can always get detailed information of your current results and compare it with previous results, in the "Results" window.



[Setup Chord progressions](#)



## Setup chords, intervals and scales

**The tone setup panel** - click to include/exclude the element (chord, interval, etc) in the exercise.

The first elements (red text) are predefined and cannot be edited, but below those you can add your own.

If the text is green, the name and tones can be edited.

**Root movement** - Set an upper and lower limit for the root and specify how the root should be chosen within this limit.

**Playstyle** - choose how you would like the tones to be played: Harmonic, Melodic up, Melodic Down. If several are selected, the style will be chosen randomly.

Options:

Auto answer

Common tone - (only in Interval Comparison)

Show first tone

Show Key signature

Play tone on click

Play tonic

Diatonic roots (only in Interval identification)

Inversions (only in Chord progressions)

Add root basetone

Lock answerinput (only in EarMaster School)

Corresponding exercises:

Interval comparison

Interval identification

Chord identification

Chord inversion identification

Chord progression

Scale identification

**Auto answer** - EarMaster will automatically press the Answer button when the correct answer is selected.



**Common tone** - the two intervals will be played with the same root tone.

**Show first tone** - EarMaster will select the first tone (or bottom tone in harmonies) of the answer for you.

**Show Key signature** - choose whether the key signature should be shown permanent instead of adding sharps and flats for each note.

**Play tone on click** - enable sound on the piano, guitar and note sheet.

**Play tonic** - play some tones before the question to put you into the tonality.

**Diatonic roots** - the interval is transposed within the key so that it will always consist of diatonic tones.

**Inversions** - choose how the chords are inverted:

1) All chords in root position

2) Last chord in root position. The preceding chords will be inverted to a position with the top tone closest to the top tone of the last chord.

3) Random inversion of last chord. The preceding chords will be inverted to a position with the top tone closest to the top tone of the last chord.

**Add root basstone** - adds the root tone of the chord at the bottom.



**Lock answerinput** - to control how the user answers the questions, e.g. when making a tutor.

**Rhythms** - Include rhythmic values in the melodic phrases. When answering a question you need to transcribe both the pitch and the note length. Only whole, half and quarter notes will be included.

The name of the element.

Placing the sign '&' before one of the letters in the name will make a shortcut to the button with this name. This makes it possible to answer the question with the keyboard by pressing <Alt> + letter.

The structure of the element tones as they are played in the exercise.

Click the keys on the piano to turn each tone on/off.

The tones can also be defined from a MIDI-keyboard. The small green triangle indicates the center (keyhole) C.



## Setup Melodies

The melody phrases are generated by EarMaster using an intelligent algorithm according to the selections described below:

**Tones** - the length of the phrase.

**Scale/progression** - choose a scale, mode or chord progression to base the melodic phrase on.

**Maximum interval** - the maximum interval between two adjacent tones.

**Ambit** - the maximum interval from the lowest tone in the phrase to the highest tone in the phrase.

**Tone limits** - the total area in which the phrases can be placed.

### Key signatures

The key signatures in which the phrase will be generated.

### Options:

[Rhythms](#)

[Auto answer](#)

[Show first tone](#)

[Show Key signature](#)

[Play tone on click](#)

[Play tonic](#)

[Lock answerinput](#) (only in EarMaster School)

[Melody dictate](#)



## Setup Rhythms

keywords: Setup; Exercise setup; Rhythm setup

The rhythms are generated by EarMaster using an intelligent algorithm according to the selections described below.

Click to include:

- specific note values and triplets in the rhythm.
- rests and dotted notes. The note values are the same as selected above.
- tied notes.

Choose:

- the time signature of the rhythm.
- the number of bars in a row.
- the speed of the rhythm (beats per minute).

Corrections (only in Rhythm correction)

Show rhythm second time (only in Rhythm imitation)

Evaluation

Choose how precise the rhythm has to be clapped. On Kind a general idea of the rhythm is enough while on Severe you must be very precise and have a sharp rhythmic 'feeling'.

Rhythm imitation

Rhythm reading

Rhythm correction

**Corrections** - specify the maximum number of changes to be made in each question.

**Show rhythm second time** - show the rhythm automatically when you have finished clapping. This will remain visible to support you if you make a second attempt.



In the note based exercises (Interval, chords, melody, etc) you have several options for entering the answer. They are found in the "Answer input" menu, where you can show and hide each of them:

**Notesheet** - to enter a tone, press and hold the left mouse button. Move the mouse Up/Down to changes the tone, Right/Left to sharpen (#) or flatten (b) the tone. Click the right mouse button to cycle through different note values and the rubber (tie).

**Name** - Click once on the button with the name of the played tones (interval, chord, etc). Left click to select and play the tones without giving it as the answer to EarMaster. Right click to select the tones and give this as your answer.

**Piano** - Left click to select tones, right click to deselect tones. You can change the instrument sound and volume in the green display.

**Guitar** - Left click to select tones, right click to deselect tones.

Use the microphone to sing tones or clap rhythms. In the "Answer input" menu you can start and stop the microphone recording.

You can select tones and play rhythms on your external MIDI instrument. You can also assign special tones to special functions (like play C2 to press the New question button), to remote control EarMaster.

Here you can edit your name, used when printing results. In EarMaster School you can also change your username, password and private directory.

## Delete results

With this function you can delete old results for all exercises permanently. You cannot undo deleted results, so you might want to save a backup before doing it. Use the import/export function in the "File" menu, to export results to a diskette or a directory on the hard disk.

## The options menu

The available options in the “Options” menu depends on the active exercise.

**MIDI all notes off** - send an All notes off controller message to the selected MIDI out device.

**MIDI reset controllers** - send an All Controllers Off message to the selected MIDI out device. This message set all controllers (like Hold pedal, Mod wheel, Effects, etc) to their default state.

**MIDI remote** - Activate the MIDI in remote control of the exercises. Each button is assigned to a MIDI tone as specified in the Program settings.

**Automatic new question** - If checked you will automatically get a new question when you have answered a question. In the Program settings, you can set the delay in seconds and other options.

**Show metronome** - Activate the visual metronome.

**Play metronome** - Activate the metronome sound.

**Rhythm with metronome** - enable metronome sound while a rhythm is played. This does not influence the metronome sound in the lead in count and while answering the rhythm.

**Note identification** - Specify how EarMaster should interpret your answer. *Absolute*: You must enter the tones exactly as they were played, *Any octave*: You must enter the same tones, but you may transpose them to any octave, *Relative*: You may transpose your answer freely. (e.g. if the question was the perfect fourth interval C-F, you may enter the tones D-G as the correct answer).

**Show keyname** - If checked, Earmaster will show the name of the key in the note sheet. This option is only available if the “Show key signature” option is enabled in the exercise setup.

Specify on which MIDI channel (1..16) to send the tones for this sound profile. Channel 10 is the rhythm channel.

Specify which instrument sound to use in the exercises. If MIDI channel 10 is chosen in the rhythm profiles, this option is disabled. The program change event will be sent each time you choose another exercise. This setting can also be set by a MIDI instrument: place the cursor in this field and choose a sound on your MIDI instrument.



Specify the attack (volume) for this sound. To change the general volume go to the Devices tab.

Specify which tone or rhythm sound to be played.  
This setting can also be set by a MIDI instrument if you place the cursor in this field.

If checked, EarMaster will transpose all guitar sounds one octave up to avoid muddy tones.

Specify which MIDI input device driver to use.

Specify which MIDI output device driver to use.

Notice: some wave table sound card drivers delay the sound, which requires you to synchronize before you can use the rhythm exercises.

Specify the Windows MIDI volume for this device.

The delay in  $1/1000$  seconds

Specify your language. The box lists all “.LAN” files in the \Language subdirectory.



Specify the font name, style and size to be used in EarMaster.

Specify the background color for the exercise windows.

Specify how rhythms should be transcribed. In Fixed space, all note values will be spaced equally. This is the most compact setting, useful for small screen resolutions. With Time proportional notation, all bars have the same width and each note takes as much space as its note value specifies.

If checked, EarMaster will automatically press the “New question” button when you have answered a question.

Specify the delay in seconds from you have answered a question until EarMaster set a new question

If checked, EarMaster will not set a new question if your answer was wrong. This will give you time to find out what you did wrong.

In rhythm reading and rhythm imitation you can make EarMaster repeat the question if the result is below the specified level. This setting is also used by EarMaster when giving visual and sound feedback in rhythm exercises, e.g. if your result is below this level it will play the “wrong” sound effect.

Press this button to show all the light bulbs with tips again.



Adjust the microphone sensitivity for exercises using tone (pitch) input. This is not the same as the Windows microphone volume setting.

Adjust the microphone sensitivity for exercises using rhythm (timing) input. This is not the same as the Windows microphone volume setting.

If checked, the frequency analyses will be done with double precision. This will require much more processor power.  
If not checked, EarMaster can not separate tones below 110 Hz.

If checked, EarMaster will play a sound when you have answered a question.

Choose a wave file to be played when answers are correct. The box contains all \*.wav files in the \Media subdirectory.

Choose a wave file to be played when answers are wrong. The box contains all \*.wav files in the \Media subdirectory.

Specify the Windows wave out volume i.e. the volume of the sound effects.

If checked, you can press the exercise control buttons (like New question, repeat question, etc) from your MIDI instrument. Each button is assigned to a specific tone.



Assign a tone to a control function. When this tone is pressed on your MIDI instrument, the associated button will be pressed.

If checked, pressing the damper pedal will have the same function as pressing the <ENTER> or <RETURN> key on the keyboard. (for non-piano MIDI users: the damper/sustain pedal is controller 64)



## Results

In the Results window you can view and compare all results from the currently selected exercise area.

With the top buttons you can turn on and off the elements you want to view:

- Date and time where the exercise was started.
- Duration - the total time this exercise has been active (visible)
- Answer time - the total time you spend on thinking what the answer was and answering the question. This is the total of all the time you spend in thinking about and entering your answers to each question.
- Level name - the name of the exercise file or the tutor-step.
- Details - specific results for each chord/interval.

Notice: results are only saved if you have answered at least 5 questions. Every time results are reset, you have the option to save the results or not to save the results.

In the status panel at the bottom, you can view summation statistics for a time period. You can change the time period in the "View" - "Result summations" menu.

The "Average answer time" is the average for each question - so a few seconds should be enough...



## Load Setup

Load an exercise setup from the disk.

The list contains the names of every file in the EarMaster directory with the extension \*.EAR.

In a network both the files from the common file directory and from the users private directory are listed. The latter are marked with '\*'.

Each file contains a setup of all the exercises.

Press '*Browse...*' to load from anywhere on the disk.



## **Save setup**

Save the exercise setups in a file on the disk.

The default directory is the users private directory if specified, else it is the EarMaster directory.

Each file contains a setup of all the exercises.

Full name of the user. This will be used when viewing or printing results.

Username. The name used each time you log into EarMaster. If you have a username for logging into Windows, you should use the same user name here.

You don't need to type a password unless you want extra protection of your settings and results.



Define the access level of the user:

**Students** can use exercises and tutors.

**Teachers** can view and print results from all users. They can also define new tutors.

**Administrators** can maintain the system-settings and databases.

Specify if the user is allowed to choose tutors and tutorsteps. If not checked, the teacher has to choose for the student which tutor (s)he should follow and which steps to begin with.

Specify if the user is allowed to make his own setup of the exercises and save it to disk.

Specify if the user is allowed to define new chords/intervals. This is important since all users shares the same user-defined chords/intervals. If a user deletes a defined chord, it is deleted for all users.

Specify if the user is allowed to change MIDI settings, color and language. The settings made by a user will not affect other users.

Connect the user to a class.

Disconnects the user from the class.

A users private directory is used as the default directory when loading and saving exercise setups. If no directory is specified, the start-up directory is used.



The common directory is used as the default directory when loading tutors and exercise setups. If no directory is specified, the start-up directory is used.

Press this button to save the current setting of MIDI, language, color and window size as default values. Those values will be used every time a new user is added to the system or a user logs in as a guest.

Location of the EarMaster data files which contains user profiles and results. Several computers can share the same data files on a network. This setting is saved locally in the registration database on this computer. If you move the data files you have to change this setting on each computer using the files.

To improve performance, reduce network traffic and to save disk space you can delete old results from the database. The results are permanently deleted and cannot be undeleted. You might want to backup result data files before performing this operations (all files in ...Data\Result\ ).

Checking this option allows users to login as a guest, with limited access rights.

If checked, users can add themselves as an EarMaster user, however only with Student access.  
If not checked only guests and users added by a teacher can enter EarMaster.

If checked, EarMaster will not ask the user for a username when you start the program. Instead the username will be obtained from Windows.

## **Class maintenance**

(Only available for teachers in EarMaster School)

A class enables you to group a number of users together. It is needed when you want to view or print user results from a selected subset of all users.

To create a new class:

Choose "Class maintenance..." from the "File" menu. Press the "New" button. Give the class a name, attach a teacher and eventually a tutor to it. Press "Add/Remove..." to connect students to the class.

Notice: deleting a class will not delete the users from the system. It will only disconnect the users from the class.

Classes are used with the reports function and the [Users overview](#) function.



## Import and export of user results

With the import/export function in the "File" menu you can import and export assignments (tutor) and results to and from a diskette. Then you can export your results and import them on another computer, e.g. if your teacher wants to view the result of your homework.

The typical use of this function would be when the school has EarMaster School 4 installed and students also have any edition of EarMaster 4 installed at home:

1. A teacher creates an exercise course or some assignments and puts them in a tutor. (only in EarMaster School)
2. The tutor is assigned to a class or individual users. (only in EarMaster School)
3. Each user exports the settings to a diskette before he/she goes home from school.
4. The student imports the exercise at home.
5. Before going to the next music class, the student exports the result to a diskette and imports it at the school.
6. The teacher can view, compare and print the homework results of his class. (only in EarMaster School)

The destination directory where the user data should be exported.

The user whose user-data are exported.

The source directory where the user data resides.

The user whose results and settings will be updated with the imported data.

View and print results from all users with Student access.

View and print results from all users.

View and print results from all users connected to the specified class.



View and print results from the specified exercises.

View and print results from a number of days back in time until now. Enter any number.

View and print results from the specified user.

## Tutor

The EarMaster tutor enables you to follow an exercise course made by a teacher. EarMaster keeps track of your results and adjust the difficulty of the exercises as you progress.

To start the tutor, choose "Tutor" from the "File" menu.

When you have answered a number of questions, the tutor will evaluate your result and suggest either to advance to the next step, repeat the step once more or to go back to the previous step.

You can jump among all 10 exercises in EarMaster and come back to the tutor where you left off.

You can stop the tutor anytime by choosing "Tutor" from the "File" menu once again.

Notice: You cannot go to the exercise setup while a tutor is running. To edit a tutor or create a new one, you need the tutor editor which is only included in "EarMaster School" and the tutor editor is only available if you have teacher or administrator rights.

Additional information:

[Interval comparison](#)

[Interval identification](#)

[Chord identification](#)

[Chord inversion identification](#)[Chord progression](#)

[Scale identification](#)

[Rhythm reading](#)

[Rhythm imitation](#)

[Rhythm correction](#)

[Melody dictate](#)

## Tutor editor

(Only available for teachers in EarMaster School)

With this function you can setup a complete ear training course once, and for all. It can easily be distributed to other computers.

A tutor is actually a set of exercise setups. To define a tutor, you simply make a list of exercise setups, add titles and descriptions to each of them and define how well a student must perform to advance to the next exercise setup (step) in the list.

In the step-list you see all defined steps in the current exercise. The steps are defined separately for each exercise.

### **Add steps:**

Right click in the step-list to add and remove steps, and to edit properties of the selected step. You can find additional help in the corresponding windows.

You can easily verify the progression of the steps: Click once on each step and view its settings in the exercise setup window.

### **Edit step:**

To change the texts and percentage rate, you can either right click on the step and choose properties from the menu or simply double-click the step.

The exercise setup for the step can also be edited: click once on the step to update the exercise setup window with the setup from this step. When you have made the needed corrections in the exercise setup window, right-click the step in the step list and choose "Update from setup window". This will save the setup to the step.

### **Insert tutor:**

To insert steps from another tutor, find the "Insert tutor" function in the "File" menu. This will append all the steps from the selected tutor to the end of the step list in the current tutor. The steps are only added to the step list in the selected exercise, the step lists in the other exercises are not affected.

When the steps have been added, you can drag them with the mouse to the positions where you want them.

### **Userdefined chords:**

If you define new chords while you are in tutor edit mode, they are only defined for this specific tutor. They are loaded and saved together with this tutor.

When you exit the tutor edit mode, EarMaster loads the set of chords that was available before you entered the tutor edit mode.

This means you can define new chords for a specific tutor without affecting the normal set of user defined chords.

Give the tutor a descriptive title.

Here you can write a general description of the exercise course (tutor). The description can be viewed by the user when loading a tutor. The maximum length is 255 characters.

The name of the author should be entered here.



## **Load tutor**

Choose a tutor to work with.

Press "Details" to view the name of the author and the authors description of this tutor.

Give the step a descriptive title that informs the user what will be exercised.

Choose how many percent of the questions have to be correct for the user to go on to the next step in the tutor.

Choose the lower limit of an acceptable result. If the user gets a result lower than this, (s)he will be suggested to go back to the preceding step.

Notes to the student about this step and how to use it. The maximum length is 255 characters.

The exercise setup is copied from the current settings in the EarMaster main window. This is useful when you want to create a new step that is based on the preceding step but with a few changes.

The exercise setup is copied from the specified file. Though an exercise setup file (.ear) contains settings for all exercises in the same file, only settings related to the current exercise are copied.

Choose whether this new step should be inserted before or after the selected step in the step-list.



The number of questions to answer on this step. When the user has answered the specified number of questions, the results are saved and the next step is chosen based on the specified upgrade/downgrade limits.

The exercise setup is copied from the selected step in the step-list. It can be modified afterwards: select the step, make the changes in the EarMaster main window, right-click the step in the step-list and choose "Update from exercise setup".

## Users overview

With the user overview window you can view all users or a group of users and a summary of their settings and results.

The result summary is calculated for the selected exercise. You can change the summary time period in the menu "View" - "Result summations".

To refresh and recalculate all user results, choose "Refresh" in the "View" menu.

Right-click in the user list for a menu to add and remove users, and to set properties for a user.

This can also be done from the main-menu "Users". In the main-menu "View" you can choose the "Users" menu to view a group of users.

Users are grouped together by putting them in a Class.

To view detailed results for a single user, go to the "Results" section for the exercise.

To view and print selected detailed results for several users, press the printer button to invoke the report generator.

Choose the tutor the user should work with.

Disconnect the user from the tutor. If the user does not have the tutor change permission, no tutor can be used until the teacher chooses one with the Load tutor function.

Choose the beginning step in each exercise.

## Getting started with EarMaster

EarMaster offers 10 ear training exercise areas. They are listed in the "Exercises" menu. Each exercise consists of a number of windows which are chosen from the submenu to the exercise menu.

The "Exercise" window is where you do the exercises.

In the "Exercise setup" window you can make your own settings for the exercise. These settings can be saved in your own .ear level files.

In the "Results" window you can view and compare current results with all previous results.

In the "User overview" (which is only visible to teachers in the School version), you get a summary of results for several users.

Click a link below for further information about using a specific exercise:

[Interval comparison](#)

[Interval identification](#)

[Chord identification](#)

[Chord inversion identification](#)

[Chord progression](#)

[Scale identification](#)

[Rhythm reading](#)

[Rhythm imitation](#)

[Rhythm correction](#)

[Melody dictate](#)

## Keyboard shortcuts in EarMaster

Many features in EarMaster can be controlled from the keyboard. You might want to print this page to have it beside your keyboard.

Ctrl + 1	<u>Interval comparison</u>
Ctrl + 2	<u>Interval identification</u>
Ctrl + 3	<u>Chord identification</u>
Ctrl + 4	<u>Chord inversion identification</u>
Ctrl + 5	<u>Chord progression</u>
Ctrl + 6	<u>Scale identification</u>
Ctrl + 7	<u>Rhythm reading</u>
Ctrl + 8	<u>Rhythm imitation</u>
Ctrl + 9	<u>Rhythm correction</u>
Ctrl + 0	<u>Melody dictate</u>
Shift + 1	Exercise
Shift + 2	Exercise setup
Shift + 3	Results
Shift + 4	User overview (Only teachers in EarMaster School)
F1	Help
Ctrl + F1	Context Help
F2	Load exercise setup
F3	Save exercise setup
F4	Tutor
Shift + F4	Tutor editor (Only teachers in EarMaster School)
F5	New questions
F6	Play/Repeat question
F7-F8	Depends on specific exercise
F9	Stop
Shift + F9	MIDI all notes off
Ctrl + F9	MIDI reset controllers
Ctrl + F12	MIDI remote control
Ctrl + M	metronome sound
F10	Print results
F11	Class maintenance (Only teachers in EarMaster School)
Shift + F2	Auto new question
Shift + F5	Answer by Notesheet
Shift + F6	Answer by name
Shift + F7	Answer by Piano
Shift + F8	Answer by Guitar
Shift + F11	Enable Microphone input
Shift + F12	Enable MIDI in
On the staff, sharps and flats can be added from the keyboard while holding the left mouse button:	
z	bb (double flat)
x	b (flat)
c	(natural sign)
v	# (sharp)
b	x (double sharp)
Ctrl + Delete	Restart current exercise



## Using the microphone

EarMaster uses advanced Wave-to-MIDI technology to analyze the input from the Microphone.

### **Pitch input**

Wave-to-MIDI can listen to your singing and work out which note you have sung. However recognizing the correct pitch depends very much on the overtones of your voice or instrument. Sometimes an overtone is stronger than the fundamental tone and then it will be the overtone EarMaster recognizes.

A Pentium is required to use the microphone pitch recognition. If you haven't enough processor power you may not get reliable results.

### **Rhythm input**

In the rhythm reading and rhythm imitation exercises you can clap the rhythm in the way you are used to and prefer: with your hands or with a drum.

As background noise, microphone sensitivity and sound card amplification can vary a lot, you might need to adjust the Rhythm input sensitivity in the program settings to get optimum results on your system.

### **Setting up the Microphone in the Windows mixer**

In the Windows mixer, the microphone device needs to be selected for recording. Load the mixer by double clicking on the speaker icon in the Windows task bar. Change to recording properties by selecting Properties from the Options menu, and then selecting "Adjust volume for: recording." The Microphone device should be checked (have a tick next to it), in the list of volume controls. Then press OK. The "Select" box for the microphone device must be checked; if it is not, click on "Select" to check it.

## Theory on intervals

Intervals are the most fundamental part of ear training. All harmonies or melodies can be considered as a collection of intervals. As a beginner you should therefore begin with Intervals and later continue with, for example, Melody dictate to identify a sequence of intervals, or Chord identification to identify harmonies with more than two tones.

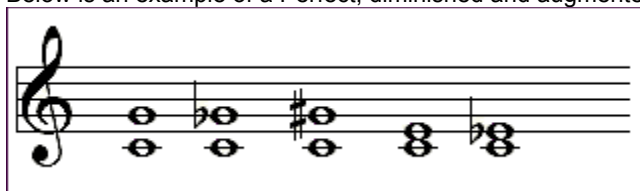
An interval is the distance in pitch between two tones. It is labeled by its numerical value and its quality. The numerical value indicates the number of tones of the diatonic scale it includes.



The quality can be Perfect, Diminished, Augmented, Major, or Minor.

Unison, fourth, fifth and octave are called perfect intervals. Each of them can be diminished (one chromatic tone smaller) or augmented (one chromatic tone larger).

The rest of the intervals within an octave are: second, third, sixth and seventh. Each of them can be major or minor. Below is an example of a Perfect, diminished and augmented fifth and a major and minor third.



In EarMaster you can hear the intervals in the Interval identification exercise when you click on the button with interval name on it. Notice, "by name" must be enabled in the "Answer input" menu to do this.

You can also hear the intervals when you right click on them in the exercise setup.

### Recognizing intervals

There are two common ways of recognizing intervals:

1. Use the opening of a well known song. Find songs that begins with each of the Intervals. When you hear the interval you will make the connection between the interval and the song. See [examples of template melodies](#). This method is however criticized because it doesn't consider the function of the interval within the key i.e. the perfect fourth from C to F has a different function (sound) in the C major key and the F major key and therefore this method will be difficult to use when doing sight reading.
2. Sing up and down a scale to find the matching interval. This method is closely related to the solmization system (using the syllables do, re, mi, fa, sol, la, ti, do) which is often used when learning sight reading. EarMaster shows the solmization syllables in brackets when entering notes in Interval identification and Melody dictate.

Related exercises in Earmaster:

[Interval comparison](#)

[Interval identification](#)

## Template melodies for intervals.

These are examples of songs you can use to recognize specific intervals

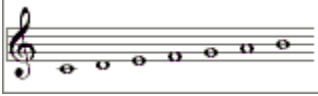
Minor 2nd	Isn't she lovely (Stevie Wonder)
Major 2nd	Happy birthday, Strangers in the night
Minor 3rd	Georgia on my mind
Major 3rd	Morning has broken
Perfect 4th	Amazing graze, Love me tender
Tritone	Maria (West side story)
Perfect 5th	Wise men say (Can't help falling in love)
Minor 6th	When Israel Was In Egypt's Land
Major 6th	NBC theme
Minor 7th	Somewhere (West side story)
Major 7th	Bali Hai (South Pacific) 3rd note
Octave	Somewhere over the Rainbow

## Theory on scales and modes

“Scale” means ladder in Latin. A scale is the tonal basis of music i.e. a set of tones from which you build melodies and harmonies. The tones in the list are arranged in order of their pitch. Since this tonal basis varies in different periods and countries there are a large number of scales.

The major scale, minor scale and the church modes are all based on the diatonic scale. They consist of the same tones but the center tone (tonic) is different.

The C major scale look like this:



The dorian church mode contains the same tones but the root tone is D:



In the same way the Phrygian church mode has the root tone E. Lydian has the root tone F, Mixolydian has the root tone G, Natural minor (Aeolian) has the root tone A and Locrian has the root tone B.

### Recognizing scales

A scale is a sequence of small intervals - usually tones (whole step) and semi-tones (half step). To identify a scale you need to know the unique sequence for this scale.

Scales based on the diatonic scale will always consist of 5 tones and 2 semi-tones. Therefore recognizing these scales can be simplified to identify the position of the two semi-tones.

In EarMaster you can hear the scales in the Scale identification exercise when you click on the button with the scale name on it. Notice, “by name” must be enabled in the “Answer input” menu to do this.

You can also hear the scales when you right click on them in the exercise setup.

Related exercise in Earmaster:

[Scale identification](#)

## Theory on chords

A chord is the simultaneous sounding of three or more tones - usually built on superposed thirds. Chords are defined by their root note, their quality (major, minor, augmented, 7, etc) and eventually by their inversion.

### Triads

A chord of three notes consisting of a root and the third and fifth above it.

Major - has a major third and a perfect fifth

Minor - has a minor third and a perfect fifth

Diminished - has a minor third and a diminished fifth

Augmented - has a major third and an augmented fifth

The first two are called consonant and the last two dissonant chords.

Below the C major, C minor, C diminished and C augmented are transcribed:



### Seventh chords

These chords are triads with still another diatonic third superposed.

(Dominant) 7 - is a major triad with a minor 7th added.

Minor 7 - is a minor triad with a minor 7th added.

Dim 7 - is a diminished triad with a diminished 7th added.

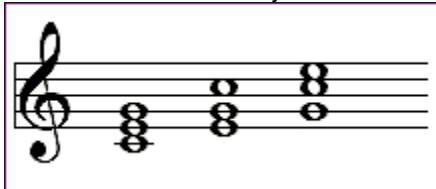
Half dim - is a diminished triad with a minor 7th added.

There are more triad+7th combinations than mentioned here. You can find them in the chord definition table in the exercise setup of the Chord identification exercise.

### Inversions

The original position of a chord with the root note at the bottom is called the root position. When the third of the chord (e.g. E in a C major triad) is at the bottom it is said to be in first inversion. When the fifth of the chord (G in a C major triad) is at the bottom it is said to be in second inversion.

Below is shown the C major chord in root position, 1. inversion and 2. inversion:

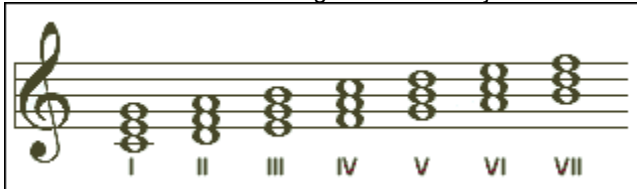


### Chord progressions

A series of chords played in a row. When identifying chords within a progression, the main task is to find its harmonic function within the key i.e. compare the chord to the tonic which is played before the progression. The harmonic functions are written with the roman numerals I, II, III, IV, etc, which denotes the degree within the scale.

Each of the seven degrees of the major and minor scale can serve as the root of a triad. The triads on the "tonal" degrees of the scale, I, IV and V, are the most important for establishing the tonality of a piece.

Below is shown the seven degrees of a C major scale:



I (C major), II (d minor), III (e minor), IV (F major), V (G major), VI (a minor), VII (b dim)

In minor keys, EarMaster always denotes the 3rd, 6th and 7th step as bIII, bVI and bVII to avoid confusion because

the steps are different. E.g. III is a *major 3rd* above the root in a major key while in a minor key it is a *minor 3rd* above the root and therefore it is denoted as bIII.

To identify chord progressions it is a great help to listen to the bass tone which is usually the root of the chord. Notice that several chord progressions can have the same root movement but different quality of the chords. You can disable the root tone in EarMaster to make it harder for you to recognize it.

Related exercises in Earmaster:

[Chord identification](#)

[Chord inversion identification](#)

[Chord progression](#)

The diatonic scale is the natural scale, consisting of five whole tones and two semitones, as it is produced on the white keys of the keyboard. There is a corresponding scale in each key. The major scale is, for instance, diatonic.









