RECORDING MIDI WITH MIXCRAFT

TUTORIAL

This tutorial covers the use of MIDI with Mixcraft. Educators will learn how to setup Mixcraft and MIDI hardware for recording, a workflow for recording MIDI data, and finally, techniques for editing MIDI data.

SETTING UP FOR MIDI RECORDING:

There are three methods by which students can use MIDI to record or program a music performance with Mixcraft: 1) MIDI hardware, 2) Musical Typing, and 3) Drawing MIDI notes:

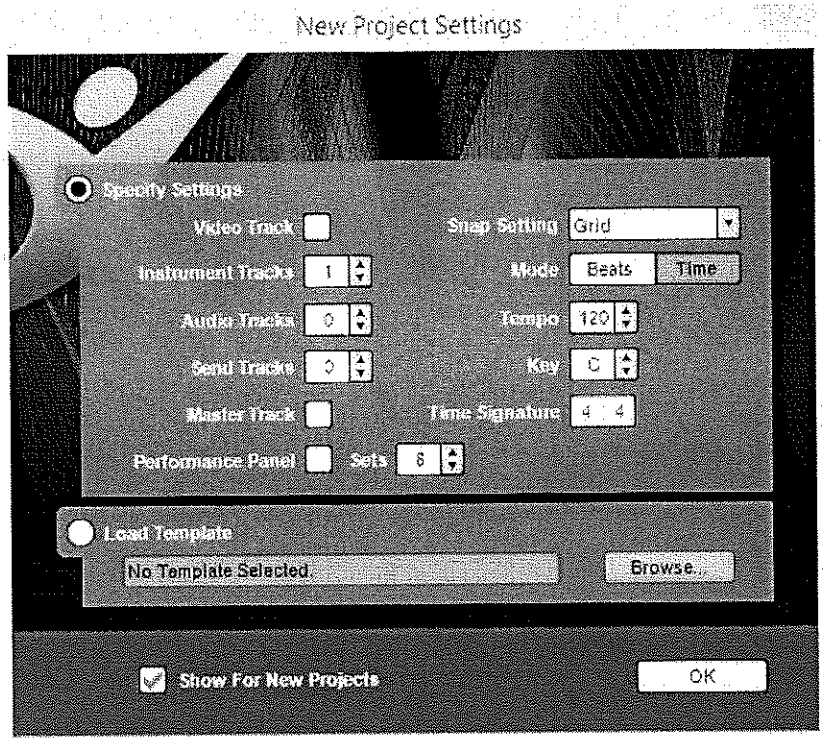
- MIDI Hardware: MIDI controllers, such as a MIDI keyboard, can be used with Mixcraft to record a music performance in MIDI format. External MIDI controllers are ideal for student projects. They work efficiently with Mixcraft and offer a playability that is not possible with either music typing or MIDI programming.
- Musical Typing: Mixcraft has a built-in software keyboard called Musical Typing. This piece of software transforms the computer keyboard into a piano keyboard. Though a bit clunky to play, it makes a great substitution for an external hardware MIDI controller.
- Drawing MIDI Notes: MIDI data can also be manually programmed. Users can use the pencil tool and draw MIDI notes onto the Piano Roll. Programming is highly useful when composing with virtual drum instruments.

Before recording, it is important to properly setup and configure all audio hardware and Mixcraft. External MIDI controllers can be hooked directly through USB or firewire ports, while other external keyboards might require the use of MIDI in/out cables and an audio/computer interface. Referring to the documentation of the hardware will assist in proper setup:

1. To begin setting up, turn on monitors: Don't worry about creating a feedback loop when recording with MIDI *(unless of course there is an active microphone elsewhere in the recording area!)*. Use monitors or headphones to follow the level of the MIDI-controlled virtual instrument or listen to a MIDI performance in real time.
2. Next, connect the MIDI controller to the audio/computer interface or directly to the computer. Mixcraft will display a notification that it has detected a change in its MIDI configuration.

RECORDING MIDI: A WORK FLOW

1. To begin recording MIDI, open Mixcraft and use the New Project window to load a template with one virtual instrument track.



Once the New Project window has loaded, remove any audio or video tracks, and set the instrument-track field to one.

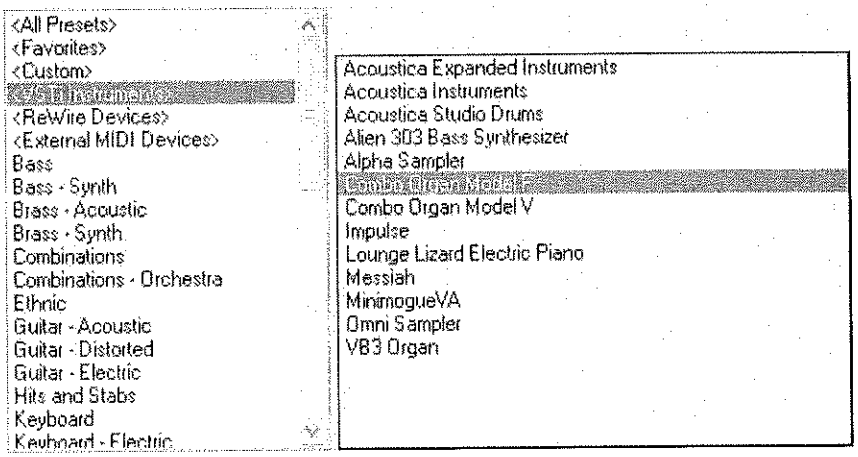
2. Select a virtual instrument by clicking the keyboard icon on the virtual instrument track.

This keyboard icon prompts the virtual instrument window.

For this tutorial, we will be using Mixcraft's Organ Model F Plugin. The Model F is a software emulation of a vintage organ instrument. Select the plugin by navigating the virtual instrument browser: **VSTI Instrument > Combo Organ Model F.**

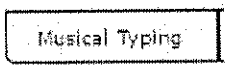
TIP:

To bring up the Organ's interface, click the edit button that appears once the Combo Organ Model F has loaded



Use this browser to locate any virtual instruments that are stored on the computer.

3. Next, enable musical typing by clicking the "musical typing" keyboard icon.



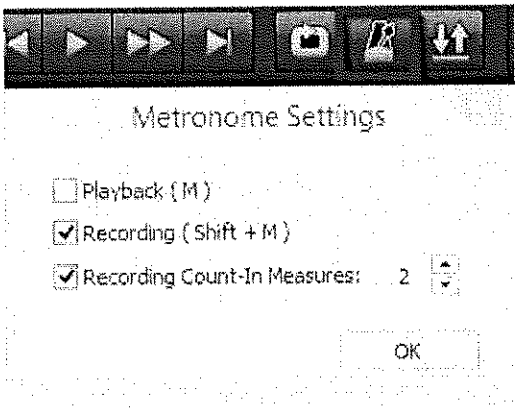
Clicking the music typing icon will launch Mixcraft's virtual piano keyboard.

Try playing a few notes on the virtual organ by pressing keys on the computer keyboard. During lesson plans if MIDI controllers are not available, students will be able to use the musical typing feature to record a performance with MIDI.

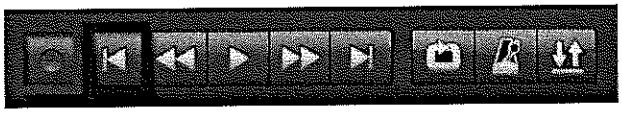
4. It is time to record! Educators should learn to record MIDI with a MIDI controller and with musical typing. Try recording using both methods:

   A) First, arm the virtual instrument track in the workspace by clicking "**arm.**" The downward arrow next to the arm button will enable users to select the source of an incoming MIDI signal. The default setting is generally fine, but intricate MIDI setups might require specifying a MIDI device. To check the configuration, play a few notes on a MIDI controller or on the musical typing interface: the volume meter should jump and the organ should play.

   B) Enable the metronome when recording with MIDI. First, click the metronome icon to bring up the metronome settings window. Choose both "**recording**" and "**recording count-in measures**" for metronome play. Click "OK."



   C) Before recording, rewind the cursor to the beginning of the timeline by selecting the rewind button *(outlined in blue)* on the master bar.



   D) Start recording by either selecting either the master record button *(outlined in red)* or by pressing the "R" key on the computer keyboard. The cursor will begin moving down the timeline and regions of the recorded MIDI will appear.

   E) Once the recording is completed, disarm the virtual instrument track and play back the performance from the beginning.

An alternative to "performing" with either a MIDI controller or with musical typing is to program *(write/compose)* a MIDI part directly from scratch. Programming offers greater control over MIDI parameters and can circumvent the human errors that arise during performance.

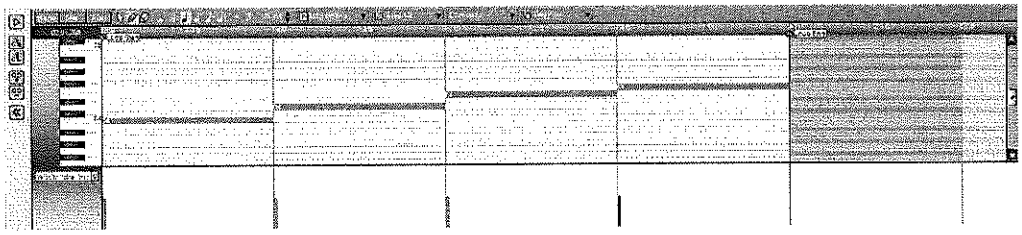
1. To start programming a MIDI part, create a new virtual instrument track by selecting one from the menu: **Track > Add Track > Add Virtual Instrument track.**

2. Double click on the Timeline area that corresponds to the new virtual instrument track. A blank MIDI region should appear and the Piano Roll window should expand from the bottom of the screen.

3. Selecting the pencil tool in the Piano Roll allows users to "draw" MIDI notes onto the Piano Roll. Notes drawn on the Piano Roll will then appear in the MIDI region on the Timeline.

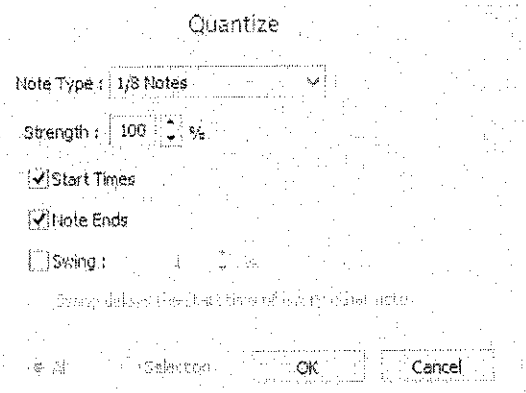
The Piano Roll Toolbar consists of the pointer arrow, the pencil tool, and the eraser tool.

4. Try drawing a basic melody using the notes C – D – E – F of the C Major Scale.



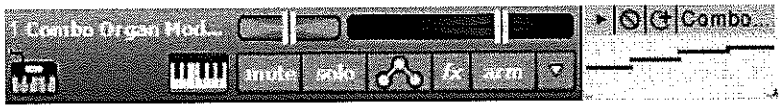
A sample melody in C Major programmed using Mixcraft's Pencil tool and the Piano Roll.

5. Next, quantize the MIDI notes by selecting the MIDI Editing menu on the Piano Roll. Quantizing time-locks each MIDI note onto the Piano Roll's grid. Quantizing can also be used to control the duration of each note. In this example, the notes were quantized to an "8th note" with the "note ends" option selected.

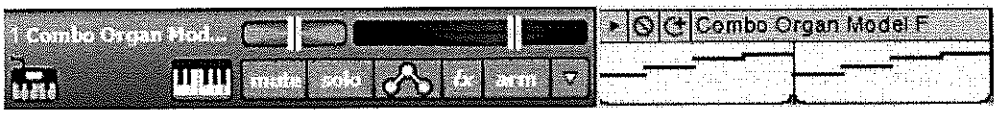


Sample quantize settings.

6. Next, create a loop out of the MIDI region on the timeline. You can trim the MIDI region to expand or shorten the area you'd like to loop by moving the pointer to the region's end. (A double-arrow cursor will appear.) Click and drag the region to trim or extend it, and then select the loop function (the circle with a plus icon) on the MIDI region.

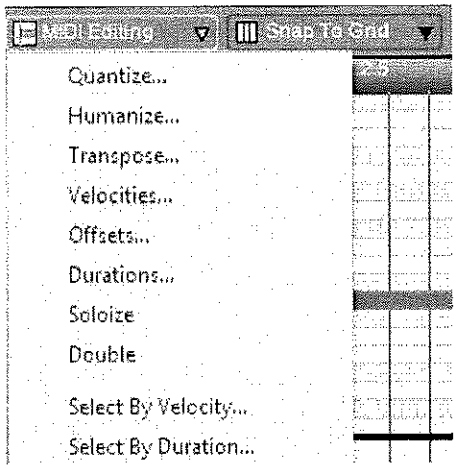


Our programmed MIDI melody now appears in the MIDI region on Mixcraft's Timeline.



Selecting the loop function adds a duplicate MIDI region of the melody.

EDITING MIDI WITH MIXCRAFT



Once a MIDI part is recorded or programmed, the MIDI data can be edited any number of times. With a few simple clicks composers can experiment with different instrumental arrangements, time-lock MIDI notes to certain rhythmic values on a grid, or transpose a part into different keys.

The MIDI Editing menu offers users a variety of methods to quickly organize and arrange MIDI notes.

QUANTIZING

A MIDI editor's best friend, quantizing, time-locks MIDI notes on the Piano Roll's grid to a specified note value. For instance, if a quantization is set to "8th notes," MIDI notes that are not locked to an 8th note will be moved to the nearest 8th note position on the Piano Roll's grid. Additionally, if there are discrepancies in note durations, quantizing can be used to equalize these durations. Quantizing is primarily used to fix errors in human performance, errors in MIDI programming, or errors that result from latency.

TIP:

Although quantizing is effective in fixing human errors, the changes can often result in parts feeling "mechanical" or "machine-like." To counter this, it may be advantageous to leave a few notes un-quantized or to use the "humanize" function under the MIDI Editing menu.

TRANSPOSING

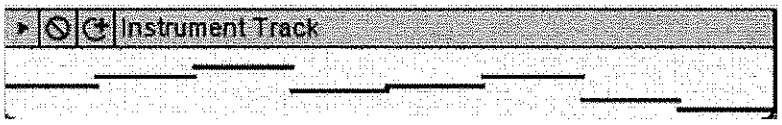
The transposing feature *(Top Menu/sound > MIDI editing > transpose)* is somewhat self-evident – it transposes a selected MIDI section to a new key. For students unfamiliar with key signatures, transposing is the act of preserving the relative relationships between the notes of a melody but assigning a new set of notes, or a "key," to the melody. This feature is useful when creating arrangements for large student ensembles, for experimenting with different note registers, or when writing parts for different instrument families.

EDITING MIDI REGIONS ON THE TIMELINE

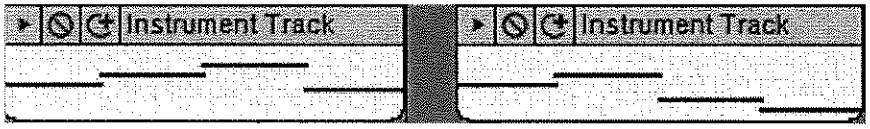
As discussed, users can employ a variety of techniques to edit MIDI in Mixcraft. With the Piano Roll an array of MIDI parameters can be meticulously controlled. MIDI parts can also be edited effectively on Mixcraft's Timeline where MIDI data is represented as MIDI regions virtually identical to audio regions. Like audio regions, they can be split, merged, looped, snapped to the Timeline, and will also display any programmed automation.

Splitting/Merging MIDI Regions

Splitting and merging MIDI regions is useful when crafting an arrangement on the Timeline. The split feature chops a MIDI region into separate units which can be arranged, deleted, or looped. The merge feature compiles separate regions into a single unit, creating a seamless block of MIDI information.



A complete MIDI region containing an example melody.



The MIDI region has now been split into two separate regions.

To split regions, right click on the region and select the "split" edit. To merge regions, highlight all the relevant MIDI regions and right click to find the "merge" feature. Users can also use a keyboard shortcut to split (Ctrl + T) or to merge (Ctrl + W).

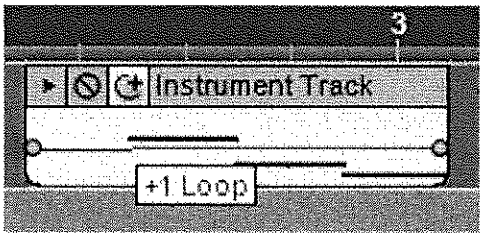
TIP:

Often, users may want to loop a particular section of a larger MIDI region. To loop a specific selection, the region needs to be trimmed and then set as its own loop. Once the region is trimmed, right click the region and select "set loop to crop." Now this region can be looped

LOOPING MIDI REGIONS

As shown in the MIDI tutorial above, MIDI regions can be looped on the Timeline to quickly flesh-out an arrangement and to build larger music structures. The next big hit may find its beginning in a MIDI performance composition that tentatively starts with a four bar melody that is repeated with the looping function.

To loop a region, select the ***"loop"*** icon *(a circle with a plus sign)* displayed in the upper left hand corner. A notification displaying "+ 1 Loop" will appear.



The loop icon, conveniently displayed on a MIDI region.

MIXING DOWN MIDI

When a MIDI production is completed, all of the virtual instrument tracks can bev mixed down to one master audio track. Mixcraft supports several audio file formats including .WAV and .MP3. Before mixing down, play the production through and monitor the master volume meter. Notice if the master volume peaks or hits the red zone. If necessary, dial back the master volume a few decibels. To mix down, select from the top menu File > Mix Down To... > and select the desired file format.