Music Makers

MIDI Music Composition

Explore music composition using MIDI. Learn about key melodies and harmonies (such as chords) which can be written in MIDI. Experiment with different instrument sounds and practice layering MIDI to build your own song. Import MIDI files of popular songs to see how music is composed.

Materials

- Device with internet connection

Safety Considerations

- Age appropriate supervision while on the internet
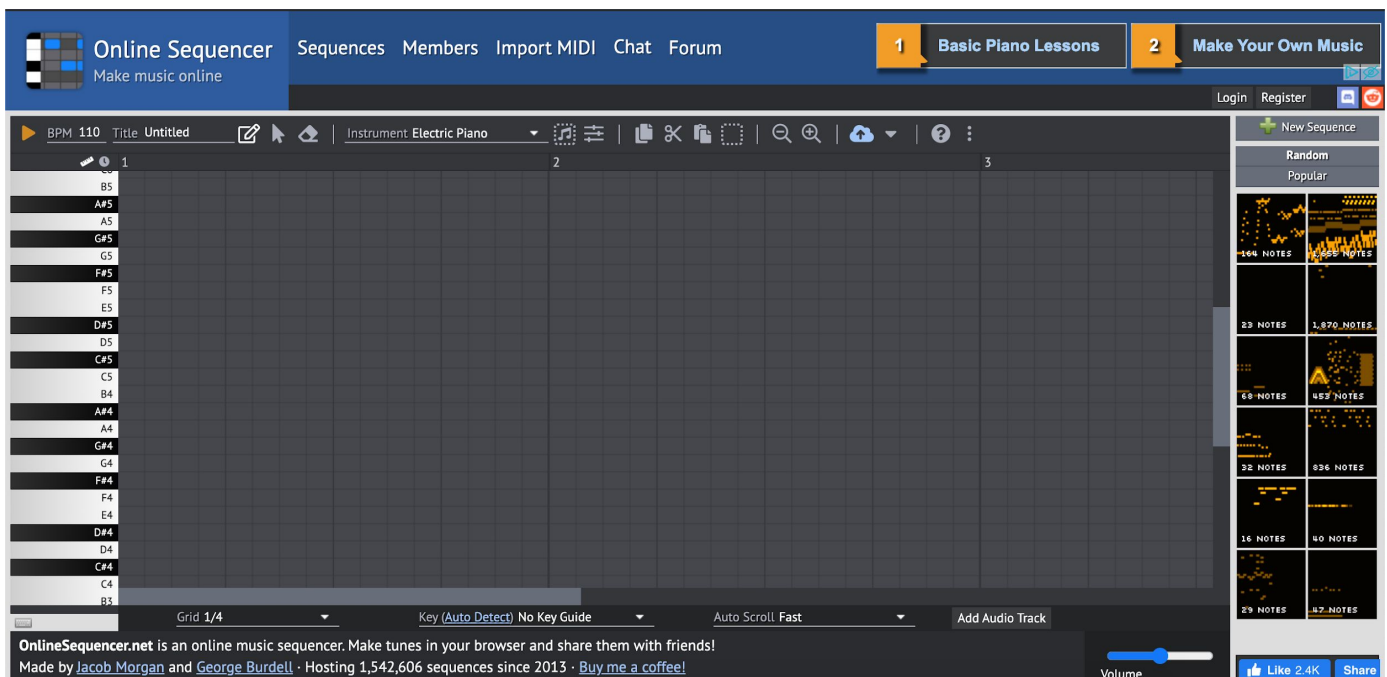
Keywords & Concepts

What is **MIDI**?

MIDI is an acronym for **Musical Instrument Digital Interface**. MIDI is the data used to keep track of all the notes in a song. MIDI doesn't have a sound, but we can use any digital instrument as a preset sound to play through MIDI. The notes can be saved as a MIDI file and imported back with new sounds. If you compose music in MIDI, you can always change the sound to instantly change the vibe of your song. Try copying the same MIDI and layering multiple instruments playing the same notes. This can create a symphony effect of multiple instruments playing the same notes in unison.

MIDI Music Composition

Online MIDI Sequencer

Steps:

1) Go to https://onlinesequencer.net/

2) Use your computer keyboard to play sounds! Hover your mouse over the sequencer playlist and use your keyboard as a piano.

3)

4) Left click to place notes. Right click to erase, or switch to the **Erase** tool and click.To listen, you can either middle click anywhere, click on the **Measure bar**, press space, or click **Play**

5) Drag the end of notes to make a longer note. Notes that sound longer or shorter are possible using Flute, Electric Guitar or any of the 8 bit instruments.
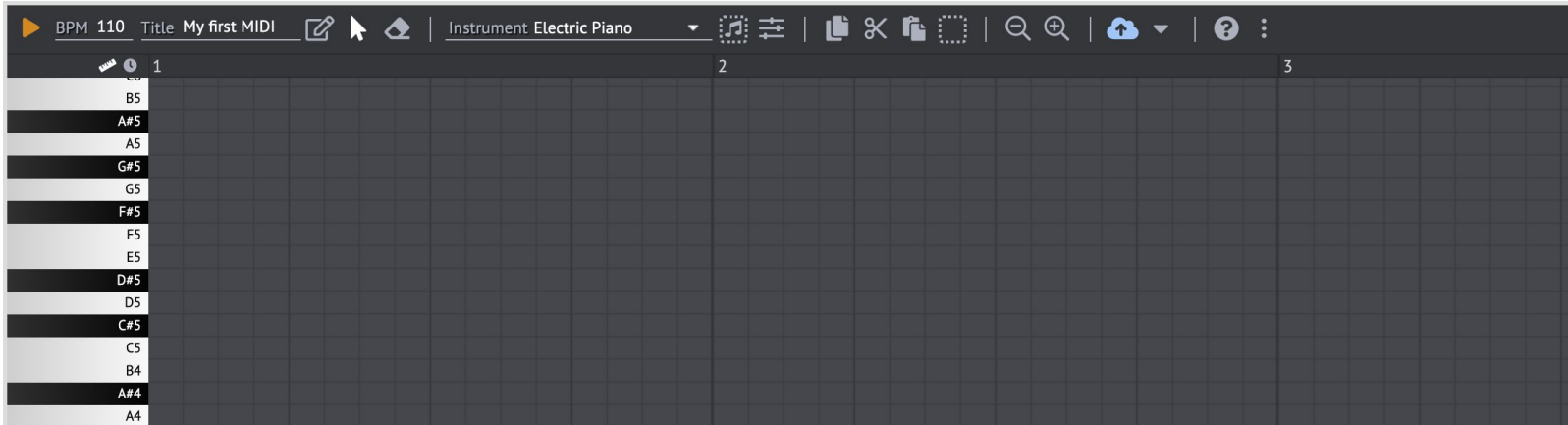
MIDI Music Composition

Using the online MIDI sequencer


Going left to right:

- **Play / Stop** button top left
- **BPM**: set the speed of your song/project
  - Below BPM, we can change the unit of our grid between Bars and Seconds
- **Title** your MIDI sequence
- 3 buttons:
  - Pencil = **Draw** notes
  - Pointer = **Select** notes
  - Eraser = **Erase** notes
- **Instrument** selection:
  - Click the drop down arrow to choose between preset sounds.
  - Includes a variety of pianos, percussion, guitars, electronic and orchestra sounds.
  - Add multiple instruments into your project by changing the instrument and drawing in new MIDI, or select existing notes and change the sound. Each instrument has a unique color in the MIDI sequencer.

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Using the online MIDI sequencer

- 2 buttons:
  - **Highlight** Music Note: selects all the notes of your current instrument. Useful for testing different instruments on a particular melody or instrument section of MIDI in your project.
  - **Show Options** (Mixer Icon): Opens a menu showing every instrument. Adjust the volume slider and Lock notes in place with the lock icon. The D and R buttons control a standard delay and reverb filter which can be activated on each individual instrument.
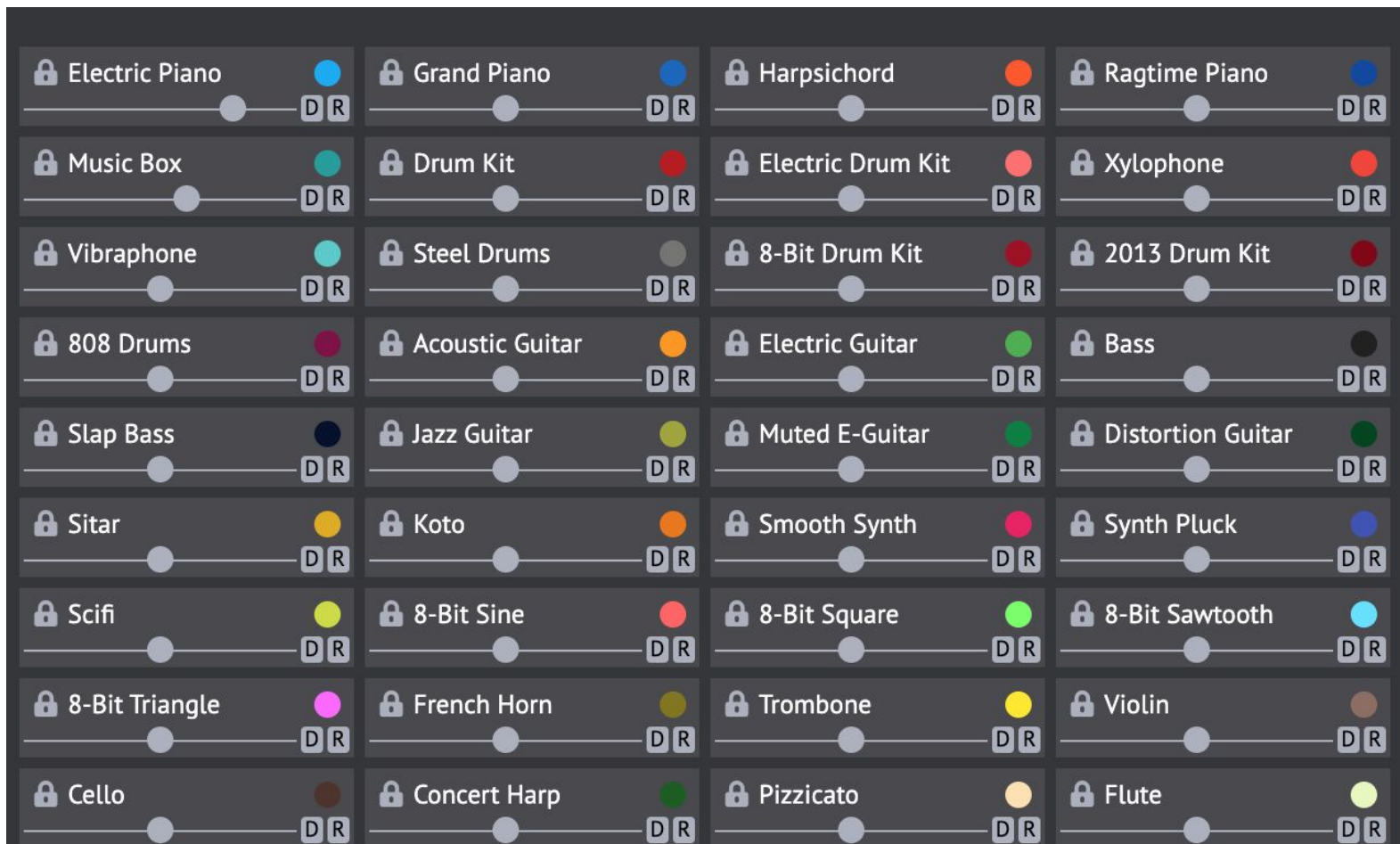
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Using the online MIDI sequencer

- 4 Buttons:
    - **Copy, Cut, Paste, Select all** Unlocked notes
- **Zoom In / Zoom Out**
- **Cloud icon** saves your sequence to a unique website URL, and exports MIDI txt and Midi files
- Question mark icon → **help** info
- 3 dots icon:
    - **Invert** flips the top to bottom. High notes become low notes and vice versa
    - **Minor ←→ Major** changes the key to the related major or minor of whichever key is selected.
    - **Fast Graphics** changes the look of notes in the sequencer, from rounded notes to rectangles

The bottom bar of the MIDI sequencer:
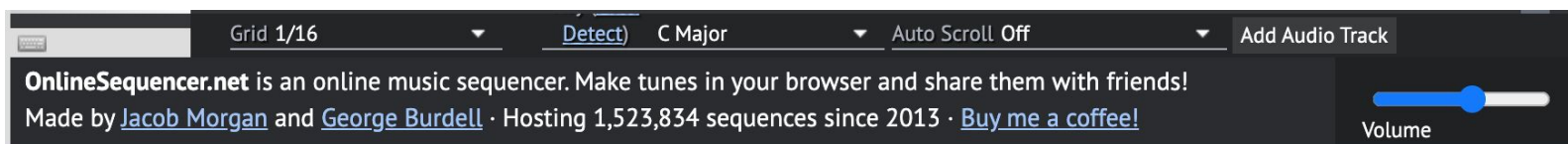
From Left to Right:
- **Grid** controls the preset size of notes in the sequencer. Ex: 1/16 divides the grid into 16th notes
- Set the **Key** of your MIDI. This highlights the sequencer with notes that all sound good together according to which scale your project will follow. Helpful for composing in key!
- **Auto scroll** can be toggled here to allow the sequencer to remain still while playing instead of automatically following the notes which are currently playing.
- **Add Audio Track** to import an MP3 or WAV waveform. This plays along with your MIDI, and can be used to recreate a song in MIDI by following along with the audio.
- **Volume** slider controls the master volume for your MIDI project
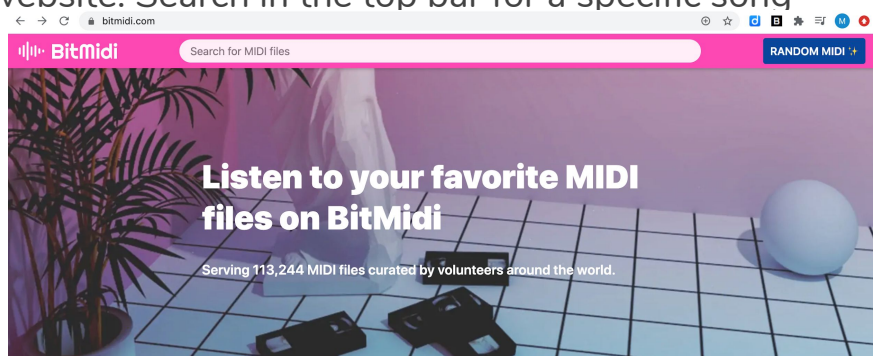
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Helpful Shortcuts

- Alt+1, Alt+2, Alt+3, Alt+4: Change grid
- Alt + mouse wheel, Ctrl + mouse wheel, Ctrl + +, Ctrl + -: Zoom
- Alt + 0, Ctrl + 0: Default zoom
- Alt + drag: Scroll
- Shift+click note: select or deselect
- Ctrl+click note: switch to instrument
- Ctrl+shift+click note: lock/unlock instrument

Compose your own MIDI song!

1) Free MIDI database - https://bitmidi.com/
   - Examples:
     - Bohemian Rhapsody - lots of instruments
       https://bitmidi.com/queen-bohemian-rhapsody-mid
     - Star wars theme -
       https://bitmidi.com/star-wars-theme-from-star-wars-mid

2) Explore the popular MIDI database for familiar MIDI sequences. Import MIDI into the online sequencer and select sounds for each MIDI pattern in the file. Adjust the octaves higher or lower for each instrument. Customize a popular song with your own sounds!

3) Below is the https://bitmidi.com/ website. Search in the top bar for a specific song MIDI, or click the top right corner for a random MIDI. Alternatively, scroll down for popular MIDIs. Click through the pages at the bottom of the site for more popular MIDIs.
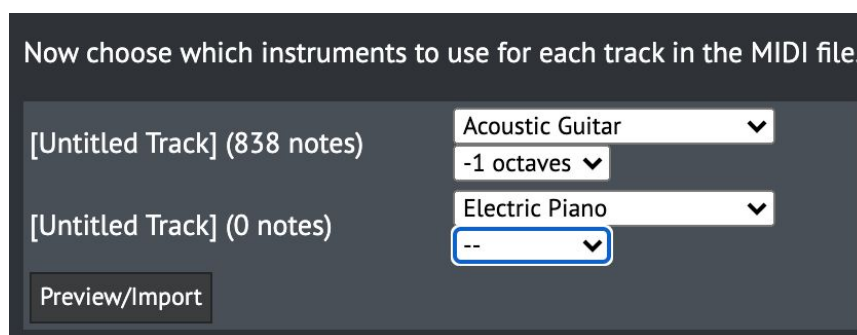
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4) Once you have selected a MIDI file, the webpage will look like this below. Click **"Download this MIDI file"** to download the .mid file. This is the file which can be imported into the online MIDI sequencer or a DAW.

Queen - Bohemian Rhapsody.mid

Uploaded 2 years ago • 105693 plays • 213787 page views

Queen - Bohemian Rhapsody.mid	▶

🎵 **Play this MIDI file**   💿 **Download this MIDI file**

Play Queen - Bohemian Rhapsody.mid   Download Queen - Bohemian Rhapsody.mid
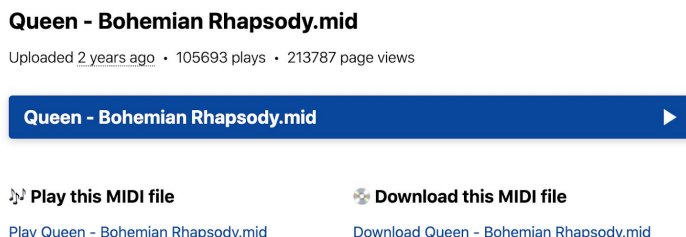
5) From the online sequencer https://onlinesequencer.net/, click **Import MIDI** at the top of the page. Here you can upload MIDI files which you have saved from the sequencer itself, or those which others have saved online in a MIDI database https://bitmidi.com/. Choose a MIDI file and click continue.
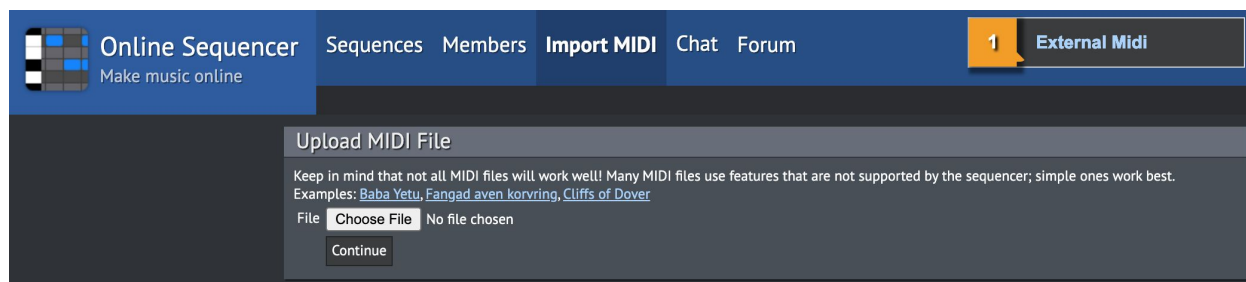
6) Now your MIDI will be imported, and a sound selection screen will appear. Choose which instruments will play your imported MIDI. Adjust the octave of each instrument. Click **Preview/Import** to generate your imported MIDI with your chosen sounds! The sound selection window will stay open while your MIDI plays, so you can change the sounds while listening and simply click **Preview/Import** to regenerate the MIDI with new sounds.

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7) Some MIDI projects will have multiple instruments. See how many notes are attached to each instrument and choose your sound selection!

8) Compose your own music using the MIDI sequencer. Export your own MIDI file. Open your MIDI files in a DAW - https://app.ampedstudio.com/

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Want to share your project or results with us?

Email or tag us @ScienceVenture
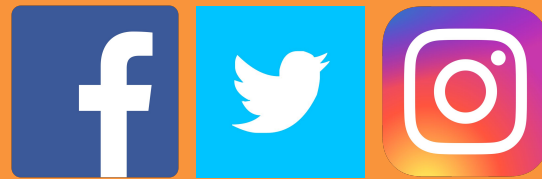
Have a question?

Reach us at svcamp@engr.uvic.ca