Elementary 9
MIDI Playground
Patrick Cooper

Grade Level/Class
Lower Elementary Grades
40 Minute Music Class

Overall Theme
The development of MIDI is important to electronic music history. Learning how to import and edit MIDI files helps people compose music and share it with others.

Essential Questions
1. How can people share music electronically?
2. How can people remix familiar music in creative ways?

National Standards
Create
MU:Cr1.1.K b With guidance, generate musical ideas (such as movements or motives).

Perform
MU:Pr4.2.K a With guidance, explore and demonstrate awareness of music contrasts (such as high/low, loud/soft, same/different) in a variety of music selected for performance.

Connect
MU:Cn10.1.Ka Demonstrate how interests, knowledge, and skills relate to personal choices and intent when creating, performing, and responding to music.

Student Learning Outcomes
By the end of this lesson, students will be able to:
1. Select a MIDI file of personal interest and import it into a DAW.
2. Remix the MIDI file in a variety of ways based on interpretive decisions:
    a. Edit the virtual instruments assigned to a track (timbre)
    b. Change the BPM (tempo)
    c. Change the loudness of each track (dynamics)
3. Describe the changes they made and how they affected the mood of the song using the musical terms timbre, tempo, and dynamics.

Materials Needed
1. E8 Presentation

2. MIDI Timeline
3. E9 Worksheet
4. Student computer with access to DAW
5. MIDI Files (if providing). There are many free resources online.

Procedures

Prior Knowledge: Students (S) will need to have basic familiarity with a DAW (digital audio workstation) such as SoundTrap or GarageBand. Could be presented in a prior lesson. If Supplying MIDI files, T will show S how to access a folder of pre-selected MIDI files and how to listen to each.

Lesson Introduction (10 Min):

- T tells students that today they will be learning about the history of MIDI and why it's important to music. They will also have the opportunity to create and remix music using MIDI files.
    - A review of DAW and MIDI from prior lessons may be needed.
- T shares a slideshow on the history of MIDI and the timeline of progress, highlighting important figures throughout history.

Lesson Activity (30 Min):

Students should have a basic understanding of how to open their DAW and view tracks prior to beginning this activity.

- T will assign groups of three to four S.
- T invites S to open their DAWs and import the MIDI files they will be using for this class period. There are two basic ways to import MIDI files:
    - On most computers, you can drag the file from a folder directly into the track area.
    - On tablets and some computers, you need to find the "Import" option. If you cannot find it, search "How to import MIDI with..." and specify the program and device you are using.
- T will demonstrate three ways to "play" with the MIDI file they've selected. These can be done in any order. (I recommend introducing one concept at a time and giving students time to "play" with it. Then, start from scratch and let them decide the order in which they want to change the three musical elements. Use the worksheet so students can record their preferences and why).
    - When you import a MIDI file, each track is automatically assigned a virtual instrument (usually). T shows S how to change the virtual instrument of each track and how to change the settings of virtual instruments, such as reverb, echo, and EQ. (For example, importing a classical song might make each track a grand piano or an orchestral string instrument).
    - T encourages S to change the tracks to sound like a different ensemble, such as a brass band, woodwind ensemble, rock band, or choral ensemble.
    - T encourages S to keep a list of their favorite virtual instruments and why, reinforcing that the different sounds they choose change the "timbre" of the song – the tones, feel, and mood of their song.

- T shows S where the BPM (beats per minute) is located and explains that BPM shows the word "tempo." T invites S to adjust the BPM of their song multiple times and talk to a partner about what it sounds like when the numbers change.
    - T encourages S to write down a range of BPM that they like and why.
- T demonstrates basic mixing for S. Each track should have a knob or slider to change the loudness of each track. This is usually labeled "volume." T shows S how to adjust the "dynamics" of each track to make certain tracks stand out or be heard more clearly.
    - T encourages them to write about which instruments they changed and how that helped their song sound better or made certain parts clearer.
- When a S is finished, T will help them "export" the track. They can export a .mp3 or .WAV file to share the song as an audio file. They can also export their file as a "MIDI" and other students can edit their creations.
- It is suggested that you repeat this process with a new MIDI file each time, demonstrating less and giving students more autonomy in their choices. Two extension ideas are offered below to increase the amount of time students can spend in their "MIDI Playground."

Assessment Strategies

Wrap-up and Assessment (10 Min):

1. It is always great when students can share their creations with the entire class. Have them prepare a brief "speech" about their song before playing it for the class. T can use the student worksheet as a guide to ask the group the following questions.
2. What song did you start with? Why did you choose this song (if they were given a choice)?
3. How did changing the virtual instruments change the timbre (tone, feel, sounds, mood of the song)?
4. What is the BPM/tempo? Has it changed a lot? If it was changed a lot, how did changing it affect the song?
5. Did any tracks get their dynamics/volume adjusted? Describe what tracks are quietest (piano), medium loud (mezzo forte), and loudest (forte). Why did the track get adjusted?

Based on their responses, T can assess each group using the simple rubric below for each musical element.

3 – The student(s) changed the expressive element (tempo) and can describe how changing the tempo affected their song.
2 – The student(s) can describe the expressive element (tempo) but does not adjust it in their song.
1 – The student(s) changed the expressive element (tempo) but struggled to describe how it changed their song using musical language.

Extensions/Adaptations

Age Adaptations:

- For younger students or to streamline the process when internet searching by students is not possible, have MIDI files for your students already downloaded and saved to a cloud-based folder.

- Prior to the lesson, ask students for their favorite music from video games, YouTube channels, movies, popular music, or genre-specific music.
- Search for the name of the song and MIDI.
- Download the MIDI and import it into a DAW such as SoundTrap.
- Review what was created and eliminate unnecessary, convoluted, or corrupt tracks.
- Re-save the MIDI for the students to access.

Extension 1:

- Open an existing MIDI track, song, or student creation in a DAW.
- Have students re-arrange the notes of a loop, using only the pitches from the original loop. This is often done in the piano roll section of a track.

Extension 2:

- Open an existing MIDI track, song, or student creation in a DAW.
- Have students choose their favorite one or two tracks from the existing MIDI and remove all other tracks.
- Change the virtual instruments or edit the existing instruments in some way (reverb, hi/lo pass filters, EQ, etc).
- Add additional tracks to the project using pre-made or student-made loops. The result is a mash-up of a familiar song through MIDI and student-selected other loops, creating a remix. Drum tracks are often good choices for students to add to the melody from a MIDI file.

Extension 3:

- Have students export their initial projects as MIDI files, preferably to a shared folder that other students can access.
- Have students remix the exported MIDIs from their peers.

Adaptations

- Allow students to use text-to-speech software to listen along to MIDI from the NAMM archives.
- Consider highlighting keywords, phrases, or areas you'd like students to focus on.
- Provide students with steps on how to log in and load DAW (eg: GarageBand).
- Provide a video of how to listen to and download MIDIs so students can re-watch and follow along. Alternatively, provide slides, one at a time, with step-by-step directions with screen grabs.
- Provide a worksheet for students to list their favorite features, such as virtual instruments, BPM, etc.
- Provide visual support for the Worksheet example.

Spotlight on Careers in Music

This lesson plan can be tied to specific careers in music:

- Sound Engineer
- Music Producer
- Composer / Film Scorer
- Foley Artist
- DJ

For comprehensive information on careers in the music industry, please visit Consider a Career in Music