Create Your Own (Music) Code

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City: Evanston
Grade/Class: 4th Grade Music

Focus of Project/Unit

The objective of this lesson is to help students draw connections between music literacy, MIDI, language, and computer code.

Rationale for Project/Unit

Different applications and disciplines often require knowledge of different communication systems and the ability to make sense of and decode those systems. For example: musicians use a variety of symbols to communicate musical information in a visual manner, electronic musical instruments use a numeric system called MIDI to share musical information, and software developers use a variety of coding languages to communicate with computers what they want them to do.

Standards and/or Learning Goals Addressed

Wyoming Fine & Performing Arts

- FPA 4.1.M.2: Students perform independently and with others a varied repertoire of music, developing pitch accuracy, rhythm, posture, dynamics, and steady beat.
- FPA 4.1.M.4: Students create music using a variety of traditional and nontraditional sound sources
- FPA 4.1.M.5: Students read and notate simple rhythm, dynamics and pitch notation

Wyoming Computer Science

- 5.NI.NCO.01 Model and explain how information is broken down into smaller pieces, transmitted as packets through multiple devices over networks and the internet, and reassembled at the destination.
- 5.DA.IM.01 Use data to highlight or propose relationships, predict outcomes, or communicate an idea.

Materials Needed

- Musical instrument to perform coded music (In this case, would probably be the tin whistle or mallet percussion instrument for 4th grade)
- Writing materials (paper, pencil, etc.)

Plan for Implementing the Lesson

- Show video of player-piano playing music from piano roll. Briefly describe how and why piano rolls were used: a system to communicate information to a machine to achieve a desired response from that machine. (https://www.youtube.com/watch?v=ZXYslYDzF8o)
- Briefly discuss and show examples of uses of written code (other alphabets, computer code, everyday symbols we are familiar with, etc.)
- How and why do we use these symbols? How and when do we learn to decode or interpret such symbols?
- Review musical notation concepts. Students should already be familiar with the basics of standard notation and alphabetic notation.
- Discuss as a class and model for class various other ways that musical information could be communicated visually.
- Have students work with a partner to develop their own unique musical code and write down a tune (could be familiar or original) using their system.
- Have student groups explain their system to one another and see if the other groups are able to accurately perform their "music."
- Whole class discussion at end to discuss how successful they were at communicating and interpreting one another's musical code.

Extension

Could students develop a code that would allow them to communicate non-musical messages via a musical instrument? (Imagine you are a spy and need to pass a secret message to someone in the audience of your musical performance. How would you achieve that goal?)