

Ear Training: Waveform Identification

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This lesson will teach students how to use their ear to identify the three basic waveforms: sine, square, and triangle. Using emotional ear training as a pedagogical approach, students will associate feelings or ideas with certain sounds to help them develop their sound identification skills.

Overview

Lesson Objectives

By the end of the lesson, students will be able to:

- Identify whether a sound is a sine, square, or triangle wave.
- Identify the use of sine, square, and/or triangle soundwaves in a piece of music.

Materials

To run this lesson, the following are needed:

- Access to the following resources page:
www.emayhew.com/waveform-resources.html
This page must be made visible to students.
- Speakers connected to a computer.
- Paper and writing supplies for students.

Instructional Sequence

- 5 mins. Begin with regular classroom maintenance (ex. check in with students, attendance if applicable). Introduce the lesson and agenda.
- 10 mins. Pose the following question to the students: what is music? Ideally students will come to the conclusion that music is sound. Continue the dialogic process by further questioning what sound is. Students should come to the conclusion that sound is multiple waves travelling through air.
- 20 mins. Explain that electrical currents can create basic waveforms. Identify the sine, square, and triangle waves in Figure 1 of the resources. Play the example of each soundwave found in Figure 2 of the resources. After each example, ask students to share how they would describe what they heard.
- 20 mins. Now, present the students with the music examples in Figure 3 of the resources. While listening to the musical excerpts, students will write down all the words, ideas or feelings they experience during the music. By attaching emotion to sounds, students can use this as a tool to help them identify different sounds based on how it makes them feel. This method is called emotional ear training.

- 15 mins. To assess understanding, play the musical piece in Figure 4 to the students. Students will have to identify what waveforms are being used at the indicated times indicated on the resources page. The instructor will most likely need to repeat the song, particularly at the times denoted in the question.
- 5 mins Wrap up the lessons content, reiterating the waveforms discussed and the methods used to identify each waveform.