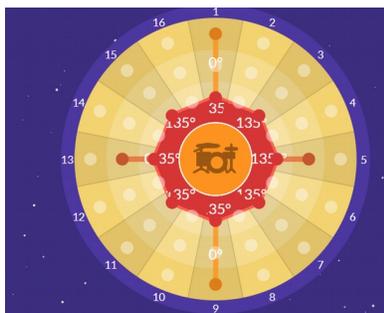


Art Form

From the graphic representation of sound waves to the ratios between notes and octaves to the appearance of patterns to parody music videos there are many connections that can be made between math and music. Personally, I also have a passion for music. I completed a music minor in college and continue to play with various wind ensembles and concert bands. Because of this passion, I am always on the search for ways to connect music with math and I am continually fascinated by the way the two content areas intertwine with one another. One of the best things about integrating the two topics is that not only can we explore the deeper mathematics that are involved with music, but it also allows for creativity and a connection to the arts.

Lesson Enhancement

The integration of music can enhance an introductory geometry lesson that I teach at the beginning of the course. The lesson focuses on the general search for patterns and structure within mathematics as well as reinforcing key academic vocabulary and reviewing properties of regular polygons. Specifically, I would like to use the Groove Pizza App to create this integration of math and music. According the program's website, "Groove Pizza is a circular rhythm app for creative music making and learning! It's also a playful tool for creating grooves using math concepts like shapes, angles and patterns." An example of a screen shot from the app is shown below.



I am very excited about integrating music into my geometry course with this app because it will give students a concrete representation of patterns that appear in both math and music. I am also hopeful that students will have better retention rates of properties of regular polygons because of the connection that will be made to music. This app also allows for a great deal of creativity with both the mathematics involved and the music involved!

Interdisciplinary Context

Extending to a general context, music can be used to integrate just about every content area. As already discussed, connections can be made between math, music, and physics. In addition, it would also be possible to extend to the historical and social context of a specific piece of music as well as the language arts background of lyrics. The Groove Pizza App that I plan on using also has a connection to the visual arts. Rather than focusing on creating a musical composition or specific polygons, students instead could focus on creating a visual composition and then examine the music and math that results from that visual composition.