Name(s)	Project Number
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Project Title

What Is the Relationship between Math, Music, and Emotion?

Abstract

Objectives/Goals

My hypothesis was that the mathematical frequency of a note played on a piano could be correlated to a specific emotion.

Methods/Materials

After obtaining informed consent I presented my test to my school mates, male and female, ages 11-12. During my experiment, I played a series of musical notes on the piano. The notes I selected were presented in somewhat random order to the listener during a video. All tones were played together as a pair of notes relatively close together but also across a wide range of frequencies - up and down the piano keyboard. The subjects then took two surveys, selecting the emotion they felt with each corresponding note.

Results

The data showed my test subjects seemed to equate happier emotions with higher frequencies and lower frequencies with sadder emotions. My general hypothesis about light and happy music (higher notes) vs. dark and dreary music (lower notes) seems to hold true.

Conclusions/Discussion

In conclusion, it appears that math, music and emotion are definitely intertwined in a complex relationship. As the number of musical melodies are infinite, the number of subtle emotional responses that can be felt from music is infinite as well.

Summary Statement

The purpose of my project was to determine if there was a correlation between mathematical frequency of musical notes and certain emotions.

Help Received

My mom and dad helped me record the video and make a survey. My dad helped with the explanation of the mathematical analysis of the results and he helped with the graphic data.