PHYSICAL SCIENCE CONNECTIONS

Lesson 1, Part 1: How Can Aspects Of Physical Science Translate Into Music Composition?

For centuries musical composers have looked at the world around them to inspire their musical compositions. In this unit of study we will look at several ways you can use physical science as a springboard into musical composition.

Vocabulary:

Composer: an artist who puts together music for performance.
Oratorio: a large musical composition for voice and instruments. Unlike opera it is not staged.
Word painting: a technique that a musical composer uses to make a musical composition reflect the literal meaning of the text in a song.
Melody: the tune. Generally, the melody is what a person in a song sings.
Expansion: the act or process of expanding, or increasing.
Compression: the act of compressing, or decreasing.

Lesson:

How did the composer George Frederic Handel come to create one of the most famous oratorios in the western world? It’s called the Messiah and chances are good you’ve heard some part of it. Imagine that it is 1741, Handel is sitting at his desk staring at a blank sheet of paper and he may have been baffled. So he read the words that he would set to music again and again. Then he started speaking the words to himself.

Every valley shall be exalted,
and every mountain and hill made low,
the crooked straight and the rough places plain.

As he read the text, he began to think about the geography mentioned in the words. How could he create mountains and valleys in his music? How could he make the crooked straight and the rough places plain? This composing strategy is called word painting. Then he began expanding and compressing the musical ideas for effect.
Try This!
Draw a simple line sketch of a plain or desert, under that draw a valley. Under that, draw a simple line sketch of a mountain and a hill. Don’t worry about making it realistic; let your attention go to making the shape of a plain, a valley and a mountain.

Then listen to the tenor aria from Handel’s Messiah and repeat the exercise as you listen to the text set to music.

How do the two line drawings compare to each other? Could you hear the hills, valleys, mountains and plains in the melody?

What else did you hear? What did Handel choose to do on words like *exalted*? The first time we hear the word it takes up about the same amount of time as the rest of the words. But the second time Handel has expanded the word. Each time he uses the word in his composition, he expands it more and more to take up more time in the song.

Next steps:
Take a familiar piece of text or a poem you like. Look for words that have a shape and draw them. Then set that shape to music; you don’t need to know how to play an instrument, you have your own voice! Next, decide how you will expand or compress words to make an effect.