

Cycles in Music!

There are many ways to find cycles in music. Explore one of these (or more than one if you have time). Perhaps you can find other cycles in music!

1) Vibrating Strings

When you play a note on a violin or a piano, a string vibrates back and forth. We measure the speed of the vibration in cycles per second. The A below middle C on a piano, or the A string on a violin, is usually tuned to 440 cycles per second. That means the string is moving back and forth 440 times each second. This is what our ears hear as the *pitch* of a note, how high or low it is. We could also call it the *frequency* of a note.

What can you learn about musical notes and their frequency? What determines how fast a string will vibrate? How can a violinist change the pitch of a string with her finger? What are the highest and lowest pitches a violin can make? Or a piano or other instrument? What are the highest and lowest frequencies people can hear? If you play a note on a flute, what is vibrating?

2) Notes on a Piano

Notes are given letter names. Find the A on a keyboard below middle C. Now go up the white notes. ("Up" on the keyboard means to the right, and leads to notes higher in pitch.) After A comes B, then C, then D. Keep going! What note comes after G?! It's a cycle! We're back to A, but this A is an octave higher than the A we started on, and its frequency will be 880 cycles per second. If you play the notes from A to A, using the white keys, you've played a kind of minor scale. Can you learn about other scales by starting on other white notes? How many tones are in a scale if you play all the white *and* black notes in an octave?

3) Meter

A lot of music is written in *measures* with a certain *time signature*. For example, waltzes are written in 3/4 time. You could count the measures 1 2 3, 1 2 3, etc. If you listen to a band, you might hear the tuba playing OOM pah pah, OOM pah pah for a waltz. What other meters can you learn about? How would you count them? If you explore the music of other countries, such as Bulgaria, or India, you might learn about meters that are less common here.

4) Chord Patterns

A lot of music is based on a certain chord pattern that keeps cycling throughout the piece. Heart and Soul is perhaps the best known example. It can be played with the following chords repeated over and over: C, Ami, Dmi, G. (Or you can play F instead of Dmi.) Can you learn to play it? Can you find other examples of chord patterns? What about La Bamba by Ritchie Valens? Or I Got Rhythm by George and Ira Gershwin? My son suggests Katy Perry's Firework, with the entire song based on a two-bar chord progression (Ab, Gb, Fmi, Db). He also reminds me that Twist and Shout has the same chord pattern as La Bamba.

5) Ostinato

An ostinato (from the Italian word for *stubborn!*) is a repeated pattern in a musical composition. It can be a bass line that keeps repeating, as in the Pachelbel Canon, or a rhythmic riff that keeps repeating, as in Ravel's Bolero. Listen to those pieces and see if you can hear the ostinato cycling over and over. Can you find other music with ostinatos? My son just suggested another example: "Shake Your Body" by the Jacksons, with the entire song based on a one-bar repeating bassline/rhythmic riff in the key of G.

6) Rounds and Songs with Choruses

Nancy has taught us many rounds and many songs with choruses. Can you learn more about one or the other? Can you bring in a round or a chorus song that's new to our school? Can you try to write a round?

7) Rondo Form

This is similar to the idea of chorus. Instrumental music can be written in Rondo form, where we hear some music, then something different, then back to the beginning music, then something new, then back to the beginning music again, etc. Beethoven's piano piece Fur Elise is a well known example, as is Mozart's Rondo Alla Turca. Listen to them! Can you learn to play a rondo? Can you find other examples?

9) Framing Devices

Framing devices are used in poetry and stories as well as music. Sometimes the artist wants the ending of a piece to be the same, or similar to, the beginning; or wants to find a way to enclose parts of a piece with the same music or words. Mendelssohn's Overture for A Midsummer Night's Dream, with its famous "four chords," is a beautiful example. John McCutcheon's song Christmas in the Trenches also has a framing device, coming back to "My name is Francis Tolliver" at the end. Johann Sebastian Bach liked framing devices and used them often. In his Magnificat he created music for a Latin song, writing many movements with different voices and instruments. In the final movement of the piece are the words "Sicut erat in principio"—"As it was in the beginning"—and you can probably guess what music he used for that! He also used a beautiful framing device in his Goldberg Variations, ending the thirty exciting and dramatic variations by repeating the simple aria the whole piece started with. (There are other cycles in the Goldberg Variations too.) And in his monumental B Minor Mass he ended with music from an earlier movement, though not the very first.

10) Can you find other examples of cycles in music? Perhaps a song that's about cycles or circles? Can you bring some music to your next class? It could be music you can sing or play on an instrument. Or recorded music on an ipod or disk or computer. Or the name of a song your teacher can find on youtube and play for the class. Be ready to explain about the cycle or cycles in your piece of music!

11) Have fun, and listen to lots of wonderful music!