The Garden of Your Mind

Teachers Guide

Field Trip Concert for Students

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The Garden of your Mind
Music and Imagination

“Did you ever grow anything in the Garden of your Mind? You can grow ideas in the garden of your mind. It’s good to be curious about many things. You can think about things and make believe. All you have to do is think, and they’ll grow.”

~Fred “Mr.” Rogers

In the planning stages of this year’s Kidz Konzerts and Music in the Middle Elgin Symphony Orchestra performances, the ESO Education Committee held a brainstorming session. We perceived a curriculum highlighting the ideas of great composers in addition to drawing connections in music with science, technology engineering and math.

Each student is unique in their approach to learning and music study can access areas of the brain that are difficult to unlock. There is evidence that music inspired great minds in other disciplines. Albert Einstein, Benjamin Franklin, Neil Armstrong, Alexander Graham Bell and Thomas Edison were all accomplished musicians.

Oliver Sacks, British neurologist and naturalist said, “What is beyond dispute is the effect of intensive musical training on the young, plastic brain. Although a teaspoon of Mozart may or may not make a child a better mathematician, there is little doubt that regular exposure to music and especially regular, active participation in music, may stimulate development of many areas of the brain.”

Within this guide we have background on the composers, lessons on music structure and elements, and STEM activities.

Music study can aid, enhance and even be an ally when pursuing all disciplines. May this concert be a planted seed.

Imagination is everything. It is a preview of life’s coming attractions.”

~Albert Einstein
Leonard Bernstein, whose parents were Jewish immigrants, was born in Lawrence, Massachusetts. He fell in love with music when his cousin gave him his beat-up piano. His parents were not supportive of his interest in music so he had to find a way to pay for his own piano lessons. After his later success as a student at Harvard and then at the Curtis Institute of Music, his parents finally appreciated his gift and supported his career.

In 1958 he became the music director of the New York Philharmonic Orchestra, a position he held until 1969. During his tenure he championed the Young People’s Concerts, televised programs which introduced an entire generation to classical music.

Bernstein was a great performer, conductor, educator and composer. His contributions to American music are unsurpassed.

Bernstein’s idea: write an operetta based on a novella by Voltaire from 1759. Start with an overture highlighting the musical themes that will serve as a preview to the music coming later in the operetta.

Overture to Candide, an orchestral piece that opens the operetta Candide, was premiered by the New York Philharmonic in 1957 with Bernstein himself conducting. It was a great success, which would have been very gratifying to Bernstein after a disappointing Broadway run of the full operetta production in 1956. In fact, today this piece is considered his most popular orchestral work.

The overture opens with a fanfare by the brass that sets the energetic mood of the piece. A driving melody in the strings and woodwinds gives one the feeling of a galloping race horse, or perhaps a skier charging down the slopes. A sweet and lyrical middle section is followed by an exciting close,
returning to the brass fanfare and opening themes. Bernstein uses lots of percussion throughout the piece, especially the cymbal. He also uses **syncopation** to give the piece a lively, energetic feel.

In this example, syncopation is used. You can see that the strong beat is at the end of the bar in the Bass Clarinet and Bassoons. This gives the piece a “jazzy” feel and plays with our expectation of where the beat should occur.

Vocabulary

**Operetta**: a short opera, usually on a light or humorous theme and typically having spoken dialogue.

**Overture**: an orchestral piece at the beginning of an opera, suite, play, oratorio, or other extended composition.

**Syncopation**: musical rhythm in which stress is given to the weak beats instead of the strong beats.

Activities

1. With this exercise, students will be able to recognize the feeling of syncopated rhythms. Divide students into two groups. Have one group clap a steady beat in 4/4 time, one clap on each beat. Based on the rhythm in the example above, ask the second group to stomp and clap simultaneously on the fourth beat. Start slow and increase the tempo gradually until you are feeling the rhythm at a very fast tempo. Have group one stop clapping on the second and fourth beat, clapping on the first and third beat only. Group two continues to stomp and clap on the fourth beat. Do you feel the syncopation?

2. Here is a link to a website called “The Yellow Brick Road: Fun education resources for serious music literacy”. This page has some excellent syncopation games:
   http://www.yellowbrickroadblog.com/2015/05/teaching-syncopation-part-one.html

3. As your students listen to the Bernstein piece, ask them to raise their hands when they hear examples of syncopation in the music.

"Let us cultivate our garden."

~ Voltaire, Candide
Music and Math

“May not music be described as the mathematics of the sense, mathematics as music of the reason? The musician feels mathematics, the mathematician thinks music: music the dream, mathematics the working life.”

~James Sylvester (1814-1897)

Rhythm, patterns, symbols and time signatures: all of these and more are properties of music that are connected to mathematics. In ancient Greek times, music was seen as a mathematical art. Based upon mathematical relationships, music elements including octaves, chords, scales, and keys can all be understood logically using simple mathematics.

Lesson Objective

This activity will demonstrate a connection between music and simple fractions as they relate to a measure of music.

Plan

1. Review musical notes and their values with the students. Have students listen to the value of each note as it is clapped for them. Students should be encouraged to remember that notes represent specific values. Have them think of a whole note as equaling one measure.
2. Choose a volunteer from the class to clap a whole note while another volunteer, or the teacher, claps half, quarter, eighth, sixteenth, and even thirty-second note values.
3. Distribute worksheet [Music and Math fraction worksheet]

Music and Science

“I often think in music, I live my daydreams in music.”

~Albert Einstein (1879-1955)

Albert Einstein, in addition to being a scientist, was an accomplished violinist. He was fascinated by Mozart and felt a connection with him, feeling that their creative process was similar. When struggling with the extremely complicated mathematics that led to his great scientific discovery, the theory of relativity, he would pick up his violin and play for himself. He was inspired by the simple beauty of Mozart’s violin sonatas. "Whenever he felt that he had come to the end of the road or into a difficult situation in his work, he would take refuge in music," recalled his older son, Hans Albert. "That would usually resolve all his difficulties."

What do music and science have in common? From sound waves and acoustics to psychology and emotions, the variety of scientific research involving music is vast.
The Scientific Method

The scientific method is a way to ask and answer scientific questions by making observations and doing experiments. It consists of the following steps:

- Observe something and ask questions.
- Make your hypothesis (an explanation made on the basis of limited evidence as a starting point for further investigation).
- Make predictions about logical consequences of the hypothesis.
- Test your predictions by an experiment or an observation.
- Create your conclusion on the basis of data or information gathered in your experiment.

Lesson Objective

Students will conduct an experiment using the scientific method. Based on the provided information about the music and the recordings of the music to be performed on the “Garden of your Mind” concert, students will predict which piece will be the most popular with the audience. Based on data gathered at the concert, students will reach a conclusion about which piece on the program was the most popular with the audience.

Plan

1. Study information about the composers and listen to all of the pieces on the program prior to attending the concert. Ask students to take notes as they listen to the music. What do they like about each piece?
2. Poll the students before they attend the concert. Identify which piece was their favorite. Represent the results in fractions. (i.e. 12 of 22 or 6/11 students preferred Beethoven, etc.) Based on the results of student preferences in your classroom, make a prediction of which piece will be the most popular with the audience at the concert.
3. Assign one student to collect data at the concert. Watch the applause meter on the stage and note what the totals are for each piece.
4. When your class returns to school after the concert, discuss the data collected from the applause meter. Was the piece that had the most applause at the concert the same piece predicted by the students’ preferences before the concert to be an audience favorite? Did they feel that the applause meter was an accurate source to gather information about the audience preferences? Why or why not? What might be another method to gather data about audience preferences?
Overture to *The Impresario*

By Wolfgang Amadeus Mozart

b. January 27, 1756   d. December 5, 1791

> “Then my soul is on fire with inspiration, if however nothing occurs to distract my attention. The work grows; I keep expanding it, conceiving it more and more clearly until I have the entire composition finished in my head though it may be long... It does not come to me successively, with its various parts worked out in detail, as they will be later on, but it is in its entirety that my imagination lets me hear it.”

~W.A. Mozart

Born in Salzburg, Austria, Wolfgang Amadeus Mozart was a precocious musician and from an early age could play many instruments. Over his career, he composed hundreds of works including sonatas, symphonies, concertos, chamber music, masses and operas.

During Mozart’s time, political leadership in smaller cities like Salzburg and Vienna was in the hands of the wealthy aristocracy who could afford to hire musicians to entertain them. Mozart spent his career working as a court musician, and he traveled throughout Europe to perform his work.

Mozart’s father, Leopold, was a composer and musician who taught his son to play the piano at the age of 3. By the age of 21, Mozart had become a successful performer and composer. He had many ups and downs in his career and often could not pay his debts. His final appointment was in the court of Emperor Joseph II as his
chamber composer. It was a part-time job with low pay, but it allowed him time to compose other commissions.

Mozart’s death came at the young age of 35. At the time of his death, he was considered the greatest composer who ever lived. His music, when first heard, sounded complex and boldly expressive. He continues to inspire audiences today, and his work is among the most-performed music of all time.

Mozart’s idea: compose a singspiel about a humorous subject. Include a lively overture in Sonata-Allegro form that will convey a feeling for the subject and set the mood for the upcoming drama.

The Impresario (Der Schauspieldirektor) is a comic singspiel, a form of opera that includes spoken dialogue. Originally, The Impresario was written because of "the imperial command" of Emperor Joseph II, who had invited 80 guests to a private luncheon and wanted entertainment for them. It is regarded as a parody on the vanity of singers who argue over status and pay. In addition to the Overture, there are just four vocal pieces in the score. The vocal numbers are not among Mozart’s most memorable; however, the notable Overture is popular and performed often on its own, usually to open an orchestral program. The remainder of the singspiel consists of dialogue which is usually rewritten in modern productions to be relevant in the present day.

Form and the Classical Period

Mozart was a defining composer of the Classical Period stretching from around 1730 to just after 1800, sitting on the timeline between the Baroque and Romantic periods. Using a specific form to compose music is a way to organize it so that the ideas (or musical themes) fit together. Pop songs have form. When a band starts a song, we all know that soon there will be a refrain, then a repeating of the verse a few to several times with a refrain in between verses. There is often a bridge section that takes us to a contrasting section. Everyone intuitively understands this form.

In the Classical period, composers used form to make the piece more dramatic and intense. One of the main structures to come into dominance is called Sonata-Allegro form (often called Sonata form). In this form, contrast is created between two (sometimes more) main themes. These themes are introduced at the beginning of the piece, interact with each other during the development section, restate in the recapitulation section and close with a coda.

One might think of it this way: when you write an essay you are going to start out with an introduction and the statement of a subject. You then write some paragraphs supporting and developing your subject and then conclude with the recap of your subject and maybe some additional thoughts and then a closing paragraph.

Overall Structure of Sonata-Allegro form:

Exposition: This is the section where the composer introduces the principal themes of the movement: First Theme, Second Theme and Closing Theme.
Development: This is considered to be the most creative aspect of the movement. The composer chooses any or all of the above themes to develop by means of different rhythms, harmonic progressions, and any means of treating the theme(s) to expressive variation. New material may be added.

Recapitulation: The composer returns to the themes of the exposition, with added variance. The section ends with a coda (or conclusion).

[Here is a diagram illustrating the structure of Sonata-Allegro form]

Vocabulary

Singspiel: a form of German-language music drama, now regarded as a genre of opera. It is characterized by spoken dialogue, which is alternated with ensembles, songs, ballads, and arias which were often strophic, or folk-like. (Q: How is a singspiel different from an operetta?)

Parody: an imitation of the style of a particular writer, artist, or genre with deliberate exaggeration for comic effect.

Theme: a melody, or a musical idea

Sonata-Allegro form: a structure, perfected in the Classical Era, which consists of three main sections: Exposition, Development and Recapitulation (sometimes called Sonata form).

Discussion

After listening to Overture to *The Impresario*, how do you feel? (i.e., Sleepy? Lazy? Happy? Energetic?) Do you think the singspiel is going to be sad, funny, or tragic? Why?

Activities

For older students: before the second listen to the piece, print out [Sonata Allegro Form diagram] and [Impresario themes sheet]. Study the form with the Sonata-Allegro Form diagram. If you have a piano, play each musical theme and each of its subjects so that the students become familiar with them. As you demonstrate these themes, ask students to follow the diagram. Each theme contains 2 subjects within it. Theme 1 also has a closing subject before Theme 2 is introduced. Listen to the piece again while following the diagram.

For younger students: if you have a piano, first demonstrate the themes using the [Music themes sheet]. Now, listen to the recording of the piece for the second time. For Theme 1, have them raise 1 finger for the entire theme, including its subjects. When the first subject of theme 2 is heard, raise 2 fingers and keep them raised through both subjects. When the closing theme is heard, have them cross their arms. During the development section, have the students stand or raise hands and wiggle fingers, or both. Notice how the themes interact. At the recapitulation section, sit again and acknowledge the themes with 1 or 2 fingers. Repeat this exercise until the students begin to understand the concept of Sonata-Allegro form.

Reflect on the piece again: now that students have been introduced to the structure, do they hear the piece differently?
Symphony No. 7, II. Allegretto
By Ludwig van Beethoven
b. December 16, 1770    d. March 26, 1827

“Music is a higher revelation than all wisdom and philosophy. Music is the electrical soil in which the spirit lives, thinks and invents.”

~Ludwig van Beethoven

German-born Ludwig von Beethoven lived a heartbreaking life, misunderstood and under-appreciated. Despite the challenges of his life, he flourished through music. Often regarded as the greatest composer who ever lived, his nine symphonies are considered among music history’s greatest works.

Written in 1812, his seventh symphony is not his most famous, but still, memorable. At the time of its writing, Beethoven was living in Vienna. It was a grim place at the time. Napoleon had conquered Vienna twice in the decade prior. The symphony is filled with happy energy though, perhaps written to raise the spirits of the Viennese people.

Beethoven’s idea: write a joyous symphony filled with rhythmic drive.

The second movement, Allegretto, is an example of how Beethoven could write the most astounding music with uncomplicated materials. At the first performance of the piece, the audience was so wild for this movement that they demanded that it be repeated! Why is this movement so popular? Perhaps because of the simplicity of this musical element: an ostinato of long, short, short, long, long or quarter eighth eighth quarter quarter. Remember, at this slower tempo, a quarter note can be a long sound. Following the opening, heart-rending chord, you can hear this ostinato rhythm from the strings. It is a persistent and compelling rhythm, a constant repetition that has been said to represent time itself.

Listen to the opening of the Allegretto and count how many times the ostinato is repeated before the next melody appears (12 times). Now listen for the poignant melody played by the violas and cellos, longer tones that sweep up and down by steps to contrast to the ostinato pattern. After a long phrase, the theme repeats with a deeper texture as the dynamic level increases. The way the melodies intertwine, it’s as if they are taking turns trying to get just above one another to be heard. Close your eyes, think of dolphins jumping to the
highest heights out of the water, one right after another. Next, the ostinato is handed over to the woodwinds, adding even more volume, but don’t miss the violins trying to soar over all with their high pitches!

Soon you will hear the music texture change completely. The ostinato pattern takes a break and fluid triplet eighth notes appear, sounding like water running down a stream. This is the second theme, or the “B” section. At one point, you can hear the water fall from great heights, landing gently in the lake. The falling melody moves from the clarinet to the French horn. After a bit of time the flute and oboe take the line, then the strings. Notice the original, or “A” melody when it comes back, “arguing” a bit back and forth. When you hear the melody chasing itself within the string section, you are hearing a **fugue**. The piece ends with a call and response section between different sections of the orchestra. Finally, the heart-rending chord returns to close the movement.

**Vocabulary**

**Ostinato**: a musical figure repeated persistently throughout a composition

**Fugue**: music in which tunes are repeated in complex patterns

**Discussion**

Why is this symphony memorable? Can you sing the main ostinato to a partner? What about the second, more lyrical melody? How would you describe this to someone who has not heard this piece? What elements of the piece did you enjoy most, and why? If you could ask the composer about this piece, what would you want to know?

**Activities**

1. This simple exercise will give students an opportunity to experiment with the ostinato figure. Clap the ostinato “long, short, short, long, long” pattern in unison. As the students clap the pattern, have them sing or speak the words to “Go Tell Aunt Rhody”.

   Go tell Aunt Rhody
   Go tell Aunt Rhody
   Go tell Aunt Rhody
   The old gray goose is dead.

   Notice how easily the ostinato rhythm fits! Ask them to think of other songs they know that might work with this rhythm and sing them while clapping. How does adding this rhythm affect the song? Does it change the feeling of the song? Does it give it a forward motion?

2. There’s so much to look at on the internet about this piece! Here are a couple of links to check out when studying the piece:

   This one is a great visual...hard to describe, just take a look:
   [https://www.youtube.com/watch?v=4uOxOgm5iQ4](https://www.youtube.com/watch?v=4uOxOgm5iQ4)

   This one is a fun way to follow the score, even for non-music-readers. It’s fascinating, however it’s not a real orchestra on the recording but a computer-generated sound:
   [https://musescore.com/classicman/scores/65317#](https://musescore.com/classicman/scores/65317#)
Laideronnette, Empress of the Pagodas
from Mother Goose Suite

By Maurice Ravel

b. March 7, 1875    d. December 28, 1937

“Music, I feel, must be emotional first and intellectual second.”
~Maurice Ravel

Maurice Ravel was born in the Basque area of France near the border of Spain. His father was a successful engineer and inventor who enjoyed taking Maurice to factories to see the latest mechanical devices.

Both of his parents encouraged his interest in music. In later life, Ravel recalled, "Throughout my childhood I was sensitive to music. My father, much better educated in this art than most amateurs are, knew how to develop my taste and to stimulate my enthusiasm at an early age.” Ravel was encouraged by his parents to apply to study piano at the Paris Conservatoire, a prestigious music and dance school. After passing a rigorous audition, he was accepted at the age of 14, even winning the Conservatoire’s piano competition in 1891 at the age of 16. While he was at the Conservatoire, he became very interested in composition and studied with Gabriel Fauré, another famous French composer.

Impressionism

Ravel was one the leading figures in impressionistic music. This style of composing focused on atmosphere and moods and paid less attention to detail and form.

The impressionist movement began in the late 1800’s in France when a group of painters decided to experiment with some new ideas. They wanted to capture an immediate impression or feeling of a scene by showing the effects of light (preferring to paint outdoors). They were less concerned with the details of the scene and often placed the focal point of the picture in new and unusual places. Painters who embraced impressionism included Monet, Renoir, Degas and Gaugin. It was considered the first modern movement in art.

Impressionist composers used instruments and techniques that, like the paintings, would create an emotion without thought or analysis. Harp

Claude Monet: Impression-Sunrise (1872)
glissandos, exotic percussion sounds, unclear rhythmic meters, the pentatonic scale and chords with no clear resolution produce a feel for the ambience of a scene or a story portrayed by the composer.

Ravel’s idea: re-tell his favorite childhood tales in his unique musical language.

Maurice Ravel’s colorful “Mother Goose Suite” is a collection of musical depictions of famous children’s fairy tales written by French authors. The movement that the ESO will play is “Laideronnette, Empress of the Pagodas.” (Laideronnette translates as “the ugly one”).

The story of Laideronnette, Empress of the Pagodas

From a fairy tale called the “Green Serpent” and set in the ancient orient, this is a classic prince and princess story. An evil witch has cast a magical spell on them, however, turning the prince into a green snake and disfiguring the beautiful princess! They meet in the forest and go on walks and adventures together. On one of their walks they discover pagodas made of crystal, porcelain, emeralds and diamonds. As our unfortunate princess enters and decides to take a bath, the servants play music and dance for her entertainment. At the point that the music slows down (in the middle of the movement), you can imagine the green serpent (the prince) slithering his own dance for the princess. At the end of our story, as you might have already guessed, the prince and princess are restored to their normal selves, marry, and live happily ever after.

Ravel uses many exotic percussive instruments to depict the vivid sounds of the orient. Listen for the glockenspiel, the xylophone, the harp, cymbals, the triangle, celesta, and gong. He also makes use of the pentatonic scale, a very common scale that is used in music of the Far East. (If you would like to know what a pentatonic scale sounds like, just go to the piano and play only the black keys - those are the notes of the pentatonic scale!).

Vocabulary

Impressionism: a style of art that began in France around 1870, using spots of color to show the effects of different kinds of light and attempting to capture the feeling of a scene rather than specific details.

Activities

This lesson will ask students to use their imagination to create artwork based on what they hear in the music. Some of the artwork will be chosen to be displayed during the performance of this piece at the concert.

Materials: Paper, colored pencils, paint, clay, or any other art materials

1. Without providing any background about “Laideronnette, Empress of the Pagodas”, listen to the piece. Use the SQUILT {link to page} technique to reflect on what is heard.
2. Have students create works of art inspired by what they have heard.
3. Once their artwork is completed, tell them the story of Laideronnette. Listen to the piece again.
4. Email pictures of student artwork to: w.evans@elginsymphony.org no later than April 1, 2016. Some art pieces will be chosen to be displayed during the performance.
Music and Engineering

Benjamin Franklin helped draft the Declaration of Independence, was Ambassador to France, wrote *Poor Richard’s Almanac*, invented the lightning rod, bifocals and the Franklin stove, but did you know he was also a musician and invented the “Armonica”? If you have ever moistened your finger and circled the rim of a glass to make a sound, you have an understanding of how the Armonica works. Ben Franklin’s instrument was operated with a foot pedal. 37 bowls were mounted horizontally on an iron spindle. The whole spindle turned by using the foot pedal. The sound was produced by touching the rims of the bowls with water-moistened fingers.

Making Music with Water

Experiment with your own sounds by turning glasses of water into instruments.

**Materials:** 5 or more drinking glasses, water and a pencil

**Plan**

1. Line the glasses up and from left to right, fill them with different amounts of water. The first glass should have the least water, and each glass should have a bit more water than the one to its left.
2. With your pencil, hit the glass with the least amount of water and observe the sound. Next, hit the glass with the most water. Which glass makes the higher sound?
3. Hit the other glasses and see if you can compose a new melody!

Acoustical Engineering

Acoustics is the science of sound and vibration. Acoustical Engineers are concerned with the control and design of sound. For example, when a new concert hall for an orchestra is built, the builders rely on acoustical engineers to design the space so that the music sound is best for the audience.

Another job of an acoustical engineer is to reduce unwanted noise, which can have a significant impact on human health and can cause hearing loss. Acoustical Engineers are also key for the design of noise barriers, sound absorbers and silencers.

Use a balloon to amplify sound

Experiment with a balloon and compressed air to make a big noise with a small sound.

**Plan**

Blow up a balloon and hold it to your ear while you tap lightly on the other side. Why does it sound so loud? Because when you blew up the balloon you forced the air molecules inside the balloon closer to each other, and when they are closer together, they become a better conductor of sound waves than the ordinary air around you.
Many people, when they think of classical music, assume that the composers are long dead. And more often than not, they are. But Mason Bates is very much alive, born 39 years ago in Richmond, Virginia, living now in the San Francisco Bay area with his wife and two young kids. He started playing piano and composing when he was a child, but he has always been curious about many things outside music: literature, science, technology and more. Professionally, he spends his time in two very different musical worlds: working as a DJ in dance clubs across the country (he’s known as DJ Masonic), and writing music as composer-in-residence at the Kennedy Center in Washington, DC (after five years in a similar position with the Chicago Symphony Orchestra).

He has made a trademark of merging his two worlds. He often brings live classical performance into his club shows, and he incorporates techno-electronica into his large orchestral pieces. If you search “mothership mason bates” on YouTube, you’ll find him doing his DJ thing right in the middle of the YouTube Symphony, complete with lighting, videos and other special effects. He gives his pieces marvelous titles that seem more technological than musical: Alternative Energy, The Rise of Exotic Computing, Liquid Interface, Sea-Blue Circuitry.

Bates’ idea: compose music that uses technology employing electronics to give orchestral music an exciting new sound.

Music from Underground Spaces features not only electronic techno-sounds, but also, in the last section, recordings of far-underground earthquakes. Why would he do that? He says that his home in California sits on top of something called the Hayward Fault—essentially a fracture of the earth far beneath the surface, which has the potential to cause an earthquake. The year before he wrote the piece, the fault was especially restless and noisy, and his curiosity took him to the Berkeley Seismology Laboratory. There he heard the earthquake recordings, which he found “beautiful and eerie,” and they helped to inspire this new work.

Bates calls Music from Underground Spaces a tone poem. The piece has four sections, and each section has a title, which tells you the image he has in mind: “Tunnels,” “Infernos,” “Crystalline Cities” and “Tectonic Plates.” Beyond those titles, though, he doesn’t say if he’s telling a particular story, or describing a specific picture. You have to use your imagination, starting with the image each title creates in your mind.
The first thing you hear is a recording of a train rushing through a subway tunnel—which tells you right away at least one image the composer had in mind. If you’ve ever been in a subway, you know that it can be a noisy place, with lots of people rushing around, train cars creaking, wheels squealing on the tracks, doors opening and closing, amplified voices over the intercom. But when there is no train in the station, and not many people, a subway tunnel can be strangely, creepily quiet.

That’s how it seems at the beginning of this music. Listen first for quiet, sustained sounds in the low string instruments, joined by the plucked strings of the harp and high violins, then the flute and clarinet making eerie sliding sounds, then a long chord in the French horns. The subway train returns, the low brass instruments enter, an electronic bass drum launches into a regular dance beat, and suddenly the orchestra bursts into quiet activity—perhaps many people entering the subway platform?

Listen for the pulsing combination of marimba, high piano and muted trumpets, quickly joined by staccato (very short) woodwinds on off-beats, then flute, clarinet and bassoon making rapid falling gestures, and very fast notes in the percussion and piano. With the steady electronic beat, it soon feels like a dance party! The whole orchestra joins in, sometimes together, sometimes in sections. The woodwinds pass their rapid activity to the strings, who take it over, then hand it back.

Somewhere in the middle of all this, the bassoons, cellos and double basses start a rumbling rhythm, which you might imagine as some of the low earth rumblings the composer heard beneath his house in California—or maybe just the sound of a distant train in the subway. (The real earthquake sounds won’t appear until the final section of Music from Underground Spaces.) These give way to the faster activity, with French horns beginning a short rhythmic gesture that becomes gradually longer and louder, joined by the trumpets, low brass and low strings. Woodwinds, percussion, harp and piano whip themselves into a frenzy, plunging suddenly into the dark depths of the next section of the tone poem, called “Infernos”—which the composer describes as a particularly devilish nightclub!

During the remaining three sections of Music for Underground Spaces, Bates says, “the propulsive motives and driving techno rhythms of [“Tunnels”] become gradually stretched out,” moving “from blurry activity to slow-motion ambience.” The music delves deeper and deeper, as if tunneling farther into the earth, until at the end, the lowest members of the orchestra trade sounds with the ghostly earthquake recordings.

Music and Technology

How does Bates produce the electronic sounds during Music from Underground Spaces? When he is able to participate in a performance of the work himself, he stands within the orchestra with an electronic drum pad and a laptop computer and interacts “live” with the orchestra and conductor. But since he can’t be at every performance of his music, he uses computer software that allows a percussionist, or any other musician, to follow instructions in the musical score and trigger sounds on a laptop, which are heard through speakers on the stage.

Because much of the electronic portion of the work is pre-programmed, there are times when the conductor has to follow the beat of the electronics. At other times, when the electronics don’t lay down a strict beat, the laptop “player” follows the conductor.
Vocabulary

**Tone Poem:** music that describes non-musical things

**Discussion**

Notice and appreciate the integration of technology into the traditional orchestral texture.

How is it different from the other pieces on the program? Can you pick out the sounds made by the computer? Do you hear the steady electronic beat? It gives the piece a forward motion, similar to the ostinato pattern in the Beethoven.

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**Flight to Neverland**

*from Hook*

**By John Williams**

b. February 8, 1932

“The moment you doubt whether you can fly, you cease for ever to be able to do it.”

~ J.M. Barrie, *Peter Pan*

Peter Pan’s ability to fly is a symbol of the human imagination. Peter, representing our inner child, is the playful portion of ourselves that is quite often denied as we grow older. Peter tells Wendy that she can’t fly because she is trying so hard to be an adult that she has forgotten how to use her imagination. But he was able to change her thinking. “You just think lovely wonderful thoughts,” Peter explained, “and they lift you up in the air.”

Renowned movie director Steven Spielberg asked John Williams to compose the soundtrack for *Hook*, originally intended to be a musical, for which Williams wrote eight songs. Eventually the idea for *Hook* to be a musical was abandoned, but most of the ideas from the songs were worked into the score.

“My Flight to Neverland,” with its soaring strings, woodwind flourishes, brass fanfares and cymbal crashes, sends the imagination off on a journey through the atmosphere: a fitting end to a concert filled with music created from innovative ideas.
John Williams

Considered by many to be the greatest film score composer of all time, John Williams has written music for movies spanning six decades. He has also written for television, including themes for the Olympic Games, NBC Sunday Night Football and the NBC Nightly News.

In 1975, Williams teamed up with Steven Spielberg to compose music for his epic film Jaws. The score’s sinister 2-note motif has become synonymous with sharks. Williams considers this score to have been the jump-start of his career, winning him his first Academy Award for an original composition.

From 1980 to 1993, he followed Arthur Fiedler as the Boston Pops Orchestra’s principal conductor. He has written many concert pieces, including a symphony, concertos for horn, clarinet, trumpet, flute, violin, cello, and bassoon, and a sinfonietta for wind ensemble.

Williams is an accomplished pianist and has played on many film score recordings. He studied composition at The Juilliard School in New York City, and has received 5 Academy Awards and 45 Academy Award nominations.

Stephen Squires, conductor

Stephen Squires is a musician with a career that blends his passions for conducting, teaching, and performing. Mr. Squires has had the honor to conduct for many exceptional artists, including Frederica von Stade, Samuel Ramey, Janos Starker, Pinchas Zuckerman, Shmuel Ashkenasi, John Browning, Leon Bates, Stewart Goodyear, Richard Stoltzman, Ani Kavafian, Wendy Warner, James Tocco, Kevin Cole, Vadim Gluzman and most of the principal players of the Chicago Symphony and Lyric Opera Orchestras. Fully committed to conducting the music of living composers, he has premiered over eighty new works.

Mr. Squires received his musical training at the Preparatory School of the Eastman School of Music and the Crane School of Music, in his home state of New York. He earned his Master’s degree in Instrumental Conducting/Trumpet Performance at California State University, Northridge. Further conducting studies were with Helmuth Rilling, Maurice Abravanel, Daniel Lewis, Tsung Yeh, and at the Aspen Music Festival.

Mr. Squires has conducted recordings for the Delos, Spring Hill (a division of EMI), MEDR, Editions de la Rue Margot, Albany, MSR Classics and Centaur labels.

Stephen Squires is Professor of Conducting in the Music Conservatory of the Chicago College of Performing Arts, Roosevelt University. Prior to this appointment he served on the artist faculty of the Northern Illinois School of Music for nineteen years, where he received the prestigious “Excellence in Undergraduate Teaching Award.”

Mr. Squires’ current professional appointments include Resident Conductor of the Elgin Symphony Orchestra, Music Director of the Mendelssohn Chamber Orchestra (Rockford, IL), Music Director of the Millar Brass (Evanston, IL) and Music Director of the Illinois Brass Band (Arlington Heights, IL). He is the former Music Director of the Illinois Chamber Symphony. Mr. Squires has guest conducted the Chicago Symphony, the Syracuse Symphony, the Green Bay Symphony, the Columbus (OH) Symphony and the Chicago Composers Orchestra. In addition, he is an accomplished recital accompanist, freelance trumpeter, and frequent guest conductor at educational festivals throughout the country.
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About the Elgin Symphony Orchestra

The ESO was founded as a community orchestra at the Elgin Community College by Doug Steensland in 1950. In 1971 Margaret Hillis was appointed Music Director, and the Orchestra’s artistic growth grew significantly.

Margaret Hillis was an incredibly talented person. She was born in Kokomo, Indiana. During World War II, she was a civilian flight instructor and contemplated a career as a professional golfer. Ms. Hillis broke many barriers in her career. Her leadership and founding of the Chicago Symphony Chorus led her to eventually conduct major orchestras around the country. She captured national attention in 1977 when she substituted on short notice for an ailing Sir Georg Solti and conducted the Chicago Symphony Orchestra in Mahler’s Symphony No. 8 at Carnegie Hall.
Ms. Hillis was succeeded by Maestro Robert Hanson in 1985 as the Music Director of the ESO. Under Maestro Hanson’s leadership, the ensemble became a fully professional ensemble. In 1988, 1989, and 2005, the ESO was named *Orchestra of the Year* by the Illinois Council of Orchestras. The ESO was the first three-time winner of this award, which recognizes programming excellence, artistic quality and leadership. Maestro Hanson stepped down in 2011.

In 2013, after an international search that featured 200 applicants, the ESO appointed Maestro Andrew Grams as the fourth Music Director to lead this orchestra. Andrew has appeared with many of the great orchestras of the world as Conductor. Ironically, Maestro Grams and Maestra Hillis both received their conducting training from the renowned conductor Otto-Werner Mueller.

With an annual operation budget of just under $3 million, the ESO is Illinois’ premier regional orchestra. Audiences of over 40,000 are served each year, and over 20,000 students are reached yearly with a combination of Traveling Ensembles and Kidz Konzerts/Music in the Middle. The Elgin Symphony continues to enlarge its mission as one of the foremost education orchestras in the country, adding programs for adults like the Listeners Club at the Gail Borden Public Library and the Elgin Symphony Orchestra Listeners Club on Huntley Community Radio. A partnership with Advocate Sherman Hospital (Musicians Care) and Alexian Brothers Health System (Music Heals) brings professional musicians weekly into area hospitals with healing and soothing music.

**Resources:**


Jim Kendros: Listeners Club Notes

Sciencebuddies.org

Explorable.com

https://www.teachingchannel.org/videos/rondo-music-lesson

Merriam-Webster dictionary
Music and Math Worksheet

For this exercise, we are in 4/4 time with 4 beats per measure

Whole note 4 beats = one measure
Half note 2 beats = 1/2 measure
Quarter note 1 beat = 1/4 measure
Eighth note 1/2 beat = 1/8 measure
Sixteenth note 1/4 beat = 1/16 measure

Express each addition equation below in music notes and solve.

Example: 1/16 + 1/4 =

Answer: + = 5/16

1. 1 + 1/4 =

2. 1/2 + 1/8 =

3. 1/4 + 1/4 =

4. 1/8 + 1/16 =

5. 1/16 + 1/2 + 1 =
Sonata-Allegro Form

Exposition

1st Theme  2nd Theme  Closing Theme

Development

Themes are explored and dramaticized

Recapitulation

1st Theme  2nd Theme  Closing Theme

Coda

Bringing it to a close
The Impresario Overture Themes

W.A. Mozart

Theme 1

1st subject

2nd subject

Closing subject

Theme 2

1st subject

2nd subject

Closing Theme
SQUILT
Super Quiet Un-Interrupted Listening Time

- Do you hear rhythmic patterns that repeat?
- Is there a lot going on at once?
- Thick texture or thin texture?
- Do you hear a variety of volume levels? Crescendo or decrescendo?
- If you wanted to purchase this recording, what aisle in the music store would you look in?
- Does this song or music make you think of a particular country or culture?
- Do you have an idea about who the composer might be?
- If you were watching this piece at a concert, how many people do you think would be on stage?
- If this music was used in a movie, what would be happening in the scene?
- Does the music have mostly high or low sounds?
- Have you heard music similar to this piece before?
- What instruments do you hear?
- If you were going to use this piece in a commercial, what product would you be selling?
- Do you think you have heard this music before? Where?
- What colors would you choose to represent the music?
- Is there a steady beat?
- Fast or slow?