

NOTABLE NUMBERS

PATTERNS + FORMS IN MUSIC



CHARLOTTE
SYMPHONY

CHRISTOPHER WARREN-GREEN
music director

Notable Numbers: Patterns and Forms in Music

Aram **KHACHATURIAN**

Sabre Dance from *Gayane*

Ludwig van **BEETHOVEN**

Allegro con brio from *Symphony No. 5, Op. 67*

Johann Sebastian **BACH**

Allegro from *Violin Concerto in E Major, BWV 1042*

Aaron **COPLAND**

Variations on a Shaker Melody from *Appalachian Spring*

Carl **ORFF**

Tanz from *Carmina Burana*

Duke **ELLINGTON** / arr. Herman

Duke Ellington Fantasy

Igor **STRAVINSKY**

Berceuse and Finale from *Firebird Suite*

HOW TO USE THIS STUDY GUIDE

This guide is designed as a curriculum enhancement resource primarily for music teachers, but is also available for use by classroom teachers, parents, and students. The main intent is to aid instructors in their own lesson preparation, so most of the language and information is geared towards the adult, and not the student. It is not expected that all the information given will be used or that all activities are applicable to all settings. Teachers and/or parents can choose the elements that best meet the specific needs of their individual situations. Our hope is that the information will be useful, spark ideas, and make connections.

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CREDITS

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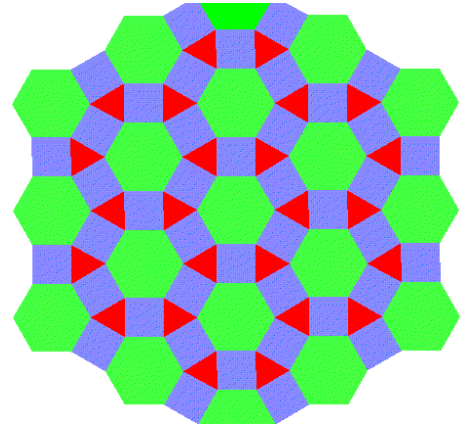
CSO EDUCATION & COMMUNITY ENGAGEMENT DEPARTMENT

Chris Stonnell, Director of Education & Community Engagement
Heather Münch, School & Community Programs Manager

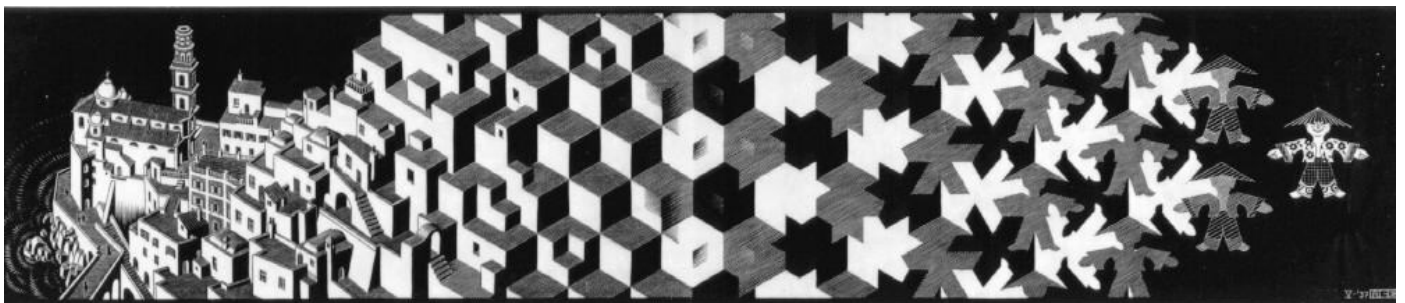
Music and Math

Music is organized sound, tones arranged into patterns and put into motion through time. In this regard it reflects a basic element of existence for patterns permeate life. You can see patterns everywhere: in the symmetry of snowflakes, in the fractal shape of tree branches, in the bilateral symmetry of our bodies, in the formation of birds migrating or the rhythm of the tides. Music and math share this fundamental element as math is all about patterns and the very structure of music is mathematical. The fundamentals of music, rhythms, measure, and pitch are based on mathematical principles, durations, counting, and proportion. Both music and math are made of patterns involving repetitions, sequences, and transformations. Both involve symmetry, asymmetry, balance and imbalance, tension and resolution. They are both languages involving symbols. Math gives music its shape and direction while systems of harmony and counterpoint, based on pitch proportion and tonal relationships, are tools for elaborate musical explorations that have allowed Western music over the centuries to become its own message.

Traditionally music served a function: ritual, dance, song, worship, and celebration. However, over centuries, Western music became disconnected from its functions and developed independently, existing for its own sake. One of the ways music and math differ is in music's sensual presence; math is analytical while music is sensual. Although music is created using mathematical devices, its message goes far beyond structure, and yet it is impossible to separate the substance from the form for its form becomes its substance and resonates beyond a mere sequence of pitches or rhythm patterns, retrogrades or inversions, chordal accompaniment or tempi. Music is a mysterious relationship of quantifiable elements whose power and effects are not quantifiable. However, by studying and learning about these relationships, we can hear music in a more complete way. We can become a more fully engaged listener while still responding to the immediacy of its sensual beauty.

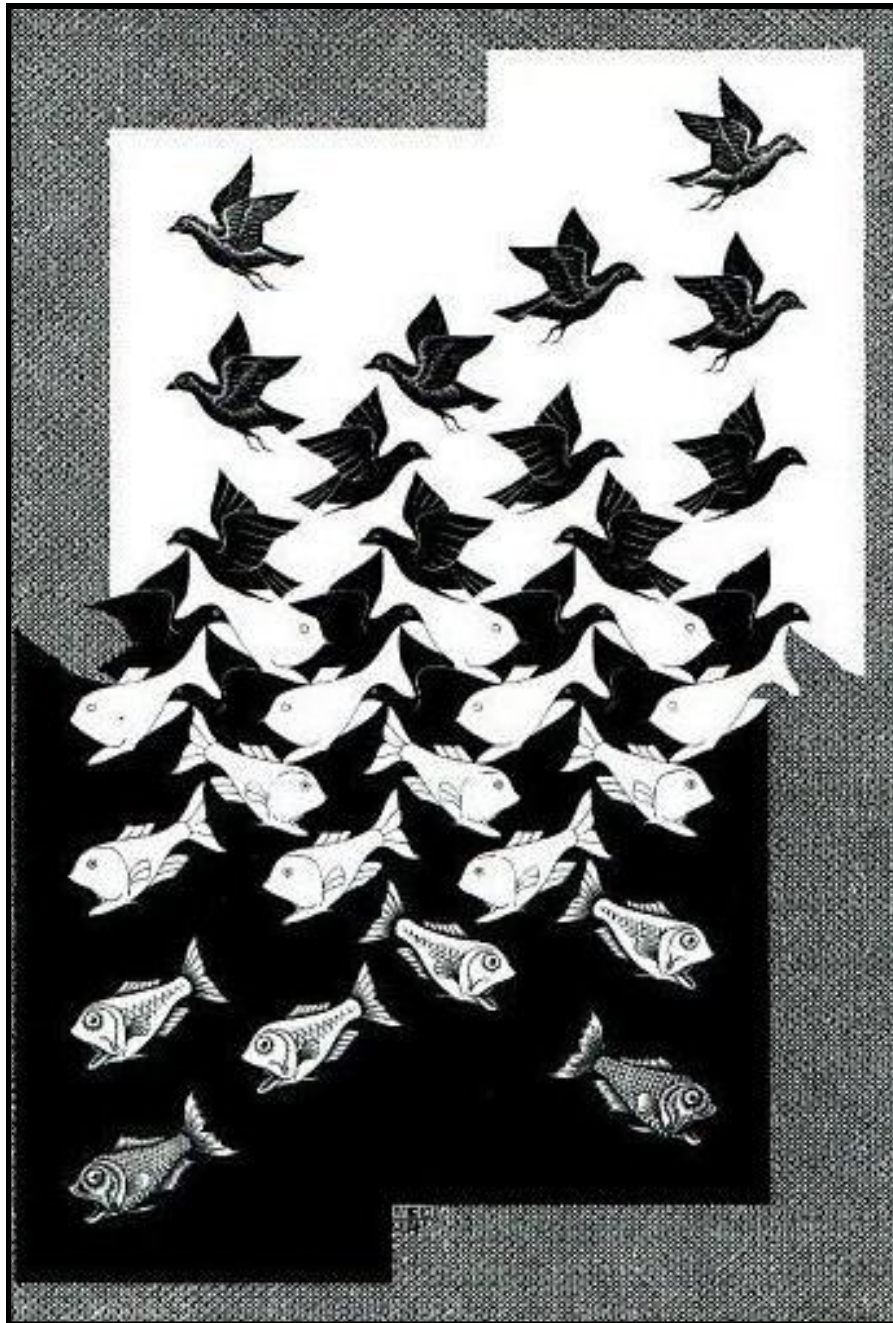


Both music and math incorporate precision, measurement, proportion and dimension. Mathematics is a means of ordering the universe. At one time it was thought by Greek philosophers that life was based on “mathematico-music” principles. To Pythagoras music was an expression of universal order and he actually initiated the concept that music was a branch of mathematics. The eventuality that musical intervals are expressed as mathematical ratios was based on Pythagorean theories of tuning. Music is a means of making sense of the world. It is imbued with infinite interpretative possibilities but is brought into being through precise applications and embodies a basic duality of experience: the fully explained combined with the inexplicable. Both math and music are grand structures built out of small details. Music creates a relationship where the observer and the observed are inseparable. However, while understanding musical structure can lead to greater appreciation, to focus solely on its structure would be to lose music's vitality and soul. Throughout our exploration of the unique relationship of music and math, we are to be reminded always of the inexpressible yet tangible power and beauty of music.



M.C. Escher, *Metamorphosis I* (1937)

PROGRAM NOTES



M.C. Escher, *Sky and Water II* (1938)

ARAM KHACHATURIAN

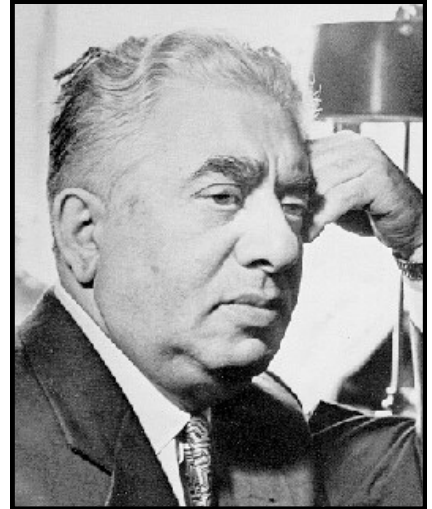
Born in Tbilisi, Georgia (Russia) 1903

Died in Moscow, Russia 1978

Sabre Dance from *Gayane*

Composed between 1939 and 1941

Khachaturian was born in Tbilisi, Georgia, Russia on June 6, 1903. He was a son of a poor Armenian family. In his youth he was greatly interested in music he heard around him, not only that of Armenia, but also of Georgia and Azerbaijan. Despite his interest, he did not study music or even learn to read it; and apart from listening, his sole experience of it was playing of simple bass parts on the tuba in his school band. Gradually, he became convinced that he was cut out to be a musician and eventually turned up in Moscow seeking admission to the school of music, even though he did not speak Russian and knew he would have to make up for lost time in his musical education.



How little Khachaturian knew about his chosen subject can be well illustrated. When asked, he did not know what type of music he wanted to study, but he decided to study cello, which he did for 3 years, after which he enrolled in a composition class. He had finally found his niche, and had a composition published within a year, which gained him entrance into the Moscow Conservatory. By the time he had completed his studies in 1933, he was 30.



Khachaturian at his piano

The composer's first large-scale work employing a full orchestra was his First Symphony (1934). At the time this was highly praised, but later works have shown it to be somewhat immature. Besides his national heritage of Armenian folk music, he pulled from other folk traditions of Georgia, Russia, Turkey, and Azerbaijan. Khachaturian's international reputation really began with his Piano Concerto (1937) and it was cemented by the Violin Concerto (1940 written) and frequently performed.

Khachaturian was enthusiastic about communism. In 1920, when Armenia was declared a Soviet republic, Khachaturian joined a propaganda train touring Armenia comprised of Georgian-Armenian artists. The composer joined the Communist Party of the Soviet Union in 1943. His communist ideals, along with his Armenian nationalism, are apparent in his works, especially in *Gayane*. It was the Symphonic Poem, later titled the Third Symphony, that earned Khachaturian the wrath of the Party. Ironically, Khachaturian wrote the work as a tribute to communism, but perhaps because he did not include a dedication or program notes, his intentions backfired. Andrei Zhdanov, secretary of the Communist Party's Central Committee, delivered the so-called Zhdanov decree in 1948. The decree condemned Shostakovich, Prokofiev, Khachaturian, and other Soviet composers as "formalist" and "antipopular." All three accused composers were forced to apologize publicly. The decree affected Khachaturian profoundly.

He concentrated on film music in the coming years and took up conducting and teaching at the Conservatory. His career represents the Soviet model of the linking of regional folklorism with the central Russian tradition, his Armenian heritage is clear in his melodies and his vitality but in disciplined form. His greatest strengths lie in colorful orchestration and effective pictorialism. His entire background is imbued with its folk music and folklore. One particular aspect of Armenian music is worthy of special note and does much to explain the colorful nature of Khachaturian's music. To the Armenian peasant and folk musician certain 7th chords are concords while the normal major or minor triad is a discord. He brought the harmonic sense of the untaught Armenian into art music, and he added a new element and approach.

Khachaturian died on May 1, 1978 in Moscow, Russia.

Sabre Dance

The Sabre Dance is a movement in the final act of the ballet called *Gayane*, which was completed in 1942. It evokes a whirling war dance in an Armenian dance, where the dancers display their skill using sabres. Due to its exceptionally exciting rhythm, the Sabre Dance established a place for itself in common concert practice, leading also to various adaptations in popular music. Famously used as the theme to the silent film series and other human tricks innovators, this music highly contributed to the movement's popularity in the United States. Sabre Dance has traditionally been used by traveling circuses around the world to musically accompany acrobats, dog acts, etc. The tune is frequently featured on TV series to emphasize fast part of some situation or during an activity containing sort of acrobatic skills.



Dancers performing in *Gayane*

Form

By combining melodic and rhythmic patterns inherent in a piece of music, an even larger pattern can be created. These larger patterns are called form. Form is the overall structure of a composition. For example, a song like "Row, Row, Row Your Boat" can be layered to create almost a domino-like effect. In music, this type of form is called a canon. Other songs that can be sung as a canon are "Three Blind Mice" and "Frère Jacques".

One way composers organize a musical work is to create a main theme that is repeated throughout. The composer can then add in one or more contrasting themes to compliment the main one. When analyzing these works, letters are assigned to each different theme. When a theme is repeated, so is the original letter assigned to it. Thus the original theme will be given the letter "A", and the first different theme is given the letter "B", and so forth. When completed, the succession of letters gives us the form of the piece. Pieces with two unrepeated themes are called "binary form" and are written as AB. In many pieces, the A section is repeated again after a B section. This type of form is called "ternary form" or ABA form. For example, "Twinkle, Twinkle, Little Star" is in ABA form.

The A-section:

A

Twin-kle twin-kle litt - le star how I won - der what you are.

The B- section:

B

Up a - bove the world so high, like a dia-mond in the sky

The A section is then repeated:

A

Twin-kle twin-kle litt - le star how I won - der what you are.

Notice how the notes and lyrics in the two A sections are identical, and how the notes and lyrics in the B section are different.

Other common forms are AABB, or ABACADA which is called rondo form. A rondo has a recurring theme (A section) that is repeated amidst numerous contrasting sections.

Bridge and Coda

In addition to sections that are labeled alphabetically, composers sometimes also include musical passages called a “bridge” and a “coda”. A bridge is an interlude that connects two parts of that song, building a harmonic connection between those parts. The bridge is almost always a new melody and it usually leads into a return of the A section. In popular song structure, the bridge is a section that connects two sections of the refrain or “chorus”. A lot of times, the bridge is used to transition from one key to another, so that the final refrain is repeated in a new key than the previous occurrence.

A coda is a section that is added to the closing few measures of a composition. It is usually not a part of the main theme groups, but is a finishing theme added to the end to give the composition closure.

In Khachaturian’s *Sabre Dance*, the form is ABA with a bridge and a coda. As you listen to the piece, follow along with the Listening Map included below:

Listening Map:

- **Section A:** Sabre Dance theme heard 4 times, the last 2 times are a 3rd higher.
- **Section B:** Woodwind solo punctuated by timpani
- **Bridge:** Xylophone plays a repeated pattern. There are several trombone glissandos (sliding up and down the musical scale rapidly)
- **Section A:** The second repetition of Sabre Dance theme is interrupted by a cymbal crash. The third repetition is higher.
- **Coda:** Descending line, followed by an ascent that moves toward the final note.

Aram Khachaturian 1903-1978

Procedures:

1. Share historical information on Khachaturian’s life and importance in music history.
2. Discover and discuss world events that were happening during Khachaturian’s life.
3. Discuss the use of patterns and syncopation in Khachaturian’s music.
4. Discuss what form is, and the various different types: binary, tertiary, canon, etc.
5. Discuss bridge and coda
6. Share the listening map with the students.
7. Discuss tempo, dynamics, and instrumentation.

Curricular Extensions:

Math

Discuss musical form and how separate musical sections are assigned letter values which determine the structure of the overall piece. Why are sections that have the same melody assigned the same letters? Compare these concepts to math. Discuss with students how musical form is a way to organize patterns. Sections that are identical are assigned the same value, much like variables in algebra. Use different geometrical shapes or different colored math blocks to represent each section. Have students identify the particular form by the pattern of the shapes. For example, one blue block + one red block+ one blue block would equal ABA or tertiary form.

Music

Teach students a canon such as “Row, Row, Row Your Boat”, “Frère Jacques”, or “Three Blind Mice”. Have them all sing the song in unison until they are all comfortable with the melody. Divide the class into two groups. Have them sing the song as a round with the first group starting one measure before the other. Once they master this, try dividing them into more and more groups. See how many different groups you can get singing at once without failing to finish correctly!

To create binary and ternary patterns, teach the students the melodies to the other two songs. Sing “Row, Row” and “Three Blind Mice” back to back. Explain to them that if this were one complete song that it would be in binary (AB) form.

***Row, Row* —> *Three Blind Mice* = AB form**

Next, sing the two songs back to back again, except add on a reprise of “Row, Row” at the end. This will give you an ABA or ternary form.

***Row, Row* —> *Three Blind Mice* —> *Row, Row* = ABA form**

Now add in “Frère Jacques” before the final section of “Row, Row”. You will now have ABCA form.

***Row, Row* —> *Three Blind Mice* —> *Frère Jacques* —> *Row, Row* = ABCA form**

Experiment with a variety of forms for the three pieces. Use the three songs to create a rondo. Have students listen and identify them. As in the math extension, use colors or shapes or math blocks to create visual patterns.

Teach students about popular song structure and play for them examples that have verses, choruses, bridges, and codas. Teach them that we could assign letters to verses and choruses like A, B, etc. and write their form out that way as well. Have students listen to several songs and try to determine their form, looking for verses (A sections), choruses (B sections), bridges, and codas.

Composition

A ballet tells a story using dance and music. The ballet *Gayane* tells about men who try to steal from some farmers. The farmers find out about the robbers and catch them. Because the farmers are happy, they dance the Sabre Dance. Have the students identify the repeated patterns and the syncopation in this piece. Have the students compose a short 4-measure composition using repeated patterns. Then the students will perform for each other. Then eventually have the students put these repeated patterns on various instruments. Then have the students identify syncopation patterns in the piece. Write some examples on the board of repeated patterns with syncopation in them. Have the students write some of their own patterns using repeated patterns with syncopation. The students will eventually put these patterns on various instruments of their choosing.

Language Arts:

Help the students distinguish between historical and musical facts about the Sabre Dance and individual opinions about the piece. Ask the students if everyone has the same likes and dislikes. Have the students explore their responses by asking how many of them like the same color and guide them to understand that like or dislike of a color is based on individual feelings. Have the students lead a discussion of Sabre Dance asking what feelings they have when they hear the piece. Emphasize that all of the feelings expressed are valid. Ask who the composer of the Sabre Dance is and help children to see that this answer is a fact. Discuss whether Sabre Dance is an exciting piece of music. In their discussion, have the students discuss the instruments, speed of the piece and the shape of the melody.

Social Studies:

- Have the student identify what was going on during Khachaturian’s life time.
- Explore the Soviet Union and how this country became a free country and was renamed Russia.
- Explore what is Communist and how it relates to Khachaturian and his music.

LUDWIG VAN BEETHOVEN

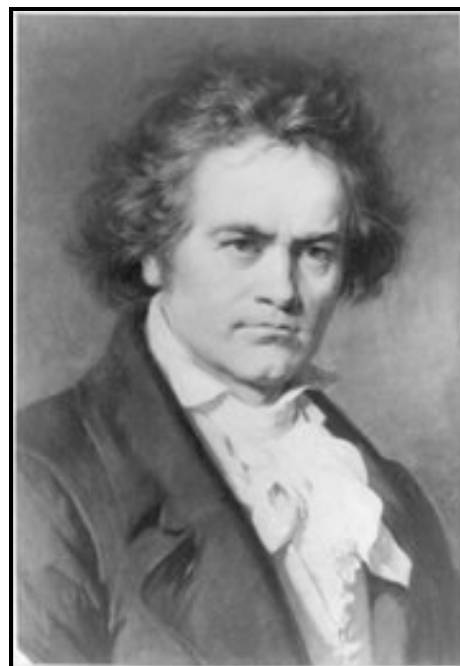
Born in Bonn, Germany 1770

Died in Vienna, Austria 1827

Allegro con brio from **Symphony No. 5, Op. 67**

Composed between 1804 and 1808

Ludwig van Beethoven was considered to be one of the most influential composers in the history of Western music. He was born in Bonn, Germany in December of 1770 and grew up in court surroundings where he began his musical training at a very early age under the tutelage of his father. After the age of eight he took lessons from court organist Christian Gottlob Neefe, who nurtured Beethoven's talent. Beethoven had a difficult childhood. His father was harsh and demanding. Following Beethoven's mother's death, his father lost his job and Beethoven was put in the position of having to support his family. He played viola in the theater orchestra, gave lessons, and played the piano. By this time, he was composing piano works and beginning to attract attention. In 1790 Joseph Haydn passed through Bonn enroute to London when he heard Beethoven's new *Mass* and was greatly impressed. On his return to Vienna, Haydn again stopped at Bonn and met Beethoven personally at which time he invited the young composer to study with him. Beethoven moved to Vienna in 1792 and became a pupil of Haydn's, but only for a short time as he found the older composer to be too academic. In his late twenties Beethoven began to notice signs that he was going deaf. He gave up performing in public, but he continued to produce notable masterpieces despite this challenge, in fact his music began to show a deepening of spiritual content. It was at this time that he produced such masterpieces as the *Waldstein*, *Appassionata*, and *Moonlight* sonatas for piano, as well as the *Eroica Symphony*. In 1818 Beethoven entered his last productive period, which was perhaps the greatest of all, composing works such as the *Ninth Symphony*, the *Missa Solemnis* and the last string quartets. On May 7, 1824, Beethoven made his final public appearance to conduct the premiere of his *Ninth Symphony*. By this time, he was completely deaf; when the Symphony ended, Beethoven, who was several measures off, continued conducting, even as the audience applauded. In 1826, while visiting his brother, Beethoven contracted a cold, which developed into pneumonia; he died on March 26.



Because of the time during which Beethoven lived, the end of the 18th and the beginning of the 19th centuries, he was positioned between two major aesthetic movements: classicism and romanticism, both of which were responses to the Age of Reason and the Enlightenment. His music represents a transition from classical courtly forms wherein balance and purity of expression were honored to romantic revolutionary forms where individual and freer modes of expression were sought after. In this era of transition his music is considered the "bridge" between these two important movements. Beethoven broke away from classical form and style and ventured into dissonance and free tonality. He used a musical language that was daring for its modulations, progressions and harmonic vocabulary, and his thematic material was immensely varied and fertile. He greatly extended principles of sonata form and motivic development that he had inherited from Haydn and Mozart, writing lengthier, more ambitious movements. Beethoven also redefined the symphony, transforming it from the highly structured, four movements form of Haydn's era to a looser open ended form that would accommodate or employ as many movements as necessary to give the work cohesion.

Beethoven was a product of his time, a time of revolution and change in Europe, the Americas and elsewhere, that championed the rights of the individual and democratic ideals. In line with this, he believed in individual expression and making art accessible to the common man. These beliefs took him away from working in churches or in a noble court as his predecessors had done; instead he took the initiative to support himself through a combination of means, garnering income from stipends or gifts from individuals, public performances, concerts, lessons, and sales of his works. In this way he was the precursor of the professional composer of today.

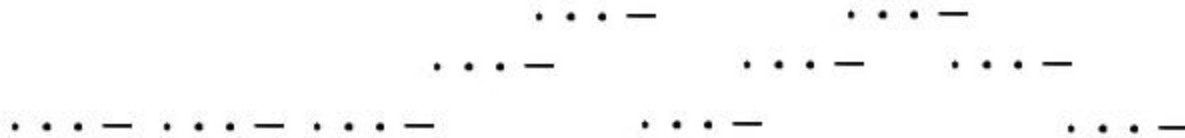
Symphony No. 5, Op. 67

Beethoven wrote the Symphony over the space of some four years, beginning in the spring of 1804. The Symphony was premiered later that year together with the Sixth at Beethoven's famous marathon concert at Vienna's Theater on December 22. Reports indicate that all did not go well. Second-rate musicians playing in third-rate conditions after limited rehearsal had to struggle their way through this demanding new music, and things fell apart. But inadequate performance conditions did not dampen enthusiasm for the Fifth Symphony, which was soon recognized as a masterpiece.

Another reason for the great fame and popularity of this Symphony is that it distills so much of Beethoven's musical style. One feature is its "organicism" the fact that all four movements seem to grow from seeds sown in the opening measures. While Beethoven used the distinctive rhythmic figure of the three shorts and a long in other works from this time, it clearly helps to unify the entire Symphony. After the most familiar of openings, the piece modulates to the relative major key and the horns announce the second theme with a fanfare using the same rhythm. Beethoven's innovation is not simply that this brief passage may mean something, but that listeners are prompted in the first place to ask themselves what it means.

Motifs, Morse Code, and Melody

Beethoven built the first movement of his symphony No.5 around a rhythmic motif: short-short-short-long. This motif is the building block for the whole movement. For example the beginning looks like this:



Morse code is another language that uses short and long sounds as a means of communication. Before the modern technology, messages were transmitted via electric telegraph. In Morse, short sounds are called "dit" and long sounds are called "dah" (a dah lasts three dits). Between letters of words there is a silence of three dits. Between words there is a silence of seven dits.

If we transcribe the Symphony No. 5 motif to Morse Code, which would be "dit-dit-dit-dah", it would represent the letter "V". During World War I and World War II the United States and its allies used this motif as a victory piece (V is for Victory).

Music is not only made of rhythm but also of melody. Melody is a succession of sounds, or pitches, assigned to a particular rhythm. Morse Code is not "music" per se because there is no melody, only rhythm. Melody is made of high sounds and low sounds and in Symphony No. 5 the long sound of the motif is lower than the three short sounds.

If we look at the music we can see that Beethoven's motif moves in thirds. A more specific way to show this is to graph the piece as such:

Pitch							
G	■	■	■				
G _b	■	■	■				
F	■	■	■		■	■	■
E	■	■	■		■	■	■
E _b	■	■	■	■	■	■	
D	■	■	■	■	■	■	■
D _b	■	■	■	■	■	■	■
C	■	■	■	■	■	■	■

Morse Code Alphabet and Numbers

A . -	J . - - - -	S	2 . . - - - -
B -	K - . . -	T -	3 . . . - -
C - . - . .	L	U . . -	4 -
D - . . .	M - - -	V . . . -	5
E .	N - .	W . - - -	6 -
F . . - . .	O - - - -	X - . . -	7 - -
G - - . .	P . - . . .	Y - . - - -	8 - - - . . .
H	Q - - - . -	Z - - . . .	9 - - -
I . . .	R . . - .	1 . - - - - -	0 - - - - - .

Lesson — Allegro con brio from Symphony No. 5 Op. 67

Ludwig van Beethoven (1770-1827)

Materials

Recording of **Allegro con brio** from **Symphony No. 5 Op. 67**
Chart of Morse Code Alphabet
Instruments (optional)

Procedures:

1. Share historical information on Beethoven life and importance in music history.
2. Discover and discuss world events that were happening during Beethoven's life.
3. Discuss the development of the famous 4 note motive and how it is used throughout the entire first movement of the symphony.
4. Share the listening map with the students.
5. Discuss tempo, dynamics, and instrumentation of the 4 note motive.
6. Discuss how the motif relates to Morse code.
7. Have students compose their own motifs.

Listening Map

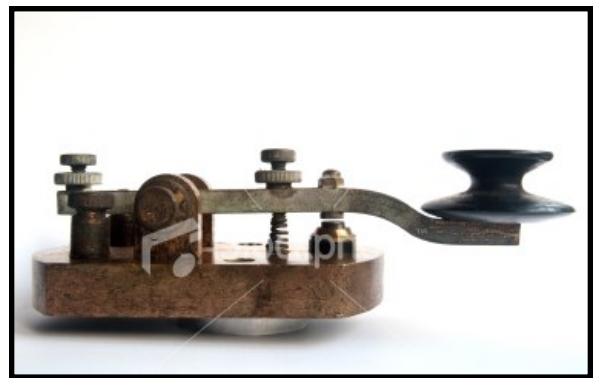
A symphony is a long composition for orchestra usually with three or four movements. To achieve a variety of sounds, composers strive to make each movement different by changing the mood, tempo, or style. Beethoven wrote nine symphonies. His greatest and most famous is the Symphony No. 5 in C minor. The first movement is in the traditional sonata form Beethoven inherited from his classical predecessors, Haydn and Mozart (in which the main ideas that are introduced in the first few pages undergo elaborate development through many keys, with a dramatic return to the opening section- the recapitulation about $\frac{3}{4}$ of the way through). It starts out with two dramatic fortissimo phrases, the famous motif, commanding the listener's attention. Following the first four bars, Beethoven uses imitations and sequences to expand the theme, these imitations tumbling over each other with such rhythmic regularity that they appear to form a single, flowing melody. Shortly after, a very short fortissimo bridge, played by the horns, takes place before a second theme is introduced. This second theme is in E flat major, the relative major, and it is more lyrical, written piano and featuring the four note motif in the string accompaniment. The codetta is again based on the four note motif. The development section follows, using the modulation, sequences and imitation, and including the bridge. After the recapitulation, there is a brief solo passage for oboe in improvisatory style, and the movement ends with a massive coda.

Curricular Extensions:

Composition / Mathematics:

Have students write their names in Morse Code (using the chart on the previous page). Have them speak aloud their names as if transmitted in code by using the dit and dah language. Be sure to remind them of the silence that occurs between letters and words. Next have them play their names on an instrument.

Have students choose the first letter of their name as written in Morse code, an interval, and a starting note and create a composition that imitates the fifth symphony. Have the students put their compositions in different intervals. Then have the students put their compositions on a graph. Have the students perform their compositions on various instruments.



Morse Code Telegraph Machine

Language Arts:

In 1806, Beethoven completed the fifth symphony where the famous four-note motif is played throughout. He described the motif as fate knocking at the door. Beethoven had an eccentric (unusual) personality. Have the students write about why do you think Beethoven was that way? Do you think that geniuses are always eccentric? If so, why?

A crisis erupted in 1802. For some years, Beethoven had been plagued by strange buzzing noises in his ears which doctors had been unable to treat. Finally, the composer was forced to face the terrible truth that he was going deaf. Imagine for a few minutes what it would be like to be deaf. (You may put your fingers in your ears to find out). What is it like? Would you be able to sing songs or play the piano if you were deaf? Find some ways to experience music without using your sense of hearing.

Social Studies:

From 1789 to 1815 Europe was in a constant state of turmoil. Have the students identify what was going on during this period. Have them create a time-line of events taking place in Europe and the United States during Beethoven's lifetime. Have the students research how the ideals of the French Revolution and the American Revolution (democracy, individual rights, equality, the rule of the law) influenced Beethoven's thinking and his music.

JOHANN SEBASTIAN BACH

Born in Eisenach, Thuringia (Germany) 1685

Died in Leipzig, Germany 1750

Allegro from Violin Concerto in E major, BWV 1042

Composed in 1717



Born into a musical family, Bach received his earliest instruction from his father. After his father's death in 1695, Bach lived and studied organ and harpsichord with his older brother Johann Christoph, a church organist. Bach started singing as a boy soprano in a church choir and later became a violinist in a church orchestra. From that moment on and for virtually his entire life, Bach would be employed as a church musician.

At age 18, Bach's first permanent position was as organist in Arnstadt (1703-1707) and later in Mühlhausen (1707-1708). During these years, he performed, composed taught, and developed an interest in organ building. Bach married in 1707 and soon thereafter was appointed court organist and violinist to the Duke of Weimar. Bach worked for the Duke from 1708-1717, first as court organist, and after 1714, as concertmaster. During this period, he composed many of his best organ compositions; in his capacity as concertmaster, he was also expected to produce a cantata each month. In Weimar, Bach's style was influenced by his study of numerous Italian compositions (especially Vivaldi concertos).

Bach's next position, as Music Director for the Prince Leopold of Cöthen (1717-1723), involved entirely different activities. Since the court chapel was Calvinist, there was no need for church compositions; Bach probably used the Cöthen organs only for teaching and practice. His new works were primarily for instrumental solo or ensemble, to be used as court entertainment or for instruction. Among the important compositions at Cöthen were the Brandenburg Concertos, the first volume of *The Well-Tempered Clavier*, the "French" and "English" Suites for harpsichord, and most of the sonatas and suites for other instruments. His wife, Maria, suddenly died in 1720, and a year later he married Anna Wülken, who was an established singer.

Bach remained in Cöthen until 1723, when the Prince's new wife decided she preferred less serious music than what Bach composed. Thus, Bach moved to Leipzig and was appointed cantor at the St. Thomas Church and School, and Director of Music for Leipzig, positions which he retained for the rest of his career. His official duties included the responsibility of overseeing the music in the four principal churches of the city, and organizing other musical events sponsored by the municipal council. For these performances, he used pupils from the St. Thomas School, the city's professional musicians, and university students. Bach was never totally happy in the position with the school, but it did provide education for his children. During his first six years in Leipzig (1723-1729), Bach's most impressive compositions were his sacred cantatas (four yearly cycles), and the St. John and St. Matthew Passions. Bach apparently gave virtuoso organ recitals in Leipzig and on various tours, although he had no official position as organist in Leipzig.

After 1729 Bach no longer concentrated so completely on composing sacred vocal music. In 1729-1737 and 1739-1741, he was director of the Leipzig Collegium Musicum, an organization which had been founded by Telemann in 1704. This group of professional musicians and university students performed weekly concerts. Although no specific programs for these concerts have survived, Bach apparently revived many of his instrumental compositions from Cöthen, wrote new works, and conducted pieces by other composers. During the 1730s, Bach renewed his interest in keyboard compositions, and prepared the first three volumes of his *Clavier-Übung* (Keyboard Practice) for publication (1731, 1735, 1739); the fourth volume appeared in 1741-1742. In the 1730s, he also showed considerable interest in the royal court at Dresden, and was named court-composer in Dresden in 1736.

During Bach's last decade, he completed or revised several large-scale projects which he had started earlier. *The Well-Tempered Clavier*, Vol. II; a manuscript collection of chorale preludes, and the B minor Mass. Other new works showed an increased interest in fugal and canonic writing: *Musikalisches Opfer* (Musical Offering); the canonic variations for organ on "Vom Himmel hoch"; and *Die Kunst der Fuge* (The Art of Fugue). In the 1740s, Bach made various journeys, most notably to the court of Frederick the Great in 1747. He continued a lively interest in the building of organs, and kept informed about the latest developments in the construction of harpsichords and pianofortes. Bach died in 1750, at the age of 65.

Violin Concerto in E Major, BWV 1042

Bach wrote the Violin Concerto in E in Cothen, Germany in the years between 1713-1723 when he was the court musician for Prince Leopold. He wrote very few solo concertos, and the Violin Concerto in E is one of four that still exist in original compositional form. Most of Bach's orchestral music leans toward the Italian style of the Baroque, the music from his Cothen period sounds more French in nature. The French style was more dramatic and had thicker textures in the harmonies of the accompanying orchestra.

The concerto uses many compositional techniques that were used in the Baroque period. The introduction of a short musical idea or theme, and then the composer elaborates on the themes to compose the work. Some of these techniques are sequencing, inversion, and retrograde. These devices are discussed further below.

The Concerto is written in 3 movements

1. Allegro
2. Adagio e sempre piano
3. Allegro

It is scored for solo violin, first and second violins, viola, and continuo (harpsichord).

Counterpoint

In music, counterpoint is the relationship between two or more voices that are independent in contour and rhythm, and interdependent in harmony. Counterpoint and polyphony are essentially the same concept, with each voice being its own independent melody.

Counterpoint was used extensively in the Renaissance period, but composers of the Baroque period brought counterpoint to a new level. Johann Sebastian Bach wrote most of his music incorporating counterpoint, and explicitly and systematically explored the full range of contrapuntal possibilities.

After the Baroque Era, harmony took over as the predominant organizing principle in musical composition, and from then on homophonic music became the norm. Homophony means that the main theme or melody is performed by one voice and all of the other voices are used to offer harmonic support.

Contrapuntal Devices

There are a number of devices that composers use when writing in a contrapuntal style. In each of these devices the composer takes a melody or a fragment of a melody and transforms it in some way. This is done in order to give their work both mathematical rigor and expressive range. Some of these devices include:

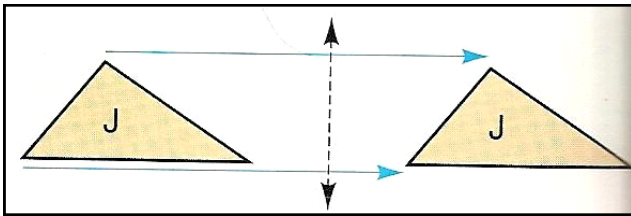
- **Sequence:** is when a melody or fragment of a melody is restated either on a new pitch level or with the original notes.
- **Inversion:** The inverse of a given fragment of melody is the fragment turned upside down—so if the original fragment has a rising major third, the inverted fragment has a falling major (or perhaps minor) third, etc.
- **Retrograde** refers to the contrapuntal device whereby notes in an imitative voice sound backwards in relation to their order in the original.
- **Retrograde inversion** is where the imitative voice sounds notes both backwards and upside down.
- **Augmentation** is when in one of the parts in imitative counterpoint the notes are extended in duration compared to the rate at which they were sounded when introduced.
- **Diminution** is when in one of the parts in imitative counterpoint the notes are reduced in duration compared to the rate at which they were sounded when introduced.

Mathematical Transformations

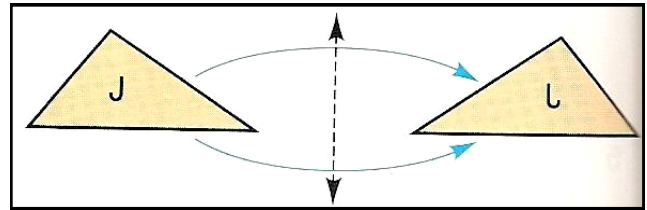
Just as a composer takes a melody and transforms it using various contrapuntal devices, in math, we can apply similar transformations to geometric shapes. In geometry, a transformation occurs when the position of a shape on a plane is changed. What this means is that a shape is moving from one place to another. The relation between the shape's original position and its new position is determined by what type of transformation technique is administered.

Some common techniques are:

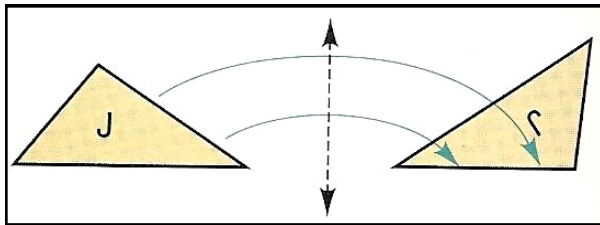
- **Slide:** is when a shape is moved across a line.



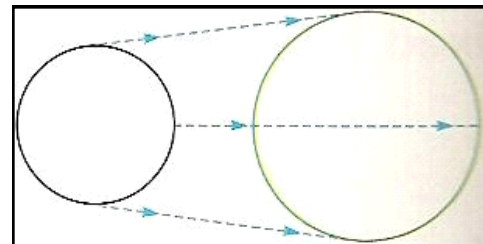
- **Flip:** is when a shape is reflected across a line. When an object is flipped, you see its mirror image.



- **Turn:** is when a shape is rotated around a point or line. This could cause a shape to be turned upside down.



- **Scale:** is when the size of an object is enlarged or diminished.



Mathematical Transformations vs. Contrapuntal Devices

There are parallels between contrapuntal devices and types of mathematical transformations. Many of the methods employed in each are alike in music and in geometry. For example:

- A Slide is very similar to a Sequence. In a slide, an object is repeated by sliding it across a plane. It is not inverted or reflected, and still looks identical. In a sequence, the melody is repeated in its original form, or it is "slid" to a different pitch level.
- A Flip is very similar to Retrograde. When you flip an object you get its mirror image — or you see it backwards. In music a retrograde is writing the original melody backwards.
- A Turn is very similar to Inversion. When you turn an object, it is placed upside-down. When a musical phrase is inverted, all of the intervals are turned upside-down.
- If you flip and turn an object it would be similar to Retrograde Inversion, where a melody is inverted and played backwards.
- A Scale is very similar to both Augmentation and Diminution. When you scale an object you either increase or decrease its size. In Augmentation, a melody's rhythmic values are increased, and in Diminution, their values are decreased.

Lesson — Allegro from Violin Concerto in E major, BWV 1042

Johann Sebastian Bach (1685 — 1750)

Objective – to be able to write an inversion, retrograde, sequence in Baroque style

Materials

[Staff paper](#)

Pencil

Recording of Bach Violin Concerto in E Major, BWV 1042

Copy of [Movement 1, from Bach Violin Concerto in E major](#)

Examples of sequencing, inversions, and retrograde

(picked from the first movement of the score of the violin concerto)

Introduction of Lesson

- Explain to the class that they will be listening, writing, and identifying musical compositional techniques of the Baroque period today.
- Have the class listen to the concerto. Tell them to listen for the instruments that are in the concerto. While they are listening, they may move to the beat, move their hands to the contour of the melodies, etc.
- After listening, ask the class which instruments they heard (solo violin, two violins, one viola, continuo—harpichord). Write them on the board.
- Ask if they heard any repeated theme. Ask if they can sing it back. Play a little excerpt from the recording and see they can sing it back.
- Explain to the class they have just identified a sequence.
- Have the class listen again while looking at the score on the overhead. While you follow the score with a pointer. This will give them a better idea of the contour of the piece.

Developing

- Model in the score where a sequence, retrograde and inversion occur. Explain each concept to the students.
- Model in the score how a sequence, a retrograde, and an inversion are written. Point out the examples in the musical score to the students. Ask the class if there are any questions before beginning the exercise.
- Give the students staff paper with a theme that has been sequenced, inverted, and retrograded. Plus one theme that has not been improvised. Have the class work in small groups to write the three compositional techniques. This is not a test, just an exercise to see if they understand the concept
- Circulate around the room to help with any questions the students may have.

Assessment

- After they finish, have a student from each group come to the board and show their work.

AARON COPLAND

Born in Brooklyn, New York 1900

Died in Sleepy Hollow, New York 1990

Variations on a Shaker Melody

Composed in 1944

Copland was born in Brooklyn, New York, of Lithuanian Jewish descent. Before emigrating to the United States Copland's father had anglicized his surname "Kaplan" to "Copland" while in England. Although his parents never encouraged or directly exposed him to music, at the age of fifteen he had already taken an interest in the subject and aspired to be a composer.

After high school, Copland was accepted at a music school for American students in Paris. His teacher was Nadia Boulanger, who later became famous because many of her students became successful composers. When he returned to America in 1924, he decided that he wanted to write works that were "American in character" and thus he chose jazz as the American idiom. However, this jazz-inspired period was brief, as his style evolved toward the goal of writing more accessible works.

During the 1930's, Copland came to believe that a composer should not limit himself by just composing for serious concert performances. He also began incorporating American folk melodies into his music. His most famous works were written during this time, beginning in 1936 with *Billy the Kid*. *Fanfare for the Common Man*, perhaps Copland's most famous work, scored for brass and percussion, was written in 1942. It would later be used to open many Democratic National Conventions. The same year Copland wrote *A Lincoln Portrait* which became popular with a wider audience, leading to a strengthening in his association with American music. He was commissioned to write a ballet, *Appalachian Spring*, which he later arranged as a popular orchestral suite. The commission for *Appalachian Spring* came from Martha Graham, who had requested of Copland merely "music for an American ballet". Copland titled the piece "Music for Martha", having no idea of how she would use it on stage. Graham created a ballet she called *Appalachian Spring*, which was an instant success, and the music acquired the same name. Copland was later awarded the Pulitzer Prize for music for his composition.

Copland was one of the first composers to write music for film, and became an important contributor to the genre. His score for William Wyler's 1949 film, *The Heiress* won an Academy Award. He also composed music for several other important films during that time. Posthumously, his music was used for Spike Lee's 1998 film, *He Got Game*, which featured a neighborhood basketball set to the music of "Hoe-Down". It is difficult to overestimate the influence Copland has had on film music. Virtually every composer who scored for western movies, particularly between 1940 and 1960, was shaped by the style Copland developed.

Having defended the Communist Party USA during the 1936 presidential election, Copland was investigated by the FBI during the red scare of the 1950s, and found himself blacklisted. Because of the political climate of that era, *A Lincoln Portrait* was withdrawn from the 1953 inaugural concert for President Eisenhower. That same year, Copland was called before Congress of the United States where he testified that he was never a communist. Outraged by the accusations, many members of the musical community, held up Copland's music as a banner of his patriotism. The investigations ceased in 1955, and were closed in 1975. Copland was never shown to be a member of the Communist Party.

Copland was active throughout his later life as a teacher and writer on the subject of music. He was also active in several organizations that encouraged young composers by offering performances of their music as well as financial grants; allowing them to focus more time on composing. He was also one of the first composers to take advantage of the new technologies of the 20th century, which included radio broadcasts, recordings, and film.

Copland died of respiratory failure in North Tarrytown, New York (now Sleepy Hollow), on December 2, 1990.



Appalachian Spring

Appalachian Spring is music for a ballet that Copland wrote in 1944. It tells the story of a young pioneer couple in the early 19th Century. The bride and her farmer-husband build a farmhouse in the Pennsylvania hill country. They look ahead to their new life together with hope, joy, and fear. Musical elements depict old neighbors, country fiddlers and square dancing, and various emotions. Toward the end is heard a Shaker tune called "Simple Gifts." The ballet ends quietly and serenely.

Appalachian Spring is divided into eight sections. The seventh section, which is a set of variations on the Shaker melody *Simple Gifts*, is the most recognizable section from the ballet.

The name "Shakers," was derived from the term "Shaking Quakers" and was applied as a mocking description of their rituals of trembling, shouting, dancing, shaking, and singing.

The tune for "Simple Gifts" was written in 1848 by Elder Joseph Brackett while he was at the Shaker community in Maine. It has been classified as a hymn, but it better classified as a dance song. Elder Joseph Brackett was born in Cumberland, Maine, on May 6, 1797. He joined the Shakers when his father helped to form a new Shaker settlement. Later, Joseph served as the first minister of the Maine Shaker society now known as Sabbathday Lake, the last remaining Shaker community. Elder Joseph Brackett died on July 4, 1882.

These are the lyrics to his one verse song:

*'Tis the gift to be simple, 'tis the gift to be free,
'Tis the gift to come down where we ought to be,
And when we find ourselves in the place just right,
'Twill be in the valley of love and delight.
When true simplicity is gain'd,
To bow and to bend we shan't be asham'd,
To turn, turn will be our delight,
Till by turning, turning we come round right.*

Several Shaker manuscripts indicate that this is a "Dancing Song" or a "Quick Dance." That is apparent with such lines of the song as "turn, turn will be our delight" and "turning, turning we come round right". These are dance instructions.



Simple Gifts

Joseph Brackett, Jr., 1848



Simple Gifts in popular culture

The Copland version of the melody was used as the theme music for the CBS News series of documentary specials, CBS Reports, the earliest of which (1959) were hosted by Edward R. Murrow (who was born to a Quaker family).

Musical Form: Theme and Variations

As discussed earlier in the guide, Form is the overall structure of a composition. There are numerous different types of form in music. One form is theme and variations. Theme and variations is a musical form in which the fundamental musical idea, or theme, is repeated in altered form or accompanied in a different manner. A variation is a formal technique where material is altered during repetition; which is reiteration with changes. Changes may be harmonic, melodic, contrapuntal, rhythmic, and of timbre or orchestration. Theme and variations can be used as a solo piece or as movement of a larger piece. Wolfgang Amadeus Mozart composed a famous set of variations for piano based on the melody to "Ah, vous dirai-je, Maman" or better known to us as "Twinkle, Twinkle, Little Star".

Lesson - "Simple Gifts"

Objectives

Sing the Shaker tune "Simple Gifts," and recognize the theme.

Identify 8th, quarter, and half notes in the song.

Locate the treble clef sign.

Work with the 4/4 time signature.

Recall the names of the lines and spaces in music notation.

Listen to *Variations on a Shaker Melody*, and recognize the theme and each subsequent variation.

Materials

Text for "Simple Gifts,"

Music for "Simple Gifts,"

Recording of *Variations on a Shaker Melody*

Procedure

Write the title and text for the song on the board, or place the information on a transparency. Ask a student to read the title of the song to the class. Tell them they will first look at the words of the song, then at the kinds of note values and musical signs they see in the notation of the song, and then they will sing it.

Ask for volunteers to read the text of the song to the class; have each person read a line. Ask them: How many lines are there? (8) Have the 8 people read their lines, and give help if necessary. Tell them this is a Shaker tune, and that the Shakers were a group of people who came to the United States shortly before the Civil War. They were looking for religious freedom. Many people had criticized them for the dancing and movements that went into their kind of worship, for dancing was not a part of most church services. Draw student's attention to the *'Tis*, and tell them it is an old-fashioned way of saying *It is*. Ask them what they think *'Twill* means. (It will.) Tell them that the word *simple* had a special meaning for the religious groups called Quakers and Shakers. In the days when the Shakers and Quakers began their religions in England, many people liked to show off their wealth by dressing up in fancy clothes, and wearing fancy wigs and powdered hair. The people who liked to show how important they were also liked the idea that poor people should bow to those who were rich and important, just the way they would bow to a king or queen. Shakers and Quakers encouraged their people to be *simple*--to dress very plainly and to bow to no one, because everyone was equal. That was part of their idea of freedom. (If students ask about the lines, "When true simplicity is gained, To bow and to bend we shan't be ashamed," tell them that bowing and turning are a part of this dance, because, if all people are simple and equal, then there's nothing wrong with bowing to one another in respect.)

Next, show the song to them, projected on the overhead. Ask the following questions:

- What is the name of the first musical sign you see? (treble clef)
- What are the names of the lines on the staff from bottom to top? (E, G, B, D, F)
- What are the names of the spaces? (F, A, C, E)
- What does the time signature say? (4/4)

- Which are the bar lines that show the divisions between the measures? (vertical lines)
- How many beats are in each measure? (4)
- What kind of note gets one beat? (quarter note)
- How can we tell the difference between the eighth notes and the quarter notes? (quarters are solid black notes with stems; eighth notes have little flags or tails on their stems or are joined by a single horizontal line)
- How many eighth notes = a quarter note? (2)
- How many quarter notes = a half note? (2)
- How many half notes = a whole note? (2)

Go through the piece and have the students call out the names of the notes as you point to them (starting at the beginning, as 8th, 8th, quarter, 8th, 8th, 8th, 8th, 8th, and so on). Try having them read the words in rhythm next, reminding them that the 8th notes will move twice as fast as the quarters. If you clap the first beat of each measure for them, it will be easier for them to stay together.

Finally, model the entire song. Then sing each full sentence (not line, but sentence so they hear each complete musical phrase), and have students echo.

Play Aaron Copland's *Variations on a Shaker Melody* from *Appalachian Spring* for the students. Ask students if they recognize anything of the music they just heard (tune or theme is the same as the song "Simple Gifts, "). Have them sing the song with you, using the overhead so they can see the words and music. Ask students what is different about what you just sang and the music you listened to on the recording? (Accept any answers. The most obvious difference is that one has words and is sung; the other has no words and is played by instruments.) Remind students that this piece was written by Aaron Copland for his ballet *Appalachian Spring*.

Copland's ballet is about a young man and woman who lived in the mountains of Pennsylvania and have invited their neighbors to their wedding celebration. (Show them where the Appalachian Mountains are on the map.) It takes place about a hundred years ago, at a time when all the people living there were farmers, and so the characters in this ballet are dressed as farm people. Ask students: What do you think the male dancers were wearing? (overalls, pants, shirts, maybe bare feet) What do you think the women dancers in *Appalachian Spring* would wear? (simple cotton dresses, quite long and full, maybe hats or bonnets, probably bare feet)

Tell the students you will play it for them again and you want them to listen to the way the composer keeps making little changes to the melody. The first time we hear it, a solo clarinet is playing it. What family is the clarinet? (woodwind) Then we hear it played much lower by cellos. What family is that? (strings) Later the horns play it loud and like a fanfare. The very last time, Copland uses the whole orchestra to play it, and they play it twice as slow as all the other times. Say: While you listen to these different ways the melody sounds, think about what kinds of dance steps might be going on and how they might change as the instruments change.

While they are listening a third time, have the students all spread out around the room and tell them they are to be the dancers this time, and each person can do the dance they think fits the music. Remind them that they can also think about the words they sang to the song, if they wish, and the things those words suggested--such as bow, bend, turn, come down where we ought to be, and turn some more.

In the section containing the tune of "Simple Gifts," the variations are heard as follows:

1. Solo clarinet: State the theme, medium tempo, soft
2. Cellos: Medium tempo, soft
3. Strings
4. Trumpet: Fast tempo, loud, Glissando within the strings, Oboe has part of the theme.
5. Full orchestra: Slow tempo, Drums keep the beat.

Extensions:

Create movements to express the words.

Social Studies—Another part of *Appalachian Spring* incorporates square dance music. Since the Appalachian Mountains are in the state of North Carolina, investigate the effect of this type of music on the culture.

Art—design costumes for the song "Simple Gifts."

CARL ORFF

Born in Munich, Germany 1895

Died in Munich, Germany 1982

Tanz from *Carmina Burana*

Composed in 1937

Carl Orff was born 10 July, 1895 in Munich, Germany to a Bavarian family that was very active in the German military. His earliest inspiration was his mother, Paula, who was a talented pianist.

In 1912, having already published several songs and written an opera, Orff joined the Munich Academy of Music. Although he remained to graduate in 1914, he soon lost patience with the academic approach to music. Orff subscribed to the idea that music should please, and, in the broadest sense, be good for the health. Two things particularly interested him and influenced most of his own work: One was the role of music in education and physical recreation. The other was the part played by music in entertainment through the ages, back to the days of ancient Greek and Roman drama.

Orff's interest in stage music drew him to medieval and Renaissance music, especially the works of Claudio Monteverdi, one of the first great music dramatists. Orff adapted three works by Monteverdi, including the opera *L'Orfeo*, which he reworked many times, while keeping the original instrumentation. It was this fascination with early music and his love of spectacle and theatre that later inspired *Carmina Burana* ('Songs of Beuron').

In 1924 Orff and dance teacher Dorothee Günther set up the Günther School in Munich for the musical education of young women. However, in 1944 the school was closed down by the Nazis. Four years later, a chance broadcast of an early recording of his dance music led to a revival of Orff's methods throughout Germany, and led to a pioneering series of radio broadcasts on music for children. Orff's work with children through Orff Schulwerk began shortly after this.

He remained in Germany through the years of Nazi rule, from 1933 to 1945. In general, the Nazis approved of his music, because it was relatively conservative, it was popular, and it lifted people's spirits. But Orff had been pursuing his own lines of thought long before the Nazis came to power, and he continued working and thinking in much the same way after they had gone. He spent much of his time teaching composition, at home and abroad. In 1950 he was appointed professor of composition at Munich High School for Music, and in 1961 the Orff Institute was founded in Salzburg, providing courses for music teachers.

Carl Orff died in Munich on 29 March, 1982

Pedagogical work

In pedagogical circles Carl Orff is probably best remembered for his *Schulwerk* (1930-35), translated into English as *Music for Children*. Its simple musical instrumentation allowed even untutored child musicians to perform the piece with relative ease. Much of his life Orff worked with children, using music as an educational tool — both melody and rhythm are often determined by the words.

Orff's ideas were developed, together with Gunild Keetman, into a very innovative approach to music education for children, known as the Orff Schulwerk. The term *Schulwerk* is German for "school work". The music is elemental and combines movement, singing, playing and improvisation.



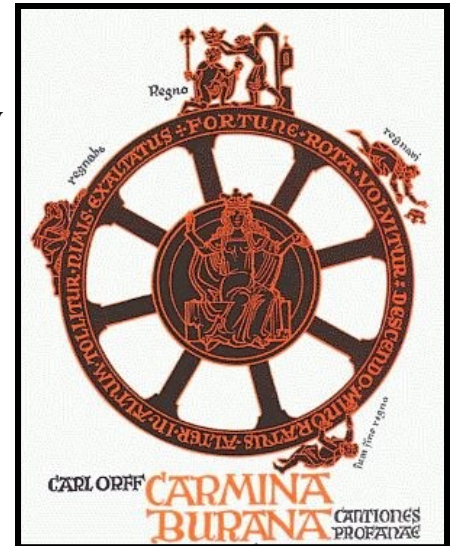
Orff-Schulwerk instruments

Carmina Burana

Carmina Burana originated from a collection of about two hundred medieval songs and poems discovered in 1803 in the library of the Benedictine monastery of Beuron, near Munich. Written by monks and minstrels, the collection appealed to Orff because of the variety of its humorous, sad, and suggestive verses. He selected about twenty featuring the wheel of fortune and arranged them into bawdy songs for soloists and chorus, accompanied by instruments and magic images. While "modern" in some of his compositional techniques, Orff was able to capture the spirit of the medieval period in this trilogy, with infectious rhythms and easy tonalities.

Carmina Burana forms the first part of a trilogy of staged cantatas called *Trionfi* ('Triumphs'), all based on Latin texts. The other two parts are *Catulli Carmina* and *Trionfo di Afrodite*. The first performance, in 1937, was a stylistic breakthrough, and brought Orff instant fame. This piece was popular in Nazi Germany and received numerous performances.

Carmina Burana is scored for 3 flutes and piccolo, 3 oboes and English horn, 3 clarinets and a bass clarinet, 2 bassoons, contrabassoon, 4 horns, 3 trumpets, 3 trombones, tuba, 2 pianos, celesta, a large percussion section, and strings. The percussion section consists of 5 timpani, 3 glockenspiels, xylophone, castanets, ratchet, 3 bells, triangle, antique cymbals, crash cymbals, sleigh bells, suspended cymbal, tam-tam, tubular bells, tambourine, 2 snare drums, and bass drum. The vocal parts include soprano, tenor, and baritone solos, a large mixed choir, and a children's choir. A reduced version for soloists, mixed choir, children's choir, 2 pianos and percussion was prepared by Orff himself, to afford smaller ensembles the opportunity of performing the piece.



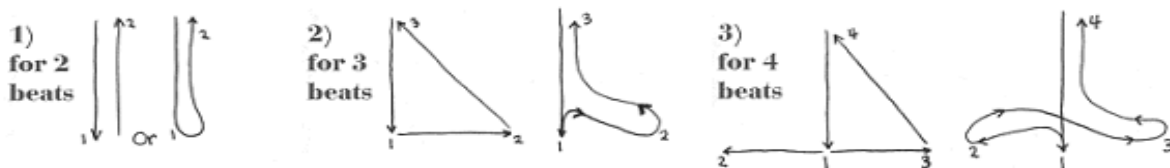
The cover of the score to *Carmina Burana* showing the Wheel of Fortuna

One of the selections within *Carmina Burana* is identified as "Tanz", meaning "dance".

Tanz, an instrumental number, is a vigorous dance propelled by alternating duple and triple meters. Rhythm is often the primary musical element in Orff's work. Overall, *Tanz* sounds rhythmically straightforward and simple, but the meter will change freely from one measure to the next. While the rhythmic arc in a section is taken as a whole, a measure of five may be followed by one of seven, to one of four, and so on. These constant rhythmic changes create a very "conversational" feel – so much so that the rhythmic complexities of the piece are often overlooked.

Meter

Meter is the basic recurrent rhythmic pattern of note values per measure, or the organization of beats into groups. Music groups rhythm in beats. These beats are usually grouped in 2's, 3's, or 4's. A conductor must show the different beats in the group. He or she uses a different pattern to conduct each of these specific groups. See diagram below for an illustration of these patterns:



Usually, the first beat in a group is stronger and louder than the other beats in a group. For instance, look at the patterns below of two series of beats grouped in 4's and then in 3's.

1234 1234 1234 or 123 123 123

Hemiola

A **hemiola** is a metrical pattern in which two bars in simple triple time ($3/2$ or $3/4$ for example) are articulated as if they were three bars in simple duple time ($2/2$ or $2/4$). The pattern below show traditional hemiola; notice how the strong beat changes:

123 456 123 456
12 34 56 12 34 56

The pulse stays constant, and the duration of the beat changes. An example can be found in measures 64 and 65 of this excerpt from the first movement of Wolfgang Amadeus Mozart's *Piano Sonata, K. 332*:

The image shows a musical score excerpt from Mozart's Piano Sonata, K. 332, measures 62-65. The score is in 3/4 time and shows a hemiola pattern in the bass line. The top staff is the treble clef and the bottom staff is the bass clef. The key signature is one flat (B-flat). The hemiola pattern is clearly visible in the bass line, where the notes are grouped in pairs of two beats rather than three.

The effect can clearly be seen in the bottom staff, played by the left hand: the accented beats are those with two notes; hearing this passage, one gets a sensation of "1 2 3, 1 2 3, 1 2, 1 2, 1 2".

Hemiola is found in many Renaissance pieces at areas of cadential repose such as the compositions of Josquin des Prez and Jacob Obrecht.

Hemiolas (in the modern sense) often occur in certain dances, particularly the courante. Composers of classical music who have used the device particularly extensively include Arcangelo Corelli, George Friedrich Handel and most famously in the music of Johannes Brahms (e.g. the opening of Symphony no 3).

"America" from Leonard Bernstein's *West Side Story* is another example of hemiola. However, though "America" does alternate between $6/8$ time and $3/4$ time, this is **not** strictly hemiola. Hemiola is specifically the regrouping of notes in simple triple meter into groups of two beats rather than three.

Lesson — "Tanz" from *Carmina Burana*

Objectives:

Students will aurally and visually recognize meter in 2's, 3's, and 4's.

Students will be able to recognize the use of hemiola

Students will listen to "Tanz" and be able to aurally recognize the use of hemiola

Materials

Printout of the patterns and illustration used in this section

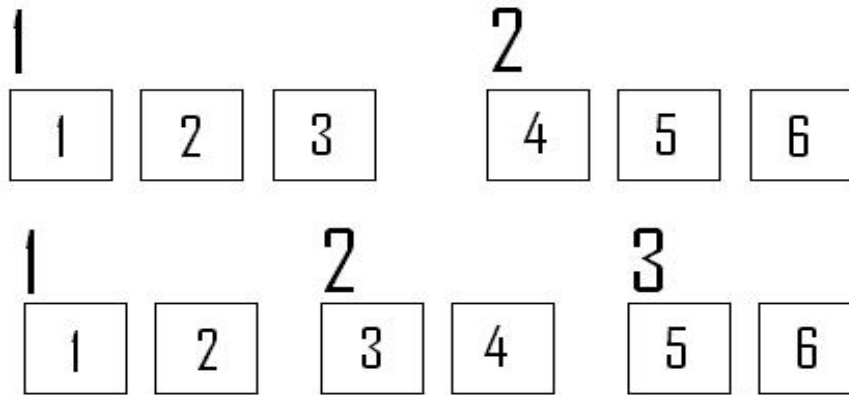
Recording of "Tanz" from *Carmina Burana*

Procedure

Have students see and clap the different metrical patterns (groupings of 2, 3, and 4). Have them speak aloud each of the beats: 1, 2, 3, 4, etc. After the students are able to establish the beat, you may want to vary the activity. For instance, have them accent the first beat in each group by clapping louder, or have them clap on the downbeat and then pat on the off-beats.

Have students identify meter in pieces that are obvious, such as march, waltz, polka, or the “Star-Spangled Banner”. Next, show them how to identify pieces through counting and seeing if it matches the printed music. Clap and conduct with the students. Let them know that a 3 pattern is common for dancing and that a 4 pattern is common for marching.

Show students the pattern below. Have students describe it, and then count aloud and clap, accenting the larger numbers. Next have them count and clap only on the large numbers. Get into a good tempo and have students notice that the rhythm is 2 slow beats followed by 3 faster beats. It alternates between 2 and 3. Have students clap as they listen to *Tanz* from *Carmina Burana*. See if they can find the hemiola patterns while listening.



Extensions

Math

Rhythmic notation is “proportional.” Determine the time value of any note by comparing it proportionally to the time value of a “benchmark” note. For example: If a whole note equals four beats, then a half note equals two beats, and a quarter note equals one beat.

Students may complete musical math reading problems by using the above information:

If a whole note equals two beats, how many beats does a half note receive? How many beats does a quarter note receive?

These types of musical math problems involve division and multiplication. These could also be developed into addition or subtraction problems, or even into problems dealing with fractions.

Social Studies / Language Arts / Music

Locate Germany on a map, then locate the three towns that Carl Orff lived and worked in. How do these towns compare to where you live?

Discuss the history of the text Orff used for the rest of *Carmina Burana*. Why is it sung in Latin?

Have students write similar texts that show their thoughts and feelings. Can these be set to music? Have students compose melodies or soundscapes to accompany their writings. If possible, have them create their compositions using Orff instruments!

Have students learn the waltz and a marching pattern. Have someone “conduct” the music by using the appropriate conducting pattern.

DUKE ELLINGTON

Born in Washington, D.C. 1899

Died in New York, New York 1974

Duke Ellington Fantasy

Individual selections composed c. 1930's—1940's



Edward Kennedy 'Duke' Ellington was an American jazz composer, pianist and bandleader. He was awarded the Presidential Medal of Freedom in 1969 and in 1973, the Legion of Honor by France. Both are the highest civilian honors of each country. He was also awarded the Grammy Lifetime Achievement Award in 1966. He was known as 'The Duke'.

Duke Ellington was a major force in jazz from the 1920s through the 1960s and his work continues to be influential today. He had many hits including *Take the A Train*, *Satin Doll*, *Mood Indigo*, *Caravan* and *Sophisticated Lady*.

Throughout the 1920s and 30s, Ellington often shared composer credit with his manager Irving Mills until they had a falling out in the late 1930s. Billy Strayhorn became Ellington's collaborator (not always credited) from 1940 until Strayhorn's death in the mid 1960s.

Ellington's father, James Edward (J.E.) Ellington, born in Lincolnton, North Carolina, on April 15, 1879, was the son of a former slave. He moved along with his small family to Washington, D.C. in 1886. Duke Ellington was born on April 29, 1899 to J.E. and Daisy Kennedy Ellington who were living in the home of his maternal grandparents at the time. Daisy and J.E. were both piano players, and at the age of seven Ellington began taking piano lessons from a Mrs. Clinkscales.

Instead of going to an academically-oriented high school, he attended Armstrong Manual Training School to study commercial art. Three months before he was to graduate, he left school to pursue his interest in music, and at the age of seventeen, he began performing professionally.



Duke Ellington (at piano) and the Washingtonians

Ellington married Edna Thompson when he was 19, in 1918. She was his childhood sweetheart.

Ellington started playing around Washington D.C. , then formed a band 'The Washingtonians', which he moved to New York City in 1923. Ellington & The Washingtonians played at various New York Clubs and toured New England as a dance band until they got their first big break in 1927. When the then much better known Joe 'King' Oliver held out for more money at the prestigious Cotton Club, the job as house band was offered to Ellington. This was the best known of the Harlem clubs, and 'Duke Ellington and his Jungle Band' became well known nationally thanks to the regular radio broadcasts from the Cotton Club.

In this setting Ellington had a chance to write music in a variety of styles for dance theater acts as well as extended specialties for the band. These appearances featured many experiments in tonality, with trumpet screams and wah-wah, and growling saxophones.

When Ellington left the Cotton Club in 1931 he was one of the best known African-American celebrities, recording regularly for several record companies and featured in motion pictures. Ellington continued to tour with his band around the United States and Europe, plus a tour of much of the rest of the world in the 1960s.

He was a musical experimenter all his life, recording with John Coltrane and Charles Mingus as well as with his own highly skilled orchestra. The band reached a creative peak in the 1940s, when he wrote for an orchestra of distinctive voices and tremendous creativity. Some of these musicians, such as Jimmy Blanton, transformed jazz during the short time they played with him.

But even as players left and the popularity of swing diminished, Ellington continued to find new outlets, new forms and new sidemen. He frequently composed in longer forms modeled on classical music, such as his *Black, Brown and Beige* (1943), and *Such Sweet Thunder* (1957), based on Shakespeare. His *Diminuendo and Crescendo in Blue* with a rocking saxophone interval by Paul Gonsalves in 1956 at the Newport Jazz Festival greatly increased his fame and drawing power.

He also wrote for films, starting with *Black and Tan Fantasy* in 1929, but also *Anatomy of a Murder* (1959) with James Stewart, in which he appeared as a bandleader, and *Paris Blues* (1961), which featured Paul Newman and Sidney Poitier as jazz musicians.

Ellington was nominated for a Pulitzer Prize in 1965, but was turned down. His reaction: 'Fate is being kind to me. Fate doesn't want me to be famous too young.'

He died of lung cancer and pneumonia on May 24, 1974, a month after his 75th birthday, and was interred in the Woodlawn Cemetery, The Bronx, New York City. A large memorial to Duke Ellington created by sculptor Robert Graham was dedicated in 1997 in New York's Central Park near Fifth Avenue and 110th Street, an intersection named *Duke Ellington Circle*.

Jazz

Jazz is a musical art form that originated in New Orleans, Louisiana, United States around the start of the 20th century. Jazz uses improvisation, blue notes, swing, call and response, polyrhythms, and syncopation. Jazz has roots in the combination of West African and Western music traditions, including spirituals, blues and ragtime. After originating near the beginning of the 20th century, jazz styles spread in the 1920s, influencing other musical styles. The instruments used in marching bands and dance band music at the turn of century became the basic instruments of jazz: brass, reeds, and drums, using the Western 12-tone scale.

Swing

Swing music, also known as swing jazz, is a form of jazz music that developed during the 1920s and had solidified as a distinctive style by 1935 in the United States. Swing is distinguished primarily by a strong rhythm section, usually including double bass and drums, medium to fast tempo, and the distinctive swing time rhythm that is common to many forms of jazz. The first recordings labeled *swing style* date from the 1920s, and come from both the United States and the United Kingdom. They are characterized by the swing rhythm already at that time common in jazz music, and a distinctive lively style which is harder to define.

Although swing was performed by small ensembles as well, the quintessential swing bands tended to be bigger than other jazz bands, necessitating a slightly more detailed and organized type of composition and notation than was then the norm. Band leaders put more energy into developing arrangements, perhaps reducing the chaos that might result from as many as 12 or 16 musicians spontaneously improvising. But the best swing bands at the height of the era explored the full gamut of possibilities from spontaneous ensemble playing to highly orchestrated music in the vein of European art music.



Duke Ellington Circle



Swing Dancing

A typical song played in swing style would feature a strong, anchoring rhythm section in support of more loosely tied wind, brass, and later, string and/or vocal sections. The level of improvisation that the audience might expect at any one time varied depending on the arrangement, the band, the song, and the band-leader. The most common style consisted of having a soloist take center stage, and improvise a solo within the framework of her or his bandmates playing support. As a song progressed, multiple soloists might be expected to take over and individually improvise their own part; however, it wasn't unusual to have two or three band members improvising at any one time.



Duke Ellington and his Orchestra in 1937

By the late 1930s and early 1940s, swing had become the most popular musical style in the country. During what many regard as jazz's classic era the popular bands became larger in size - Big Bands - and the solo became more important in jazz, with the soloists sometimes as famous as their leaders. Key figures in developing the "big" jazz band were bandleaders and arrangers Count Basie, Cab Calloway, Duke Ellington, Fletcher Henderson, Earl Hines, Jimmie Lunceford, Jay McShann, Walter Page, Don Redman and Chick Webb. Swing remained immensely popular for several years, until it was supplanted in the late '40s by the pop standards sung by the crooners who grew out of the Big Band tradition that swing began; like Frank Sinatra. In the late 1990s there was a short-lived Swing Revival movement, led by bands such as Big Bad Voodoo Daddy, and the Brian Setzer Orchestra. The style fell out of mainstream popularity before long, but it inspired a revival of swing dancing which is still growing outside of the mainstream.

Swing Time

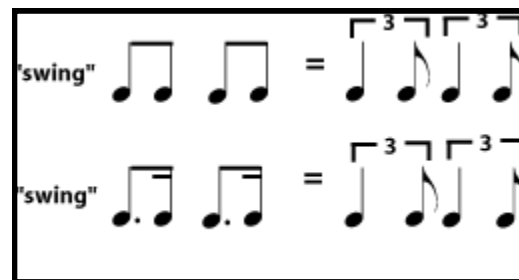
In music, a swung note is the rhythmic device in which the duration of the initial note in a pair is augmented and that of the second is diminished. A swing rhythm is the rhythm produced by playing repeated pairs of notes in this way.

In some jazz music, especially of the big band era, there is a convention that pairs of written eighth notes are not played equally--as the notation would otherwise be understood--but with the first longer than the second. The first note of each of these pairs is often understood to be twice as long as the second, implying a quarter note-eighth note triplet feel, but in practice the difference is rarely that pronounced. Notes that are not swung are known as straight notes.

Swing rhythms range anywhere from slightly asymmetrical pairs to imbalances of a more pronounced sort. The subtler end of the range involves treating written pairs of eighth notes as slightly asymmetrical pairs of similar values. On the other end of the spectrum, the "dotted eighth - one sixteenth" rhythm, consists of a long note three times as long as the short. Rhythms identified as swung notes most commonly fall somewhere between straight eighths and a quarter-eighth triplet pattern.

The following ratios are approximations of the different levels of swing:

- 1:1 = eighth note + eighth note = straight eighths
- 1.5:1 = long eighth + short eighth = swing
- 2:1 = triplet quarter note + triplet eighth = medium swing
- 3:1 = dotted eighth note + sixteenth note = hard swing



Lesson — Duke Ellington Fantasy

Duke Ellington (1899-1974)

Materials

[Recording of Duke Ellington Fantasy](#)

Videos of song played in [straight](#) vs. [swing](#) rhythm

[Blank Sheet Music](#) (optional)

Procedures

1. Share historical information on Ellington's life and importance in American music history
2. Discover and discuss world events that were happening during his life
3. Discuss the development of jazz and swing music
4. Have students listen to Edvard Greig's "In the Hall of the Mountain King" in "straight" time, and then listen to a "swing" arrangement of it (links above).
5. After listening to each, discuss how the two versions sounded different.
6. Explain how swing time and straight time differ rhythmically when notated on the staff.
7. Play the recording of the "Duke Ellington Fantasy". Have students identify the instruments that they hear. Which ones make up the "rhythm section"?
8. Have students write how the music makes them feel and then compare and contrast it with classical music (and other forms)
9. Have students compose their own simple melodies (making sure to use at least several pairs of eighth notes). Have them play their melodies using "straight" rhythms. Next, the teacher (or student) will play the melody with a swing rhythm applied.

Extensions:

Art

Have students create a poster advertising a jazz concert performed by Duke Ellington and his orchestra. Remember to tell when and where the concert will be presented and if there will be an admission fee. After the sign is completed, listen to music from Duke Ellington's orchestra. Pretend that it is taking place at the concert that your sign was created for.

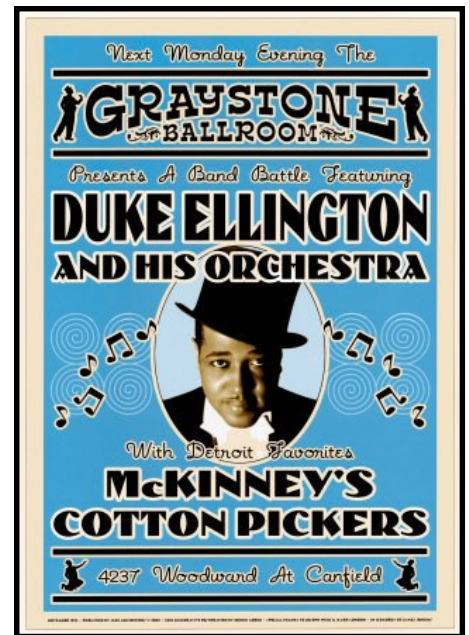
Social Studies

Locate Washington, D.C., where Duke Ellington was born, and New York City, where Ellington lived and worked for a large portion of his life, on a map. How do these two cities relate? Are they located near each other? What is their relation to the entire United States? How do their locations relate to where you are from?

Duke Ellington was one of the most famous and influential African American musicians in history. Discuss the importance of this with your students. You may want to also introduce them to some of the other important African American musicians who helped shape musical forms such as jazz, swing, and blues.

Math

The formula for "swing time" is rooted in mathematical ratios. How "hard" a song swings is determined by the ratio between each note in a pair of eighth notes. The greater the difference in size between the first and second note, the greater the amount of swing. Thus a piece with a ratio of 1.5:1 wouldn't swing as "hard" as a song with a ratio of 3:1. Discuss ratios with your students and how it applies to swing music. See if they can think of other instances where ratios and proportions are used.



IGOR STRAVINSKY

Born in Oranienbaum, Russia 1882

Died in New York, New York 1971

Berceuse and Finale from Firebird Suite

Composed in 1919

The son of a leading bass at the Mariinsky Theatre in St. Petersburg, Stravinsky began piano lessons at age 9. Although his father was a singer, his parents wanted their son to become a lawyer and not a musician. For this reason, Stravinsky studied law for several semesters at the University of St. Petersburg. However, he also continued his music studies, which included composition lessons with the famous Russian composer Nikolai Rimsky-Korsakov.

Upon graduation from college, Stravinsky married Katerina Nossenko and embarked upon a career in music instead of one in law. In 1908, his first symphony was performed. This came to the attention of Sergei Diaghilev, the director of the Ballet Russe, who commissioned Stravinsky to compose a ballet for his theatre. That ballet ended up being the famous *L'Oiseau de Feu* (*The Firebird*).

Stravinsky left Russia for the first time in 1911, going to Paris to attend the premiere of *The Firebird*. During his stay in the city, he composed three major works for the Ballets Russe—*L'Oiseau de Feu*, *Petroushka*, and *Le Sacre du printemps* (*The Rite of Spring*). In 1913, the premiere of *The Rite of Spring* nearly caused a riot in the concert hall. The work was very different from what concert audiences at that time were used to hearing; many of them didn't even consider it to be music.

Because of World War I and the October Revolution in Russia, Stravinsky moved to Switzerland in 1914. He moved back to Paris in 1919 and continued composing for the Ballet Russe; even becoming a French citizen. He would not return to his home country of Russia for over 40 years.



Sketch of Stravinsky by
Pablo Picasso

Stravinsky displayed an inexhaustible desire to learn and explore art, literature, and life. This desire manifested itself in several of his Paris collaborations. Not only was he the principal composer for the Ballet Russes, but Stravinsky also collaborated with Pablo Picasso (*Pulcinella*, 1920), Jean Cocteau (*Oedipus Rex*, 1927) and George Balanchine (*Apollon Musagete*, 1928).

Due to the war in Europe and the death of his first wife, Katerina, in 1939, Stravinsky moved from France to Massachusetts. Their marriage had endured for 33 years, but the true love of his life, and partner until his death, was his second wife Vera de Bosset, whom he married in New York in 1940. In 1945, Stravinsky moved to California where he would live the rest of his life. To celebrate his new citizenship, he wrote an orchestral arrangement of *The Star Spangled Banner*.

Stravinsky had adapted to life in France, but moving to America aged 58 was a very different prospect. For a time he preserved a ring of immigrant Russian friends and contacts, but eventually realized that this would not sustain his intellectual and professional life in the USA. When he planned to write an opera with W. H. Auden, the need to acquire more familiarity with the English-speaking world coincided with his meeting the conductor and musicologist Robert Craft. Craft lived with Stravinsky until his death, acting as interpreter, chronicler, assistant conductor and factotum for countless musical and social tasks.



Leon Bakst's costume design for *The Firebird*.

After moving to California, Stravinsky began taking commissions from various different sources, including the Ringling Brothers Circus, a jazz band, and an opera company. He also continued to write ballets. He also unsuccessfully wrote scores for films. In 1962 he accepted an invitation to return to Russia for the first time since 1919 for a series of well-received concerts.

Stravinsky was very neat, meticulous, and precise. These traits were apparent in his musical scores which were extremely well crafted and carefully written. Most people who knew him through dealings connected with performances spoke of him as polite, courteous and helpful. At the same time, however, he had a disregard of his social inferiors. Robert Craft was embarrassed by his habit of tapping a glass with a fork and loudly demanding attention in restaurants. He also ignored the opinions, advice, and suggestions of others regarding his music, and did not seem to care whether or not critics (or audiences) liked his music.

He died in New York City on April 6, 1971 at the age of 89 and was buried in Venice on the cemetery island of San Michele. His grave is close to the tomb of his early collaborator Diaghilev. Stravinsky's life had encompassed most of the 20th Century, including many of its modern classical music styles, and he influenced composers both during and after his lifetime. He has a Star on the Hollywood Walk of Fame at 6340 Hollywood Boulevard.

The Firebird

In 1909, when Stravinsky was 27, he was commissioned by Sergei Diaghilev to write a ballet based on the Russian legend, the Firebird. The work was completed in 1910 and premiered at the Paris Opera. Stravinsky attended the rehearsals, and actively helped in the preparation of the production. The ballet turned out to be a huge success and marked a major step in his career. The ballet was first performed in the United States in 1944 with costumes and sets designed by the famous artist Marc Chagall.

The melodies of *The Firebird* are influenced by Russian folk songs. The ballet is a succession of five dances. The movement, *Berceuse* (or Lullaby) and *Finale* is the last dance.

Story of the Firebird- Synopsis

Prince Ivan appears in the king's garden pursuing the Fire Bird. The Fire Bird dances while plucking golden apples from a magic tree in the garden. Suddenly, the dance breaks off when the prince catches her. They struggle, and the Fire Bird gives in to the prince. The Fire Bird offers a feather to the prince as a pledge that she will help him if he were ever to need it. He accepts it, and she flies off. Soon, 13 captive princesses of the king appear in the garden playing a game with the golden apples. The prince appears, and the princesses dance with him. However, the prince becomes enchanted with the leader of the princesses- the one who is to be his bride. In a panic, the princesses scurry back to the king's castle so as not to arouse his anger for their being late. The prince decides to rescue his bride and free the captive princesses. So Ivan goes to the castle, opens the gates and attempts to start the rescue. The king is so infuriated that he begins to cast a spell which would turn Ivan to stone. But Ivan remembers his magic feather from the Fire Bird. No sooner does he wave it above his head that the king's spell is rendered powerless by the appearance and the magic of the Fire Bird. Ivan and the princess may. The Fire Bird leaves with a feeling of hope and joy.

The Phoenix

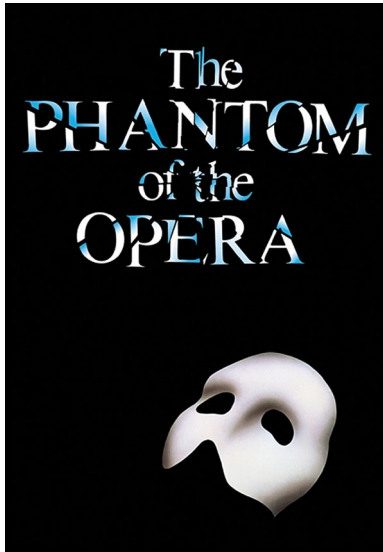
Like the Firebird, the phoenix is a bird with beautiful gold and red plumage. At the end of its life-cycle the phoenix builds itself a nest of cinnamon twigs that it then ignites; both nest and bird burn fiercely and are reduced to ashes, from which a new, young phoenix arises. The new phoenix is destined to live, usually, as long as the old one, and continue the cycle. Due to this, the Phoenix has become a symbol of rebirth.



Painting of the Firebird

Leitmotif

Another way a composer can use melody is through leitmotifs. A leitmotif is a recurring musical theme that is associated within a particular piece of music with a particular person, place or idea. Although usually a short melody, it can also be a chord progression or even a simple rhythm. Leitmotifs can help to bind a work together into a coherent whole, and also enable the composer to relate a story without the use of words, or to add an extra level to an already present story.



Leitmotifs are used in Lloyd Webber's *Phantom of the Opera*

Carl Maria von Weber was the first composer to make extensive use of leitmotifs. The first use of the word "leitmotif" in print was used while describing Weber's work. Beethoven also employed leitmotifs. For example, in his Fifth Symphony, a particular melody is said to be representative of "fate", after a critic famously described the recurring musical phrase as "The sound of fate knocking on the door". It is Richard Wagner, however, who is the composer most often associated with leitmotifs, and his operas make liberal use of them.

Leitmotifs are very common in movie scores; a well known example is the *Star Wars* Imperial March associated with Darth Vader in the *Star Wars* series of films composed by John Williams. John Williams also uses leitmotifs in his film scores for *Jaws*, the *Indiana Jones* films, the *Superman* films, *E.T. the Extra-Terrestrial* and *Schindler's List*. The work of Howard Shore in his *The Lord of the Rings* scores includes extensive use of leitmotifs which occur throughout the length of the three films. The themes represent different characters, cultures, and places. The music within Andrew Lloyd Webber's *The Phantom of the Opera* contains leitmotifs for some of its characters. The most popular example is likely the powerful pipe organ chord progression for the Phantom himself.

In visual arts an example of leitmotif can be seen in the works of M.C. Escher, which are featured throughout this guide. He repeats an image and changes one subtle thing each time. There are always links between the transformations and a goal in mind for the variations. In music it may help to convey a story; in Escher it may be the final overall image, which is a tessellation, i.e., a pattern repeated across a plane.

Stravinsky utilizes leitmotifs in *Firebird* to symbolize the different characters in the story. In order to make the melody fit the surroundings and meaning of the story throughout the entire ballet, he alters it in subtle ways by varying the accompanying music.

Lesson — Berceuse and Finale from Firebird

Igor Stravinsky 1882-1971

Materials

Recording of **Berceuse** and **Finale** from **Firebird**

[Original Russian Firebird folk tale](#)

Procedures:

1. Share historical information on Stravinsky's life and importance in music history.
2. Discover and discuss world events that were happening during Stravinsky's life.
3. Discuss the syncopated and the irregular rhythms of the polytonal dissonances and the melodic motives, mixed meters, and use of the ostinato patterns.
4. Share the listening map with the students.
5. Discuss the *Firebird* which was originally scored for extremely large orchestras and how he used Russian folk themes and motifs.
6. Discuss leitmotifs and how Stravinsky used them in the *Firebird*.

Listening Map

A ballet is a story told through dance and music. The dancers tell the story with their bodies. The suite, Firebird, ends with a Berceuse or a lullaby on a solo bassoon by the strains of a harp and the strings. An ascending harp glissando leads to a more impassioned section, followed by a return of the bassoon melody. The uncomfortable dissonant chords in such a quiet passage are immensely disturbing and it enhances the mystical quality of the music.

The finale begins with horn solo recapitulation of the Princess themes which are transformed into a joyful hymn of praise. The magnificent brass horn plays here as the lower brass picks a relatively quicker tempo but retains the solemnity and grandeur. Over string tremolos, a solo horn plays a variation of the themes that was first presented by the flutes in the Princess Round. Other members of the orchestra incorporate the melody as the Final builds to a grandiose climax.

Curricular Extensions:

Music

Introduce leitmotifs and identify where they are used in the Finale. How is the melody varied? How do these variations contribute to the story line? In other words, why does the melody change to fit the surroundings and meaning of the story?

Composition:

Listen to the recording of Firebird. Have the students tap along with the beat while the orchestra is performing. Ask them if the rhythm was even or uneven throughout the piece, and then have them tap the rhythm. Try having the students tap the half notes and clap the quarter notes. While using rhythm instruments, have the students play to the rhythm of the piece. Then transfer the rhythm to pitched instruments.

Have the students create their own compositions using uneven and ostinato patterns. Then have the students write down their compositions by notating their pieces. Students will perform for each other.

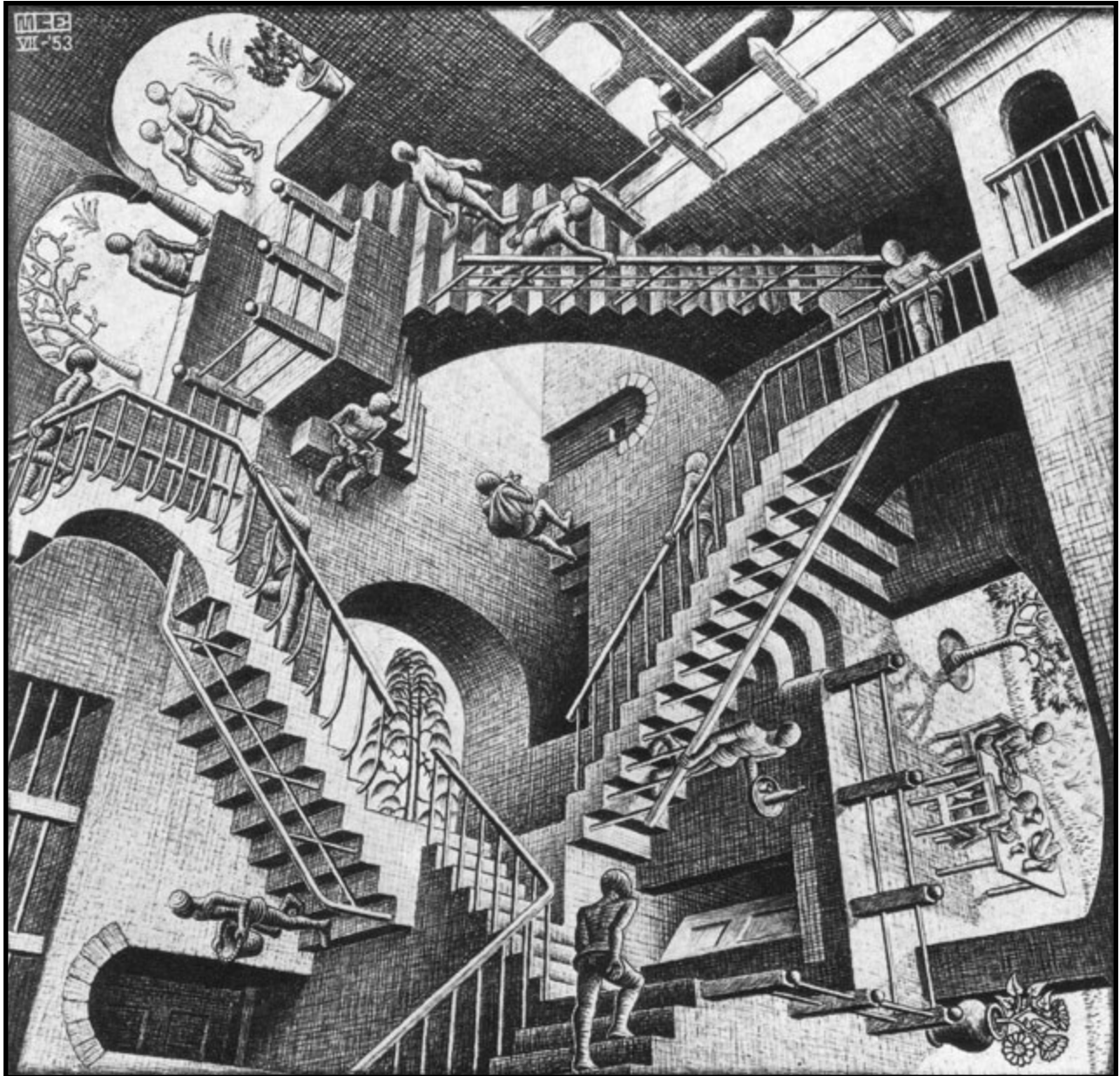
Social Studies:

From 1900- 1945 Europe and the United States were in a constant state of turmoil. Have the students identify what was going on during this period. Have them create a time-line of events taking place in Europe and the United States during Stravinsky's lifetime. Have the students research how the wars going on concerning democracy, individual rights, equality, and the rule of the law influenced Stravinsky's thinking and his music.

Language Arts:

Have students listen to the original Russian folk tale about the Firebird (link on previous page) from which Stravinsky based his ballet on. What are the similarities and differences in the story? How does Stravinsky use music to tell the story and to convey character?

STUDENT SECTION



M.C. Escher, *Relativity* (1953)

➤ COMPOSER QUICK FACTS ➤



Aram Khachaturian

Born: June 6, 1903, in Tbilisi, Georgia (Russia)

Died: May 1, 1978, in Moscow, Russia

Country: Russia

Period of Music: Modern

Famous for: Using Armenian folk tunes in his music

Fun Fact: His *Sabre Dance* is used as the theme song for the NHL's Buffalo Sabres.



Johann Sebastian Bach

Born: March 26, 1685, in Eisenach, Germany

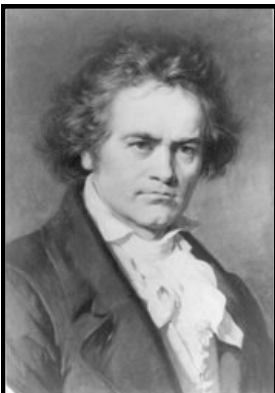
Died: July 28, 1750, in Leipzig, Germany

Country: Germany

Period of Music: Baroque

Famous for: Keyboard works, cantatas, and concertos

Fun Fact: Bach had 20 children, several of whom also became composers



Ludwig van Beethoven

Born: December 17, 1770, in Bonn, Germany

Died: March 26, 1827, in Vienna, Austria

Country: Germany

Period of Music: end of Classical/beginning of Romantic

Famous for: redefining the symphony

Fun Fact: Beethoven's manuscripts were very messy and hard to read. Once a copyist remarked that he would rather copy 20 pages by another composer than one page of Beethoven's.

Aaron Copland

Born: November 14, 1900 in Brooklyn, New York

Died: December 2, 1990 in Sleepy Hollow, New York

Country: United States

Period of Music: Modern

Famous for: Orchestral works, ballet music, and film scores

Fun Fact: *Hoe-Down* was used as the background music to the marketing campaign “Beef...it's what's for dinner.”



Carl Orff

Born: July 10, 1895, in Munich, Germany

Died: March 29, 1982, in Munich, Germany

Country: Germany

Period of Music: Modern

Famous for: *Carmina Burana* and his work in music education

Fun Fact: Created educational techniques still used today in elementary school music classes



Duke Ellington

Born: April 29, 1899, in Washington, D.C.

Died: May 24, 1974, in New York, New York

Country: United States

Period of Music: Modern

Famous for: Bandleader, jazz composer

Fun Fact: Was nicknamed “Duke” in high school because of how stylish he dressed and because of his slicked back hair. His friends thought this made him look like royalty.



Igor Stravinsky

Born: June 17, 1882, in Oranienbaum, Russia

Died: April 6, 1971, in New York, New York

Country: Russia

Period of Music: Modern

Famous for: Ballet music, orchestral works

Fun Fact: Composed a *Circus Polka* in honor of a young elephant at Ringling Brothers Circus.

