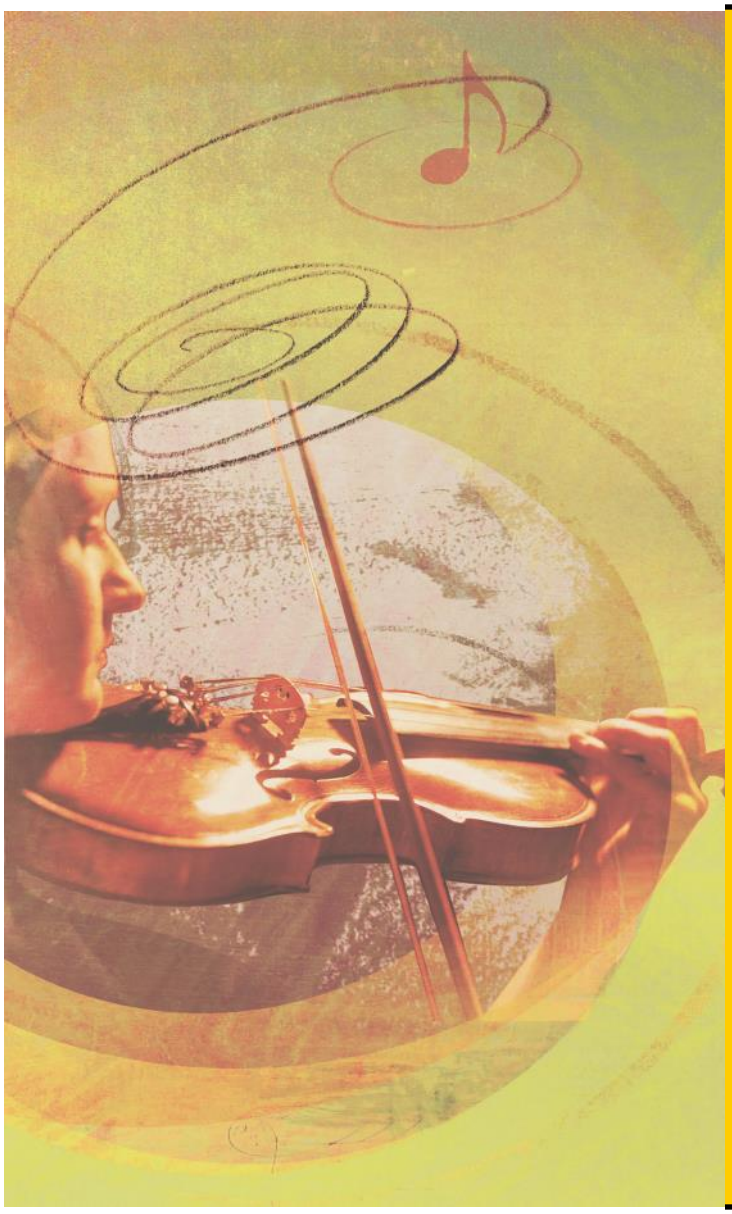
YOUNG PEOPLE'S CONCERT SERIES FOR PRIMARY STUDENTS

Released January 2006
Revised January 2011

Teacher Guide



Tubby the Tuba

and

The Young Person's Guide to the Orchestra

March 2015

Grant Cooper,

Conductor

Maier Foundation Hall

The Clay Center

With accompanying student guide and audio CD companion

Segal & Davis family foundation

KATHARINE B. TIERNEY CHARITABLE FOUNDATION

MRS. BETTY SCHOENBAUM AND THE SCHOENBAUM FAMILY FOUNDATION

Dear Educators:

We are extremely pleased to provide this teacher guide, with interconnected student guides and an audio CD to assist you and your students in preparing for an upcoming visit to hear and see a live West Virginia Symphony Orchestra performance.

This Young People's Concert Series for primary students has a strong focus on the instruments of the orchestra. Both pieces scheduled to be performed during this program: *Tubby the Tuba* and *The Young Person's Guide to the Orchestra* offer important musical perspectives toward learning many of the foundational aspects of orchestral instruments and their families, their histories and attributes, as well as other key music education concepts such as the elements of music.

All of the information and activities provided in the student and teacher guides, as well as the live performance, are aligned with West Virginia-mandated content standards and objectives for grades K-2. In many cases we have provided extension material to assist both teachers and students with more extensive background information as deemed appropriate. As always, we encourage team teaching in both general and music classrooms, as many educators now recognize that music is an excellent tool to teach concepts across the curriculum.

We salute your dedication to promoting music education both inside and outside the classroom and we look forward to seeing you for a truly magical exploration of the world of music!

Yours in music,

How to Use the Teacher's Guide

This guide has been developed to assist educators as they prepare their students for a live West Virginia Symphony Orchestra Young People's Concert for primary students in the It contains information in a sequential order as follows:

We have also provided accompanying student guides that are interconnected with this guide. The student guides were designed so that each student is able to work out of his/her own copy and keep it as a souvenir. The student version is essentially a summarized and grade-appropriate version of the teacher guide and requires significant teacher direction for K-1 students.

CSO Correlations

All applicable West Virginia content standards and objectives are listed at the end of each lesson plan. The lesson plans have been designed to tie together all of the concepts that are conveyed by this program.

Most of the material in this guide is cross-disciplinary and can be used in both the music and general classroom. We highly encourage team teaching!

In addition, we have compiled an audio companion CD containing portions of the pieces you will be hearing during the live Young People's Concert as well as samples of individual instrument sounds. You will be directed at various points in this document to use the audio CD as a resource. Please feel free to also develop other creative ways to use this resource.

We hope these materials are useful to you as you prepare for your upcoming visit to the WVSO. If you experience any problems, need additional information or wish to provide input please contact the WVSO Education Department at (304) 561-3531 or e-mail: bking@wvsymphony.org.

The People Who Wrote and Summaries of Our Concerts Works

Tubby the Tuba

George Kleinsinger

1914-1982

George Kleinsinger was born in San Bernardino, California on February 13, 1914. Although he wrote several compositions for musical theatre, his best known work is *Tubby the Tuba*. He wrote the music to this story by Paul Tripp in the early 1940s when they were both in the Army during World War II. When a recording of it was released in 1946, it was an immediate hit. Kleinsinger died in New York City in 1982.

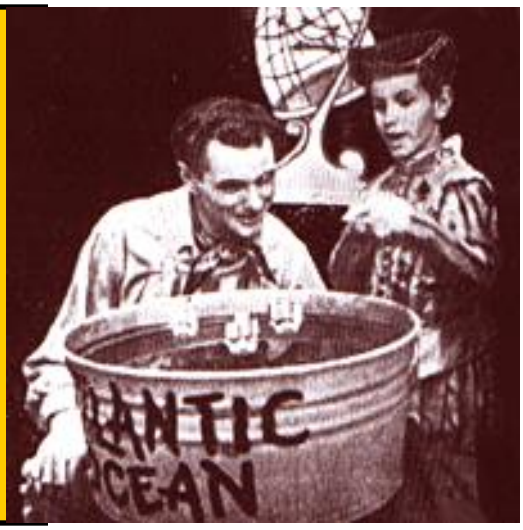
Please note that we were unable to obtain a photograph of Mr. Kleinsinger.

Paul Tripp

1911-2002

New York City was home to Paul Tripp, who was born there in 1911 and died there in 2002. Mr. Tripp was an entertainer to children as well as an educator. He spent much of his life working with children by writing and directing plays in which children were encouraged to use their creative imaginations. He wrote the story of "Tubby the Tuba" to show children that every person is important.

Mr. Tripp and his wife, Ruth Enders Tripp, won many awards for their work in television shows for families during the 1950s. Paul Tripp also wrote children's books, including "The Scarecrow Who Smiled by Mistake."



Story Summary

Tubby the Tuba - George Kleinsinger

Tubby is a friendly tuba tired of playing the same old "oom-pah." While other members of the orchestra get to "dance" with beautiful tunes, Tubby the Tuba is never allowed to play the melodies. All that Tubby ever gets to play is a simple, slow "oom-pah." One day, Tubby tries to play a pretty tune, but it sounds terrible. Poor Tubby is laughed at, so he goes for a walk by himself along the river.

While at the river, Tubby meets a bullfrog, who tries to cheer him up by singing him a song. Tubby loves the song. The bullfrog invites him to try the tune himself and take it back with him to share with the orchestra.

After Tubby sings his new found tune, the other members of the orchestra are so delighted they ask to join with him. Tubby and the bullfrog are thrilled with themselves and their music.

The Young Person's Guide to the Orchestra

Benjamin Britten 1913-1976

Benjamin Britten was born in 1913 in Suffolk, England, the youngest of four children. His father was a dentist. As a child he learned to play both the piano and the viola. By the age of 6 he had already begun writing music.

Benjamin Britten was one of the most prolific and most famous English composers of the 20th Century, especially known for his choral works. One of his most well-known works is *War Requiem*, which was a large choral work written for the consecration of the re-built Cathedral in Coventry, England that had been destroyed in WW II.

Because of his strong belief in the importance of music education for children, he composed *The Young Person's Guide to the Orchestra* in 1946, which is still widely performed today.

Henry Purcell 1659-1695

Born in London, England in 1659, Henry Purcell is known as one of the greatest British composers. In addition to composing music, he was an accomplished organist at Westminster Abbey. He also served as a musician and composer for the Royalty of his time.

Despite his brief life, Henry Purcell was a prolific composer. He wrote not only choral works, including an opera, but many instrumental works as well.

Story Summary

The Young Person's Guide to the Orchestra, Op. 34 - Benjamin Britten

The Young Person's Guide to the Orchestra was written to introduce children to instruments, their families, and to variation form in orchestral music. The work is based on Henry Purcell's *Rondeau*, which he composed in 1695 for a stage play. It is often narrated to allow the listener to identify individual instruments as they play different variations of the work's primary theme.

The composition begins by introducing the theme, played by the orchestra in its entirety. Each family then plays its own version of the theme, followed by variations for each individual instrument. To finish, the entire orchestra joins together to create a grand finale.

Special Note to Teachers:

You may wish to present the material below as a mini-lesson, using the audio samples from the enclosed WVSO audio CD and pointing out the melodic and rhythmic patterns as they are listening to each one.

A Composer and His/Her Tools

Musical compositions usually do not just appear from the imaginations of the composer. The composer first must write smaller parts of his/her ideas, followed by an outline of how the beginning and the end will be. Then the composer will make rough drafts before the final piece is completed. The composer must help the listener hear and imagine each part of the musical structure.

By using different instruments, adding other instruments, adding accompaniments, or adding other contrasting music, an initial idea can take new shapes!

Sometimes "leftover" ideas can be used in later musical compositions. A composer or a writer never throws anything away!

Melody

Melody is an orderly chain or row of pitches which include modes and rhythms that work well together. When we listen to music, usually the melody is the dominant or most important tune we hear. It is the one we keep singing or whistling after hearing the piece. Melody is horizontal, meaning the notes sound one after the other; while harmony is vertical, meaning the notes sound at the same time.

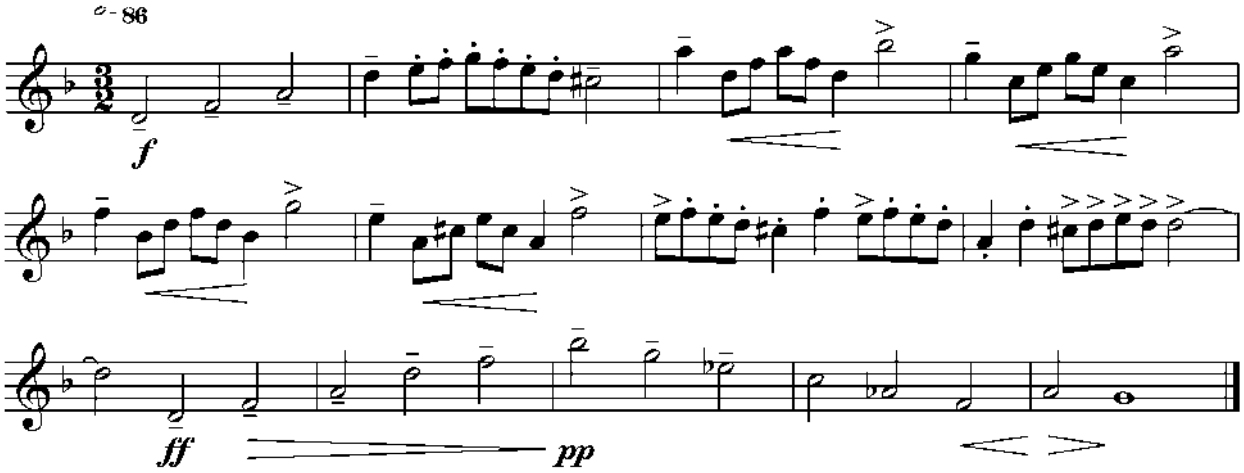
Some melodies are built from several short groups of notes called musical motives, sometimes combined to form a theme. Melodies can be based on a particular chord or a certain mode or scale. They can be simple or very complex and organized according to various formulas. Plainsong, many European folksongs, as well as other music can be simple melodies.

Rhythm, or how long each pitch lasts, is a very important part of melody. Even when the pitches are the same, if the *rhythm* is changed, it is no longer the same melody.

Listen to the melody (a theme by Henry Purcell) as played by the violins in Britten's *The Young Person's Guide to the Orchestra*. (**Audio Track 3**)

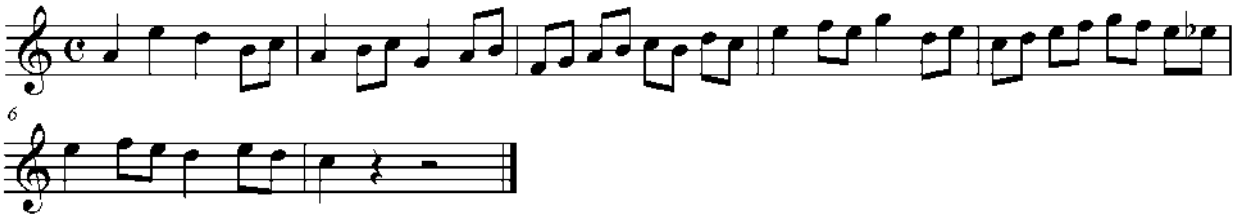
Continued...

A Composer and His/Her Tools (continued)

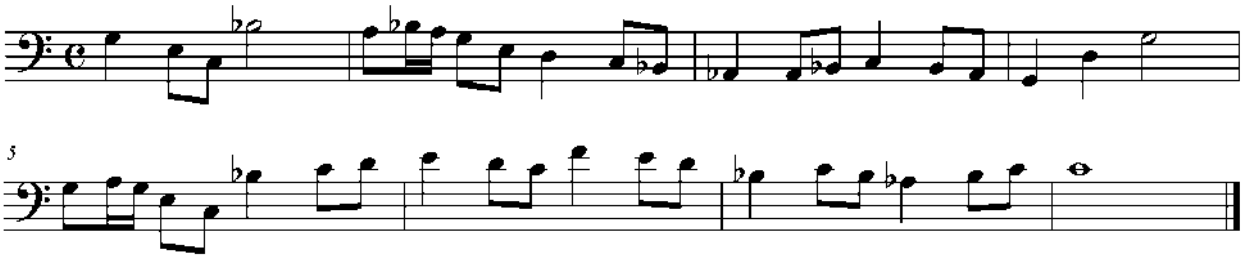


Then listen to **Audio Track 4** to have your students hear this same theme with full orchestration. As an extra exercise, your students may wish to orally identify the instruments playing in this audio sample. Note that this track is over 2 minutes long and may need to be stopped after the theme has been played (approximately 25 seconds).

Now listen to Tubby's two tunes from *Tubby the Tuba*. First the Pretty Tune other instruments are playing (**Audio Track 2**):



Then his own tune (**Audio Track 1**):



Continue on to the Rhythm Section ...

A Composer and His/Her Tools (continued)

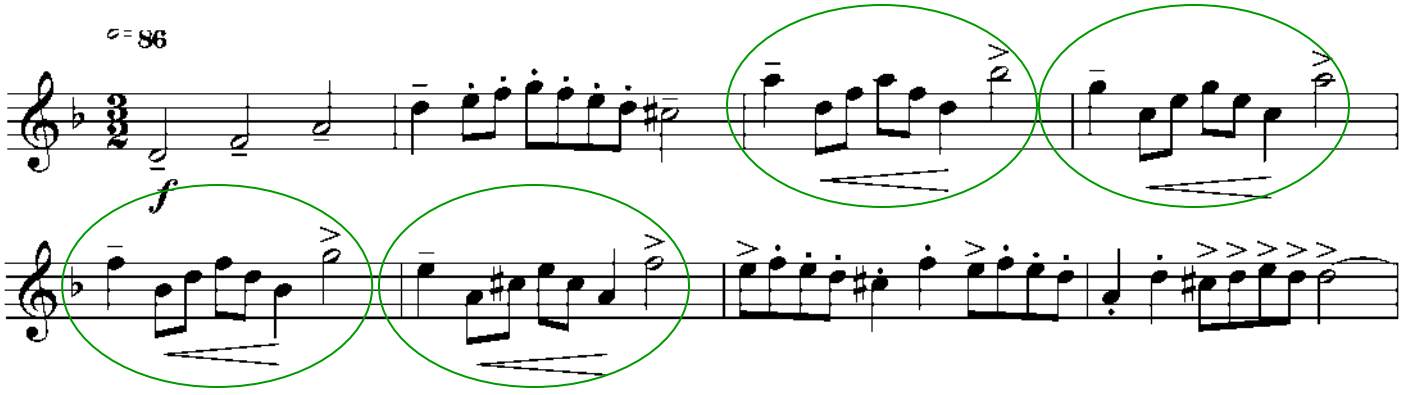
Rhythm

The word rhythm means the way we organize sounds in time. Rhythm patterns can be steady or uneven. There are stressed and unstressed beats within a pattern. The grouping of these beats makes the meter for the music, which is shown by the time signature. Rhythm is found in the human heartbeat and in sounds of nature as well as in music. In visual art and poetry, rhythm refers to patterns repeated throughout a work. Beats or pulses in music are often heard by the drumbeats or in a repeated accompaniment pattern. The speed of the beats or pulse determines the tempo.

Sometimes rhythm forms a certain pattern. The most common patterns we use are ones with four beats (stress on the first beat, smaller stress on the third beat) and ones with three beats (stress on the first beat). A three beat pattern is sometimes known as a waltz rhythm (**1**-2-3). Sometimes a pattern shifts the emphasis away from a stressed beat to a normally unstressed beat, which is called syncopation.

We show rhythm by writing notes and rests of different lengths and accents. It is important to note that some music is structured without a regular rhythm, such as some music found in India and the Middle East, or in some Christian, Jewish, Islamic, and Buddhist liturgical chants.

The pattern or patterns the composer chooses help to create the character and expression of the music. Besides the patterns used in the "Patterns in Music" lesson, notice the distinctive rhythmic pattern in the theme used in Britten's work.



In addition to producing special effects, note that the Percussion section of the orchestra has an important part in the rhythm of the piece.

Continue on to the Harmony Section ...

A Composer and His/Her Tools (continued)

Harmony

Harmony is produced when two or more notes (pitches) sound at the same time. The way those notes sound together produces the harmony.

Harmony is the design, progression, and relationship of chords. When the pitches agree with each other, we call it consonant; when they disagree, we call it dissonant. Harmony can be as simple as two melodies sounding together, or it can be very complex with many instrumental voices sounding at the same time.

Each scale or key has certain harmonies that go with it. Major and minor scales use chords in different ways. Some forms of music have specific harmonic designs.

Form

Form is the design or shape of a musical composition, or the way the whole piece is put together to make sense, rather like the plot of a story. The shape includes all of the different pitches, the rhythms used, and the dynamics used.

There are many different forms that a composer uses. Some of them are:

- binary form, a two-part form made up of an A section and a different B section.
- ternary form has three parts, ABA.
- theme and variations in which a melody is established and then repeated with changes and/or additions to it. This is what Benjamin Britten initially does with the theme of Henry Purcell in *The Young Person's Guide to the Orchestra*.
- fugue, a composition in which the theme is repeated in different voices at different times. There are strict rules in this form. The theme is first given by one part. While that one continues, the theme is repeated by another part an interval of a fifth or fourth away. This continues until many parts have answered one by one, finally weaving them into one very involved piece. This is how Britten puts all of the instruments together at the end in *The Young Person's Guide to the Orchestra*.
- rondo, in which the A section is repeated in between contrasting sections, e.g. ABACADA or ABACABA.

A composer's control of "form" is perhaps the most critical element in the success of a musical composition.

Teachers, here is some background information about concert etiquette that you may find helpful. This material can be used by teachers unfamiliar with the orchestral concert experience, and/or as supplemental information for students seeking more information. If you or your students would like more materials about topics relating to music and the orchestra, please contact the West Virginia Symphony Orchestra by calling (304) 561-3531 or visit our web site at http://www.wvsymphony.org.

Concert Etiquette

A concert is a very special event and many people have worked hard to make it pleasant for everyone. There are things your students can do to make the concert enjoyable for yourself and for others.

Your students will have many things to watch and hear during a symphony orchestra concert but listening carefully is the most important to do. Going to a symphony orchestra concert is quite different from some other popular music concerts that your students may have attended in the past. A few guidelines to cover before you arrive are written below to help you and your students enjoy your time during the concert:

- Think about the things you learned at school before the concert.
- Watch the conductor and you will see the signals he/she gives the orchestra.
- Be sure you turn off all cell phones, pagers, watch sounds/alarms, or anything that makes noise.
- If you have a cough, you may want to bring a cough drop but be sure to unwrap it before the concert begins. If you must cough, cover your mouth, and cough as quietly as possible.
- Please take care of all restroom needs before coming into the concert hall.
- Any talking, even whispering, can be heard everywhere. Wait until the end of the whole piece before saying anything to the friend sitting next to you.
- When you see the concertmaster (the principal violinist) walk onto the stage, stop all wiggling, talking, and whispering (even "shushing") so the orchestra members will be able to tune their instruments and hear each other play during the concert.
- You should clap when the concertmaster enters and when the conductor enters. Watch the conductor for the right time to clap at the end of the concert.
- It is all right to laugh during the concert when the music or words are funny. However, you should not sing, hum, whistle, yell, or scream at ANY time unless asked to by the conductor.
- It is very important that you not bother other people around you by wiggling, poking, motioning, or even "shushing" a friend who is talking.
- Do not bring any kind of food to the concert. This means no candy.
- Please stay in your seat and remain quiet through the whole concert. This helps everyone in the audience enjoy their experience fully.

Teachers, here is additional background information about conductors that you may find helpful. This material can be used by teachers unfamiliar with elements of the orchestra, and/or as supplemental information for students seeking more information. If you or your students would like more materials about topics relating to music and the orchestra, please contact the West Virginia Symphony Orchestra by calling (304) 561-3531 or please visit our website at http://wvsymphony.org.

The Conductor

Since the conductor is the leader of the symphony orchestra, he/she stands on a podium, center stage, in front of the orchestra. The orchestra members enter first to warm up their instruments by playing them. Then the concertmaster enters to show that it is time for a final tuning. When the orchestra is tuned, the conductor enters. This shows us the concert is ready to begin.

The conductor is the one who helps all of the instruments play at the same tempo (speed). He/she helps the orchestra understand what the composer wanted for each piece of music. A conductor moves his/her hands and arms in certain ways that the orchestra understands. The conductor holds a baton, or stick, to help the orchestra members see the motions.

The conductor decides which music will be played in each concert. He/she helps choose the musicians who will play in each concert. The conductor must be well prepared before leading the orchestra. Most conductors have had many years of college training.

Before the orchestra is ready to play a concert, it must practice with the conductor. The conductor must study the music (score) of the piece(s) to be played. During the rehearsals, the conductor leads the orchestra through the music. He/she tells the orchestra how certain parts should be played.

At the end of a piece, the conductor will step off the podium. When the audience applauds, he/she will bow and thank the orchestra. The conductor leaves the stage first.

The conductor must coordinate all of the instruments so they play the same tempo and interpret what the composer intended for each piece of music. The conductor gestures to the orchestra to indicate other interpretations, such as louds and softs, or smoothness of playing. The conductor also cues the musicians to begin or stop playing. Each conductor develops a unique, personal style of conducting.

The conductor uses what is called a *full score* when he or she conducts the symphony. The *full score* contains the music for all of the instruments. Sometimes a conductor has memorized the entire score and does not use it during the performance.

The conductor must know what the orchestra sounds like in the performance hall so it will be balanced correctly. Most conductors have been successful instrumentalists before they began conducting orchestras. In addition to many years of college, most conductors have had graduate school training.

Maestro Grant Cooper

Full Biography

Grant Cooper, Artistic Director and Conductor of the West Virginia Symphony Orchestra, was named to the position in March, 2001, and officially began his duties as the 9th conductor in the WVSO's history on July 1, 2001. Mr. Cooper is also Resident Conductor of the Syracuse Symphony Orchestra, having begun his tenure in Syracuse in the fall of 1997. In Syracuse, he has given more than 400 performances with the orchestra, appearing on all the major series. Mr. Cooper served as Music Director of the Fredonia Chamber Players from 1983 to 1999 and held the same position with the Penfield Symphony Orchestra from 1993 until 1999. He is Artistic Director of two summer festivals; the Bach and Beyond Festival and the Anchorage Festival of Music in Alaska.

Mr. Cooper was born in Wellington, New Zealand, the son of a professional opera singer. He sang and acted in his first opera at age four, and studied piano and music theory prior to college. After completing his degree in Pure Mathematics at the University of Auckland, his performing career took him to the major concert halls of the world from Beijing to London. Following a performance at the Henry A. Wood Promenade Concerts at the Royal Albert Hall under conductor Claudio Abbado, Mr. Cooper was invited by Maestro Abbado to join the orchestra of La Scala as solo trumpet. Instead, Mr. Cooper accepted a fellowship from the Queen Elizabeth II Arts Council for study with Gerard Schwarz in the United States. This, in turn, led to performances in New York's Carnegie Hall and with the Boston Pops under Arthur Fiedler. In 1978, while holding a fellowship at Tangle-

Maestro Grant Cooper

Full Biography (continued)

In recent years he has made his debuts with the Spokane Symphony, the Erie Philharmonic, the Kansas City Symphony, and the Houston Symphony. He returned to New Zealand to conduct the millennium celebrations there with the Auckland Philharmonia. In recent seasons he has made his debut appearance with Syracuse Opera, conducting Mozart's *Cosi fan tutte*, as well as with the Stamford (CT) Symphony Orchestra.

Long devoted to education of audiences of all ages and backgrounds, he has recently completed more than twenty one years as professor of music and director of orchestras at the university level in the United States.

A commissioned composer, Mr. Cooper has been especially active creating works designed to introduce young audiences to the orchestra. His most recent educational work, commissioned by the Cayuga Chamber Orchestra, is a setting of the tale of Rumpelstiltzkin for narrator and orchestra, and is a companion piece to his earlier *Goldilocks and the Three Bears*. *Rumpelstiltzkin* was the featured work on the Young Persons Concerts given in May, 2003 by the West Virginia Symphony Orchestra. Boyz in the Wood, for Coloratura Soprano and Rap Singer was performed by the Syracuse Symphony Orchestra in their Symphony Kids series as well as with the WVSO in November and January, 2004. While *Song of the Wolf*, a recasting of the story of The Three Little Pigs with the wolf as an environmentalist, continues to delight audiences young and old wherever it is performed. His original music often is an eclectic blend of modern and established styles with interactive participation of the audience. It reflects his belief that orchestral music is a living, vital, and relevant part of our society, able to be appreciated by all. Mr. Cooper's first arrangement for the West Virginia Symphony Orchestra, *Take Me Home, Country Roads*, was premiered at Symphony Sunday in June, 2002 and has found a permanent place in the orchestra's repertoire.

Mr. Cooper has recorded for Delos International, Atoll, Ode, Mark, and Kiwi Pacific recordings. As a conductor, a CD devoted to the premier recordings of the string music of New Zealand composer Douglas Lilburn, has been enthusiastically received. In recent seasons, Mr. Cooper has released "Points in a Changing Circle," featuring him as trumpet soloist in works by New Zealand composers and a CD featuring three of his own works recorded with the Cayuga Chamber Orchestra on a disc titled Boyz in the Wood. With this, Mr. Cooper has reached the milestone of having CD recordings of him as conductor, performer, and composer, all currently available in the catalogue.

Mr. Cooper and his family reside in Charleston.

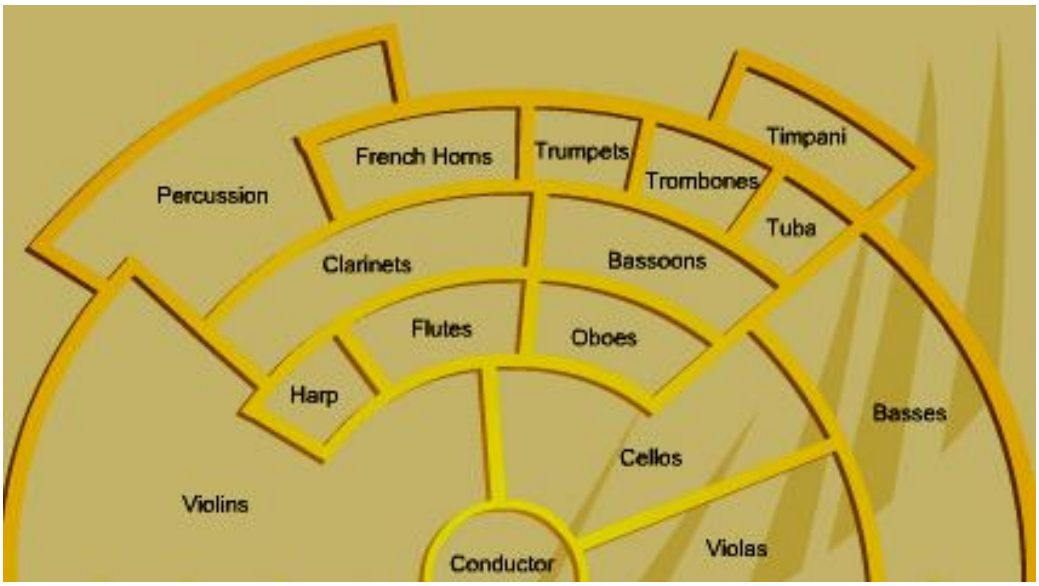
WEST VIRGINIA SYMPHONY ORCHESTRA

Grant Cooper
Artistic Director and Conductor

Structure of the Orchestra

The symphony orchestra consists of four families of instruments; strings, woodwinds, brass, and percussion.

This is how the West Virginia Symphony Orchestra is arranged when it plays concerts (although there may be slight variations depending upon adjustments Maestro Cooper may make from time to time).



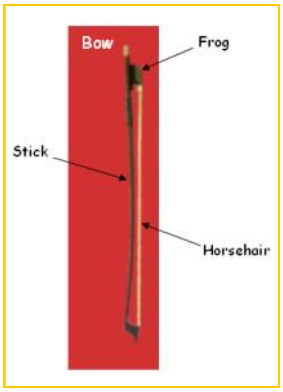
Viols within the String Family

The String Family

From the 10th century on, the instruments known as the string family began to develop. Of all the families of instruments, these instruments have the most in common with each other. A string instrument is an instrument which makes sound by the vibrating of strings. Harps and lyres were the first string instruments about 5,000 years ago. The instruments that were ancestors of the violin family were long boxes of wood with one or more strings stretched over them. About 1,000 years ago a bow was added to the playing of the lute.

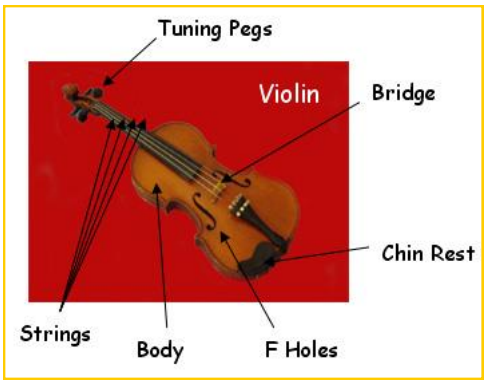
All string instruments make sound either by the friction of the bow going across the strings, by plucking the strings, or by striking the strings to make them vibrate. Sound lasts longer when the string is stroked by a bow than when it is plucked, a technique known as "pizzicato." In order to hear the vibrating string, the body of the instrument acts as a sounding board, amplifying the sound. The pitch is determined by the length, thickness, and tension of the string. The pitch can be changed by shortening or lengthening the part of the string that vibrates by pressing the string against the fingerboard with the fingers of the player's left hand.

The Viols (violins, violas, cellos, and double basses) all look the same. They are just different sizes. All of them are made of wood. All four of these instruments have four strings, each one having a different thickness. The strings can be made of gut, steel, nylon, or a combination of materials. The thicker strings are used for the lower pitches, thinner for higher ones. Each string has a different fundamental pitch, tuned by pegs, which adjust the tension of the string.



The **bow** used by the viols is made from thousands of strands of horsehair. These strands of horsehair can be tightened with a special mechanism called a frog (from the German word *Frosch*). Rosin is applied to the horsehair to help the bow grip the string better. To make the sound, the bow is pulled across the string, causing it to vibrate.

The members of the string family make up the largest number of instruments in the symphony orchestra. (See Structure of an Orchestra.)

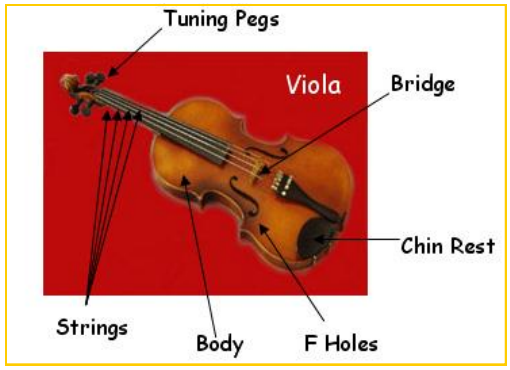


Violin

Violin (Play Track 5 on the audio CD for its sound.)

The violin has the most brilliant quality of all the stringed instruments. As small as it is, it has more than 70 parts. It is made of maple, spruce, pine and ebony. The player holds the instrument under the chin, leaving the left hand free to move over the fingerboard.

The violin is the smallest in size and the highest in pitch of the stringed instruments. The violins make the core sound of the orchestra and often play the melody, but they are equally effective in a variety of supporting roles. There are more violins in the orchestra than any other instrument. There are usually 16 to 32 violins in an orchestra.

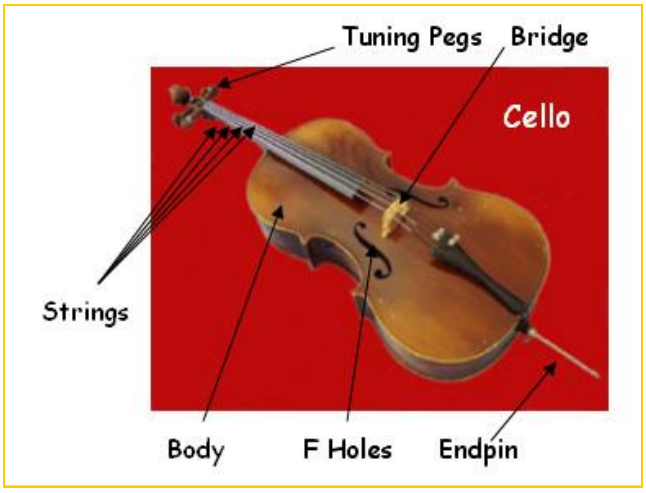


Viola

Viola (Play Track 6 on the audio CD for its sound.)

The next largest stringed instrument is the viola, with longer and thicker strings. It is tuned a fifth lower than the violin. Violas look like violins, but the timbre is deeper, richer, more somber, and less brilliant than the violin. It is in the "middle register" of the string family. The viola usually has a supporting role in the orchestra with fewer opportunities to play the melody, but it is good at expressing emotions of a more brooding quality.

To play the viola, the player also holds the instrument under the chin. Although there are fewer violas than violins in the orchestra, they are a vital part of the string section. A symphony orchestra usually has six to twelve violas.



Cello

Cello (Violoncello) (Play Track 7 on the audio CD for its sound.)

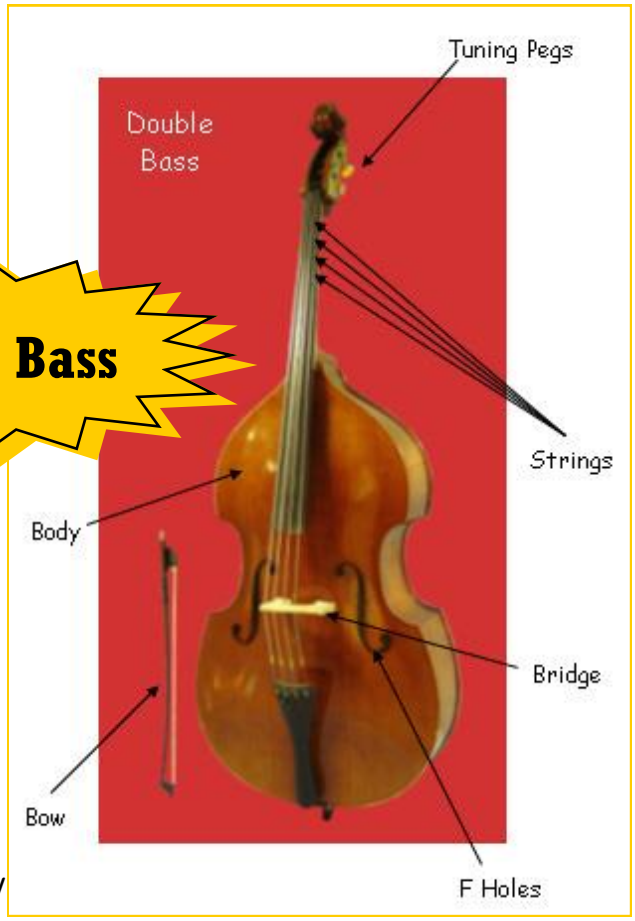
The cello is the low and rich sounding tenor member of the string family. Cellos often play the bass line together in octaves with the basses, when the soprano and alto are assigned to the first violins and second violins, respectively, and the tenor part to the violas. The cello has the largest range of notes from high to low of the stringed instruments.

At 4 feet tall, the cello is much bigger than the violin and viola. It is played with a bow that is thicker than a violin bow. The instrument is held upright between the player's knees, and is supported by a spike that comes out of the bottom of the cello and rests on the floor. The player must be seated to play this instrument. The right hand makes the sound with a bow or by plucking. The cello is tuned a full octave lower than the viola. There are usually four to ten cellos in an orchestra.

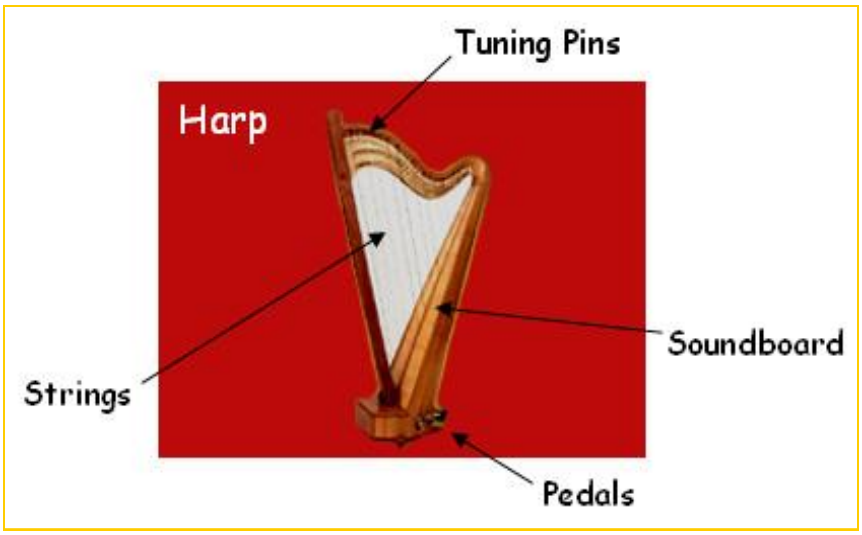
Double Bass (Contrabass) (Play Track 8 on the audio CD for its sound.)

Double Bass

The double bass is sometimes called the string bass. The bass is the largest and lowest pitched member of the string family, standing over 6 feet tall. It is about 1 1/2 to 2 times taller than the cello and capable of reaching pitches one octave below the cello. The bass player must stand up or may sit on a stool to play the bass. A bass player must have great finger strength to press the heavy strings. The spread between the fingers on the strings is the greatest on the bass of all the string instruments. A bow can be drawn across its strings or the strings may be plucked with the fingers. Double basses are tuned in fourths, rather than fifths. There are two different types of bows the bass player may use; a French bow which is held overhand like a violin bow or the *Simandl* (German) bow which is held with the palm of the hand facing up. Continued….



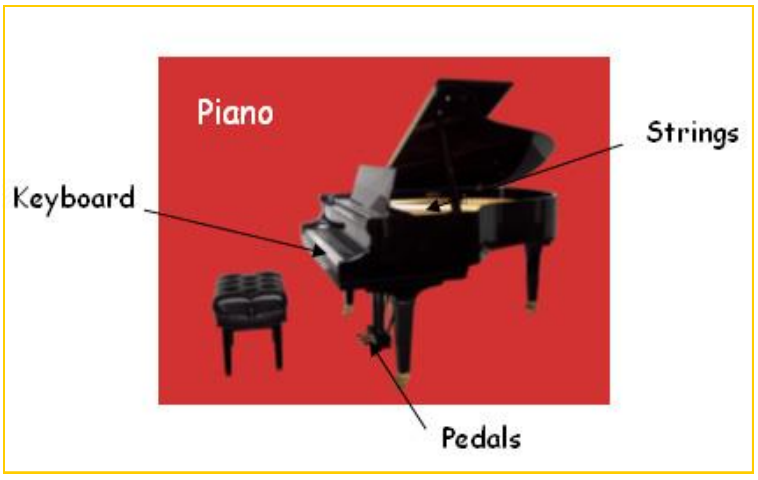
The double bass was developed during the sixteenth century. The double bass can be found playing a wide assortment of styles of music from classical to jazz. It provides the rhythmic and harmonic foundation of the orchestra. There are usually two to eight basses in an orchestra.



Harp

Harp (Play Track 9 on the audio CD for its sound.)

Although not a member of the violin family, the harp is the oldest of all string instruments. Modern-day harps have 47 strings and 7 pedals to play all the notes in its range. The use of harps in an orchestra depends upon the repertoire being performed. Usually an orchestra has one or two harps.



Piano

Piano (Play Track 10 on the audio CD for its sound.)

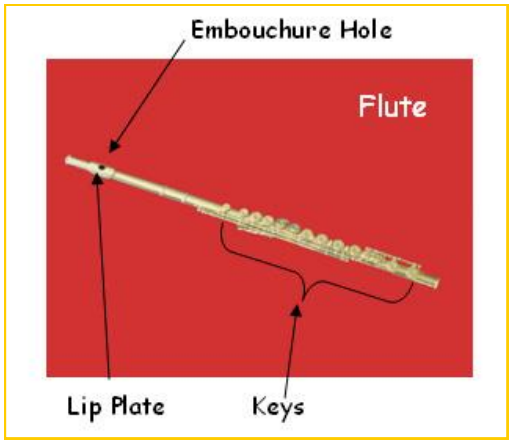
An instrument with a manual keyboard, the piano was invented in the early 1700's. When its keys are pressed, hammers strike strings of different lengths/thicknesses attached to a soundboard. This causes the strings to vibrate, producing sounds that may be softened or sustained by the use of pedals. Alternatively, the piano may be considered a member of the Percussion Family. (See Percussion Family Section)

Woodwind Family

The ancestors of modern-day woodwinds were used during the Stone Age, when people blew across the stem of a hollow reed to make a sound. Later, several reeds of different lengths were lined up beside each other. These were called Pan Pipes. The ancient Greeks and Romans had many different woodwind instruments.

In the beginning all of the woodwind instruments were made of wood. That is why they are called the woodwind family. Today, most of them are still made of wood, except for the flute which is usually made of metal.

All woodwind instruments consist of a hollow tube with holes and keys. The air inside the tube begins to vibrate when the player blows into the instrument (or across an opening, as in the flute), producing a sound. By covering some of the holes in the instrument, the player can change the pitches we hear. The column of air in the tube of a woodwind instrument is set into vibration differently in each one. The length of the air column determines the pitch. Various holes are stopped by the player's fingers or by keys which changes the effective length of the air column. The player's lungs and mouth muscles control how loud the instrument plays as well as the tone quality produced.

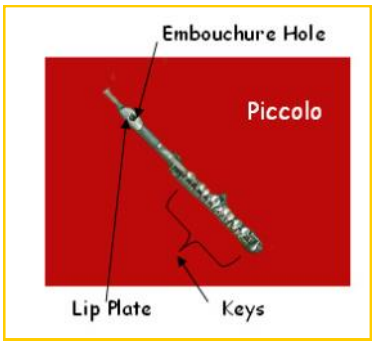


Flute (Play Track 11 on the audio CD for its sound.)

Because the flute can play very bright and joyful tones, it is one of the most popular members of the orchestra. The flute and piccolo are the only woodwind instruments that do not use reeds.

One of the earliest instruments known to man was the flute, used in Egypt over 4,000 years ago. Originally flutes were made of bone or wood. Today they can be made of wood, silver, gold, platinum, glass, or alloys. The player fits three hollow tubes together to assemble the flute. Its sound is produced by blowing across the aperture (*embouchure* hole) on the lip plate, sort of like blowing across a soda bottle.

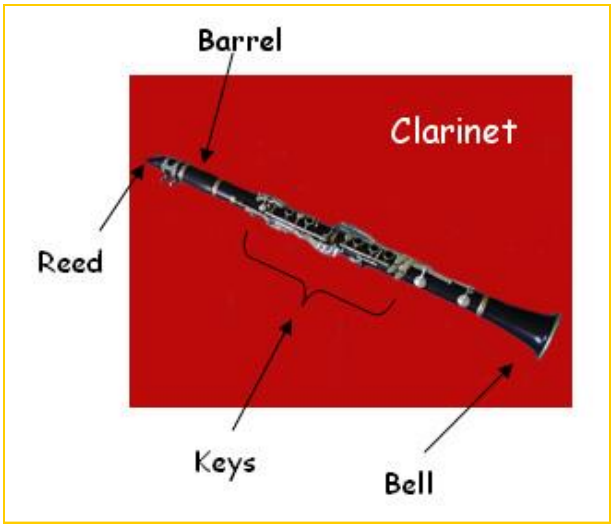
The flute has a wide range of tone and pitch. The flute often plays very technical solos as well as long lyrical passages. The sounds of the high notes are high and bird-like. It is the most flexible of all the woodwinds, capable of very fast runs and trills. There are usually two flutes in an orchestra.



Piccolo

Piccolo (Play Track 12 on the audio CD for its sound.)

The word piccolo in the Italian language means "little." The piccolo is sometimes called the "little flute" because it is a smaller relative of the flute. It is pitched an octave higher than the flute and can be made of wood, silver, or alloys. This tiny instrument is fingered and blown just like a flute. Although its lowest notes are very weak, the shrill highest notes can be heard even above the largest orchestra. There is usually only one piccolo in an orchestra.

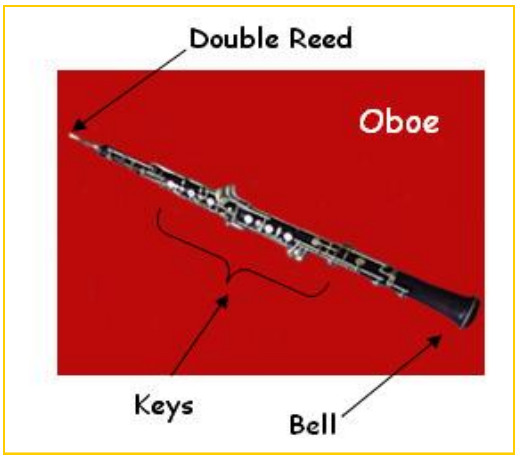


Clarinet

Clarinet (Play Track 13 on the audio CD for its sound.)

The clarinet is a single reed instrument. It was developed in Germany over 300 years ago, based on an older instrument called the *chalumeau*. The 26 inch long instrument can be made of wood, ebonite, or plastic, and is usually black in color. In order to produce sound, a reed made of cane must be attached to a mouthpiece. The air that is blown by the player causes the reed to vibrate against the mouthpiece to make the sound. In the 1840's the Boehm system of keys was added to the clarinet.

With a range of four octaves, the clarinet has the widest range of all the woodwind instruments. It is also capable of playing a wide variety of styles of music from classical to jazz. Among its many flexible tones and registers are warm, mellow sounds and high piercing sounds. There are usually two clarinets in an orchestra.

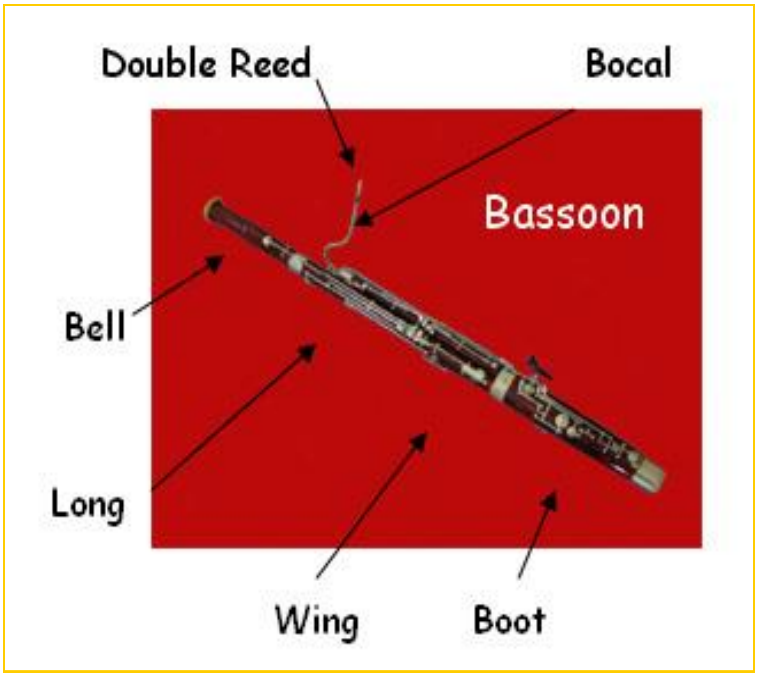


Oboe

Oboe (Play Track 14 on the audio CD for its sound.)

The word oboe comes from *hautbois*, which is a French word meaning "high wood." The first oboe was seen in France about 1660. It is made of wood or ebonite. The 21 inch long oboe is a "double reed" instrument. The double reed consists of two pieces of cane carefully carved and fitted together to vibrate against each other. From a distance, the instrument looks very much like a clarinet except for the double reed.

The oboe is a very challenging instrument to play because of the difficulty of producing a good tone. The sound is made by the vibration of air between the two narrow reeds, which gives it a very plaintive sound. The reed must be soaked in water before it will produce a musical sound. Notes are changed on the oboe by a key mechanism which includes two octave keys. Because the oboe has a very stable pitch, it is a reliable source for the tuning of the orchestra. The orchestra tunes to an "A" sounded by the oboe player. There are usually two oboes in an orchestra.



Bassoon

Bassoon (Play Track 15 on the audio CD for its sound.)

The first example of a bassoon was seen in the 16th century. Like the oboe, it is also a "double reed" instrument but with a low, deep, and mellow voice. At 8 ½ feet long, it is the largest and lowest sounding woodwind. To make it playable, it is doubled over so that it stands 4 feet off the ground. The bassoon is made of wood with a metal crook called a *bocal*, which holds the reed.

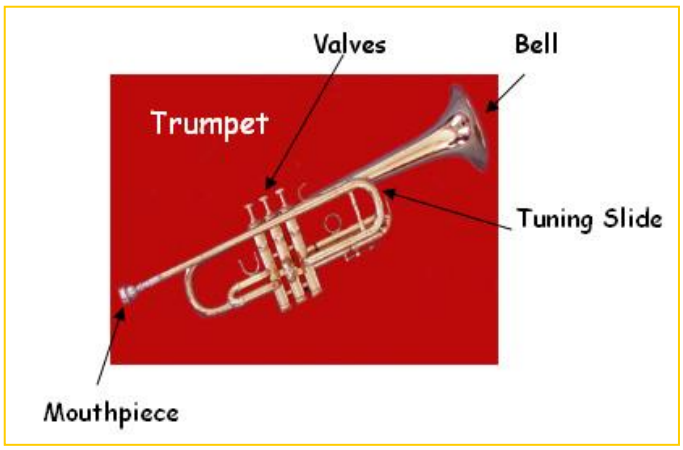
The bassoon is often the backbone of the woodwind section. It has a very versatile and expressive sound and can play both very low and very high. Because of the distinctive sound that is easy to identify - deep, reedy, and nasal – it often plays "the clown" in orchestral music, frequently playing humorous sounding music. The bassoon is also capable of playing very beautifully and soulfully. There are usually two bassoons in an orchestra.

Brass Family

The brass family of instruments can be played both loudly and brilliantly. They are wind instruments which today are made mostly of metal, although some of the older varieties were made out of wood, tusk, animal horn, or shell. They use either cup-shaped or funnel-shaped mouthpieces.

Brass instruments began first as animal horns which were cut off at the smaller end. The earliest known one was the Hebrew *shofar*, made from a ram's horn. It is still used today in Jewish Festivals. Valved instruments were developed in the mid-1800s in Germany. Because they were made largely of brass (an alloy of copper and zinc), they became known as the brass family of instruments. Today they are usually lacquered or silver-plated to make them easier to maintain.

Like the woodwinds, the player uses air to make the sound, except that in brass instruments the player's buzzing lips in the mouthpiece start the air moving. This produces a vibration which sets the column of air in motion within the length of tubing in the instrument. Because the tube is so long, it is bent and coiled so the player can hold it more easily. The pitch is determined by the length of the air column in the tube, which can be changed by opening and closing valves or moving a slide. The player must also use lungs and lips to produce the many different pitches possible in each instrument. Brass instruments provide the dramatic sounds that rise crisp and clear above the rest of the orchestra.



Trumpet

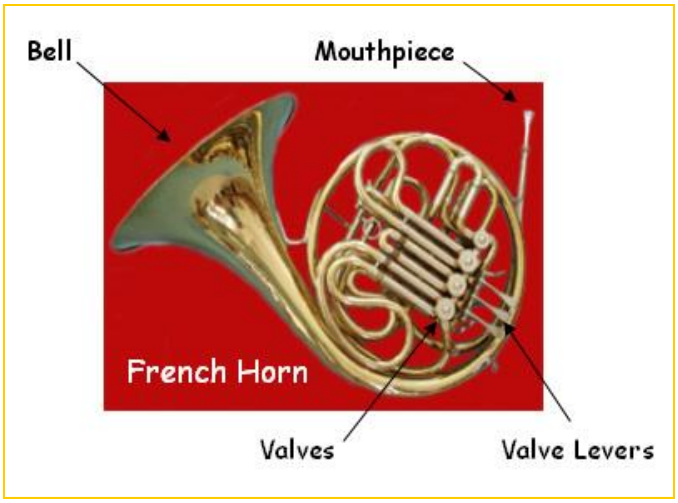
Trumpet (Play Track 16 on the audio CD for its sound.)

One of the most dominant of all the instruments in the orchestra is the trumpet. As the soprano voice of the brass family, it is the highest pitched of the brass instruments. Its brilliant sound produces high brassy notes. Sometimes the player uses a mute to make a completely different sound. There are many types of mutes, each with its own sound.

The first trumpet was used in Egypt 4,000 years ago but it did not have valves. Throughout the years since then, the trumpet has been connected with nobility and fanfares. It also plays an important role in marching bands and in jazz music.

The trumpet of today is made of 4 feet of coiled tubing. Trumpet players buzz their lips into a cup-like mouthpiece to make the sound. Three valves are used to open and close different lengths of the trumpet tubing to allow the player to change pitches. The player can also change pitches by tightening or loosening his/her lips.

The trumpet usually carries the melody when playing in the orchestra. There are usually two or three trumpets in an orchestra.

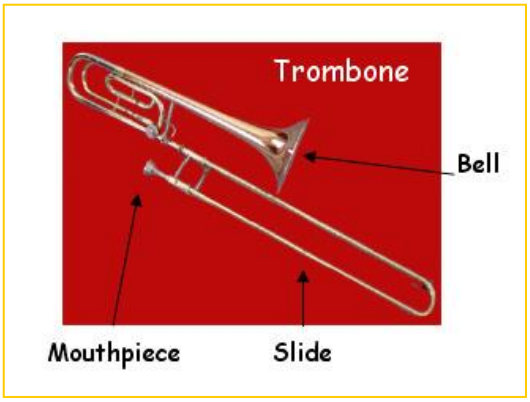


Horn (French Horn) (Play Track 17 on the audio CD for its sound.)

The most mellow-sounding, middle voice of the brass section is the horn. It is a softer member of the brass section and its velvety tone blends well with strings and wood-winds. Its quality can also be full and bold, making it a very versatile instrument.

Originally horns were used for hunting and signaling. The first natural horn, using no valves, was documented in about 1550. Valved horns did not appear until the early 1800's.

The horn, consisting of 16 feet of long coiled tubes, is four times as long as the trumpet. It is usually made of brass but it has more conical tubing than the trumpet or trombone. Like the trumpet, the players use their lips and valves to change pitches. The horn player places his/her right hand inside the bell of the instrument. Because the funnel-shaped mouthpiece is so small, many consider the horn to have unique challenges for the player. There are usually four or five horns in an orchestra.

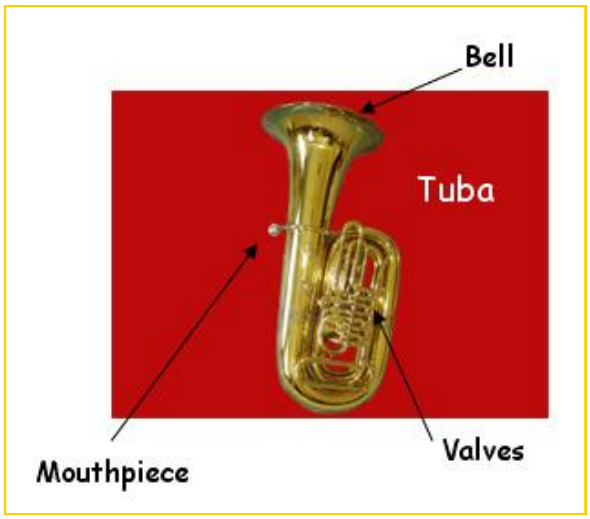


Trombone

Trombone (Play Track 18 on the audio CD for its sound.)

Although the trombone is a loud and brassy-sounding instrument, it has a deep, rich, full sound, the sound of grandeur and nobility. The trombone is the tenor voice of the brass section. It was first seen in the 15th century, making it the oldest instrument of the modern brass family. Today, it also plays an important role in jazz music.

The trombone is made of brass and uses a mouthpiece. The trombone is the only member of the brass family that does not have valves. It produces notes by a slide, which is actually two brass tubes which fit into each other. The player moves the outer one in and out to change the pitches. The pitch changes according to the length of tubing the air passes through, from the player's lips to the bell at the other end of the instrument; the greater the distance the air travels, the lower the pitch. This makes it challenging to play smooth and fast but it allows the trombone player to slide over many notes, which is called a "glissando." There are usually three trombones in an orchestra.



Tuba

Tuba (Play Track 19 on the audio CD for its sound.)

The tuba is the largest, lowest sounding, and youngest instrument in the brass section. It produces a full, rich and powerful tone that provides a rhythmic and harmonic pulse for the orchestra, and not much melody. However, in *Tubby the Tuba*, one of our featured pieces, the tuba does serve an important melodic role. The tuba is used in marches and other compositions where it is important to have a strong beat and bass line.

The tuba rests on the player's lap. Stretched out straight, the tube of a tuba could be as long as 35 feet. The player uses a mouthpiece and has four or even five valves to help change the pitches. Tubas can be made in many different shapes and ranges. The tuba is used in the orchestra to provide foundation for the harmony. There is usually only one tuba in an orchestra.

Percussion Family

Today we use percussion instruments in an orchestra to add special effects. The percussion family has the biggest variety of instruments and is the loudest in the symphony orchestra. Percussion instruments can be struck, scraped, or shaken. There are two basic types, pitched and unpitched.

Unpitched percussion instruments can make only one sound or one pitch at a time. For drums, the tightness of the stretched material affects that single pitch. The size of it can also affect the pitch. The quality of sound can be changed by hitting the instrument in different places. Pitched percussion instruments can produce different notes (pitches). The only drums that are pitched are the timpani because they can be tuned to different pitches.

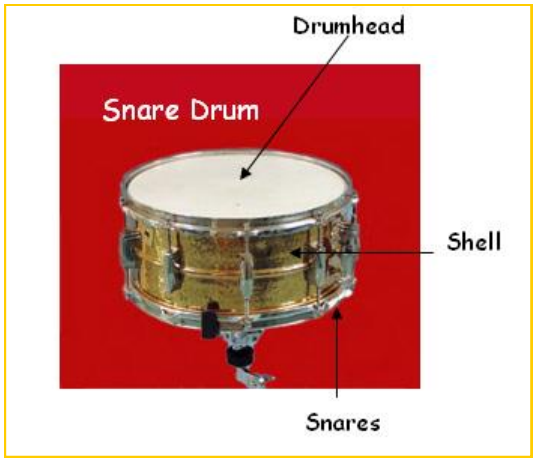
Percussion instruments are the oldest instruments used by people for making sounds. 8,000 years ago people hit things together, beat on their chests, or clapped their hands to make sounds. Soon they used these sounds to send messages which could be heard a long way away. Many times they made sounds with special rhythms for ceremonies and religious services.

The earliest drums were probably dried animal skins stretched over hollow logs. They also made rattles using small stones. Much later, in medieval times, a type of snare drum was used to send coded messages to soldiers.

Bass Drum

Bass Drum (Play Track 20 on the audio CD for its sound.)

The bass drum is a large, cylindrical drum which is typically 32 inches across the head; the bass drum is used to keep a pulse in music, especially in marches.



Snare Drum

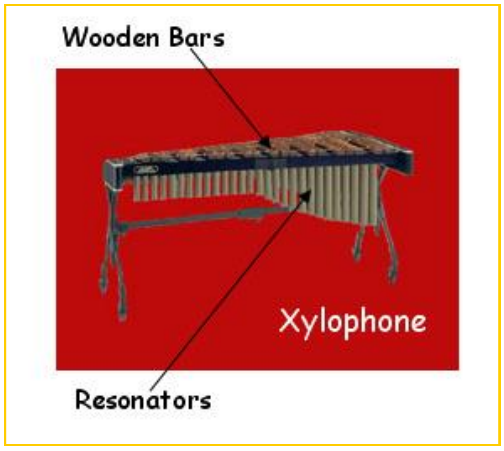
Snare Drum (Play Track 21 on the audio CD for its sound.)

A snare drum is used for drum rolls or for adding accents to music. It has drumheads stretched across both the top and the bottom of a short cylinder. Steel wires called snares are stretched across the bottom drumhead, and these rattle intensely when the drum is played. The snares can be turned off for special effects. Two sticks are used to play different rhythms on the drum. The orchestral snare drum has a diameter of 15 to 16 inches and a depth of 5 inches.

Timpani

Timpani (Play Track 22 on the audio CD for its sound.)

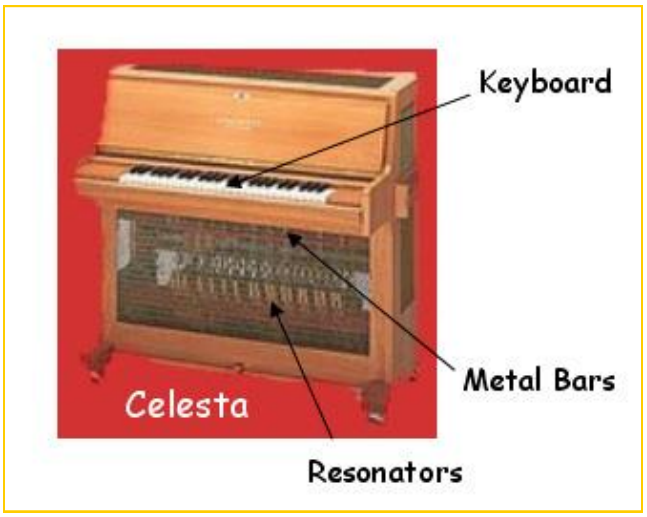
Timpani are copper "kettle" drums which can be used in drum rolls. They can be tuned to certain notes during a concert by tightening or loosening the tension of the drumheads with pedals. They have a range of more than a dozen pitches. Usually there are three to five timpani of various sizes in the orchestra.



Xylophone

Xylophone (Play Track 23 on the audio CD for its sound.)

The xylophone is a four-octave mallet percussion instrument with wooden bars tuned to produce a chromatic scale. Underneath the wooden bars are tubes called resonators. It is played with moderately hard small mallets.

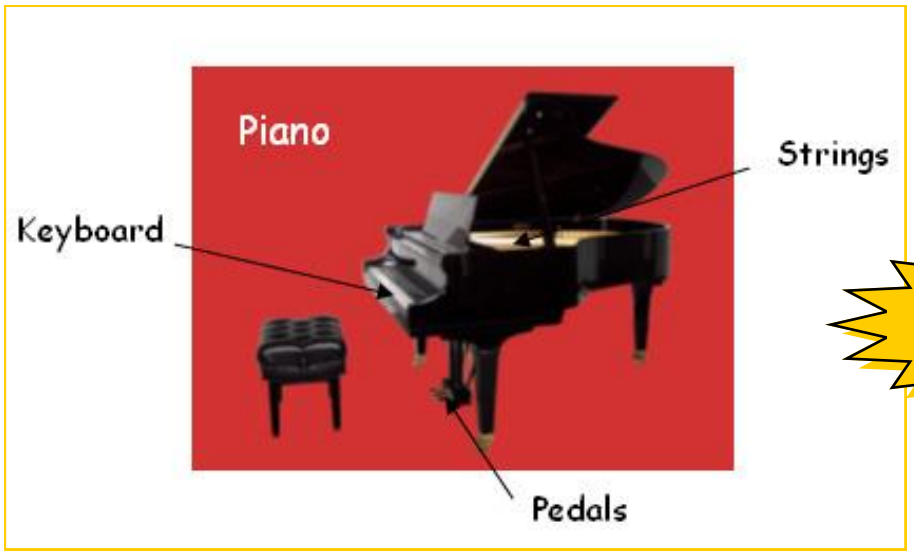


Celesta

Celesta (Play Track 24 on the audio CD for its sound.)

The celesta looks like a little piano but it does not have strings. It is played using a keyboard which cause mallets to strike metal bars that are hung over resonators. Like the piano, it uses a damper pedal to stop the bars from vibrating. It has a range of five octaves. It sounds somewhat like a glockenspiel or high-pitched bells.

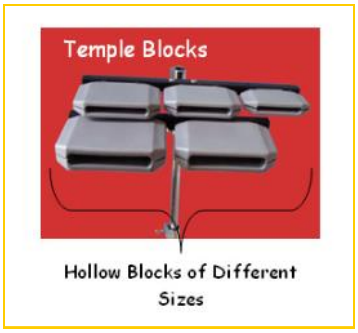
The celesta was invented in France in the late nineteenth century.



Piano

Piano (Play Track 10 on the audio CD for its sound.)

An instrument with a manual keyboard, the piano was invented in the early 1700's. When its keys are pressed, hammers strike strings of different lengths/ thicknesses attached to a soundboard. This causes the strings to vibrate, producing sounds that may be softened or sustained by the use of pedals. Alternatively, the piano may be considered a member of the String Family. (See String Family)

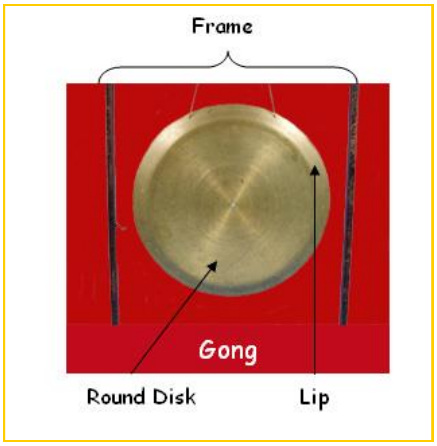


Hollow Blocks of Different Sizes

Temple Blocks

Temple Blocks (Play Track 25 on the audio CD for its sound.)

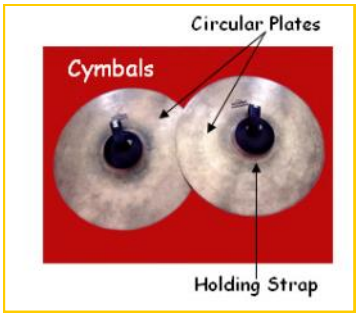
Temple Blocks are a set of five hollow blocks in different sizes and pitches, carved into oval shapes with slits in them. They generally are made from a hard wood, such as ash or camphor which gives them a deep sound. However, today synthetic materials are sometimes used. The blocks are played with soft mallets or drum sticks.



Gong

Gong (Play Track 26 on the audio CD for its sound.)

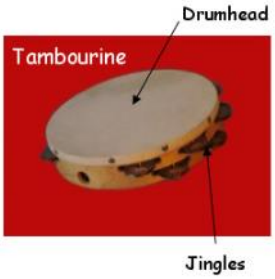
A gong is a large circular metal disk, usually suspended from a frame, which is struck with a padded mallet. In addition to the metal from which it is made, its shape, with a lip curled up on the rim, gives it a distinctive sound.



Cymbals

Cymbals (Play Track 27 on the audio CD for its sound.)

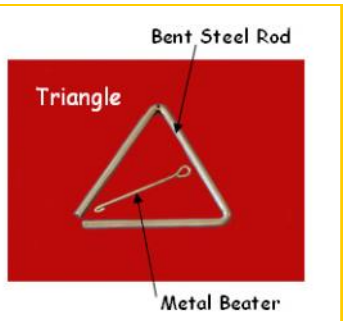
The cymbals consist of two concave circular brass plates (16 to 22 inches in diameter) which can be hit together to make a loud crashing sound. It can also be a suspended single plate that can be hit with a drumstick.



Tambourine

Tambourine (Play Track 28 on the audio CD for its sound.)

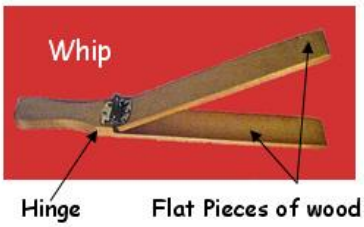
A tambourine is a small shallow hand drum with mini cymbals attached into its circular frame, usually played by shaking and/or striking with the hand. It can also be mounted on a stand.



Triangle (Play Track 29 on the audio CD for its sound.)

Triangle

A triangle is a steel rod bent in the shape of a triangle, open in one corner, which is suspended to enhance the sound when it is struck with a metal bar.



Whip (Slapstick) (Play Track 30 on the audio CD for its sound.)

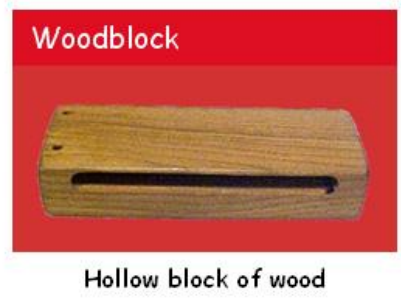
Whip

A whip, also known as a slapstick, consists of two flat pieces of wood that are hinged together at one end. The pieces of wood are about 12 inches long. By snapping them together it makes a whacking sound like the cracking of a whip.

Castanets (Play Track 31 on the audio CD for its sound.)

Castanets

Castanets are made from two shells, pieces of ivory, or hollowed out hard- wood, held in the palm of the hand by a connecting cord over the thumb and forefinger and clapped together with the fingers. They can also be attached to a handle for ease in playing.



Woodblock (Play Track 32 on the audio CD for its sound.)

Woodblock

A woodblock is a partially hollowed out block of wood that is struck with a drumstick. It is sometimes called a Chinese Block.

Note: There are many more percussion instruments. We have described some of the most commonly used ones here. During an orchestra concert, a percussionist may play as many as a dozen different instruments if needed. There is usually one timpani player plus two or more percussionists in an orchestra.

History of the West Virginia Symphony Orchestra

Earliest Known Picture of the Former Charleston Symphony Orchestra (Now the West Virginia Symphony Orchestra)

The West Virginia Symphony Orchestra began 75 years ago as the Charleston Civic Orchestra. The first conductor was William R. Wiant. The first concert was given in the Charleston Municipal Auditorium on November 14, 1939. In 1943, the original name was changed to the Charleston Symphony Orchestra. Since 1988, the orchestra has become well-known in the United States as the West Virginia Symphony Orchestra.

Over the years many famous musicians such as James Galway, André Watts, Yo-Yo Ma, and Kathleen Battle have performed with the symphony.

Including Mr. Wiant, the orchestra has had nine conductors. The West Virginia Symphony Orchestra's current conductor is Maestro Grant Cooper, who began leading the orchestra in 2001.

The original Children's concerts became the Young People's concerts in 1968 and have continued every year to the present time.

Today the orchestra also has a chorus and a string quartet, called the Montclaire String Quartet.

An exciting new chapter began in the fall of 2003 when the orchestra moved to the Clay Center for the Arts & Sciences – West Virginia.

List of Audio Tracks on Audio Companion

Track 1: Tubby's Tune
Track 2: Tubby's Pretty Tune
Track 3: Theme of Purcell
Track 4: Theme of Purcell (Full Orchestra)

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Track 6: Viola
Track 7: Cello
Track 8: Double Bass
Track 9: Harp
Track 10: Piano

Woodwind Family:
Track 11: Flute
Track 12: Piccolo
Track 13: Clarinet
Track 14: Oboe
Track 15: Bassoon

Brass Family:
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Track 17: Horn
Track 18: Trombone
Track 19: Tuba

Percussion Family:
Track 20: Bass Drum
Track 21: Snare Drum
Track 22: Timpani
Track 23: Xylophone
Track 24: Celesta
Track 25: Temple Blocks
Track 26: Gong
Track 27: Cymbals
Track 28: Tambourine
Track 29: Triangle
Track 30: Whip
Track 31: Castanets
Track 32: Woodblock

Please note that each track has been formatted as an MP3 file and may be played on a CD Player, computer, or any other device that supports MP3 files.

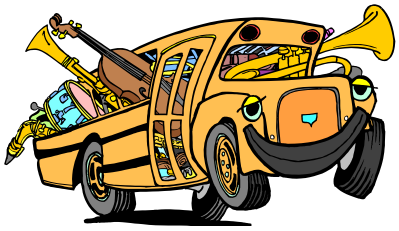
Glossary Words

Accent(s) - stressing a note or chord, by increasing the volume or extending the duration of it; stressed notes
Accompaniment (accompanied) – a vocal or instrumental part that supports the main part; supported a main part
Alloy – material made up of two different metals mixed together
Alternative- when you can choose one of two or more things
Alto – an instrument with a range just below the highest range reached by that family of instruments; between the soprano and tenor parts
Ancient - referring to the time in history from the beginning of the earliest known civilizations and ending with the fall of the Roman Empire in about the year 500
Aperture – an opening, hole
Applauds (applause) – praise or approval usually shown by clapping hands
Avoid - to stay away from; escape
Balance(d) – a satisfying proportion or harmony between all of the parts
Bass – the lowest-pitched member of a family of instruments; the lowest part in a musical composition
Beat(s) – pulse(s) of a rhythm in music
Bell – cup-shaped or flared opening of a wind or brass instrument
Bocal - a metal crook which holds the double reed on a bassoon
Bow – a narrow, slightly curved rod, pointed at one end, about 30 inches long, with horsehair stretched from end to end; used for playing an instrument in the string family, such as a violin
Brilliant(ly) – having crisp, clear tones; playing with crisp, clear tones
British – connected to the country of Great Britain or its people, language, or culture
Brooding – being deep in thought about something; to be somewhat depressed
Chalumeau – a simple, rustic, reed pipe with 6 to 8 finger holes, used in the 17th and 18th centuries; the ancestor of the clarinet; today a term used to describe the lowest notes of a clarinet
Characteristic(s) – feature(s) that helps to describe something in order to identify it; particular quality or trait
Chromatic - going by half steps (or semitones) of the scale (all 13 notes from one scale letter name to the next), instead of the regular intervals of the diatonic 8 note scale
Circular – being in the shape of a circle or ring
Classical - the name for a period in music history from the late 18th through early 19th centuries, known for music where balance, a clear style, and moderation were important; art songs, chamber music, operas, and symphonies were important styles of music during this time
Coiled – twisted into spirals or rings that look like a coil
Composition(s) - written musical work(s), often long and detailed; the structure of a written piece of music
Concave - curving inward like the inside of a bowl
Concert(s) – public performance(s) of music by instrumentalists, singers, or both
Concertmaster - the first violinist in a symphony orchestra; often the assistant to the conductor
Conical – shaped like a cone, round and tapering to a point
Coordinate – to bring together; to musically agree
Cues – gives a signal
Cylindrical - having the shape of a tube
Distinctive – having identifying aspects that are separate or different, making it important; something that stands out or apart
Double reed – two thin pieces of cane bound together at their thicker ends; also a class of instruments including the oboe and bassoon
Drumhead(s) – parchment or skin that is stretched over the end(s) of a drum
Dynamics - varying degrees of loudness or softness in a musical work, and the symbols that indicate them
Ebonite – a hard, black rubber which can be cut and polished
Ebony – a tropical tree found in southern Asia that has hard black heartwood
Effective – producing the desired result

Embouchure Hole - the opening in the mouthpiece of a flute or piccolo
Emphasis – stress or forcefulness on a single beat to make it stand out or be important
Enhance(ment) – to improve the value of something; make it more attractive or pleasing
Etiquette – usual rules for acceptable behavior in public
Evaluation – to look at (or listen to) and decide on the value or worth of something
Fanfare – a short, but loud and lively, piece of music played by brass instruments, usually trumpets
Fingerboard – the narrow part of most stringed instruments (such as a violin) where the fingers press the strings to change pitches
Flexible - To be able to bend freely without harm; to be available at many different times
Form - the design or structure of a musical composition
Friction – the rubbing of one thing against another
Fugue - a polyphonic composition in which the theme is repeated in different voices at different times
Fundamental – the necessary part of any system or; the first or lowest note in a series of notes
Glissando - a rapid slide through a series of consecutive tones in a scale-like passage
Grandeur – being magnificent, great, splendid, stately
Harmony (harmonies) (harmonic) - related to the structure, progression, and relationship of chords
Horsehair – hair from the mane or tail of a horse, used in making bows to play stringed instruments
Improvise(d) (Improvisatory) - making up music on the spot without preparing it previously; creating a new variation on a melody
Interpret(ed) (interpretation) – to show the meaning by performing a musical work; to represent the meaning
Interrelated - to be connected together
Lacquered – made smooth and shiny with a clear coating; made glossy
Liturgical – having to do with prayer and worship in a public place
Lute – an early stringed instrument with a pear-shaped body, a neck, a bent back, and a fingerboard with frets, that is played by plucking the strings with the right hand
Lyre(s) – stringed instrument(s) in the harp family, used by Greeks in ancient times to accompany a singer or someone reading poetry; stringed instrument(s) having two curved arms connected at the upper end with a crossbar
Lyrical – something that suggests singing with deep emotion
Major – referring to a scale from one key note to the next, consisting of all whole steps, except for half steps between the third and fourth notes and seventh and eighth notes; going from C to C on all white keys of a piano
Mallet(s) – light hammer(s) with rounded head(s) used for playing certain percussion instruments
Manual – a keyboard of an organ, harpsichord, or piano that is played with the hands
Mechanism – the way the parts of something work together to produce the effect wanted; the physical process involved for an action
Medieval – related to the time of the Middle Ages, primarily in Europe between 476 and 1453 A.D.
Melancholy – very serious or thoughtful; showing sadness or gloom; somber
Mellow – soft and rich in quality
Melody - an orderly succession of pitches; tune
Meter – basic grouping of beats and accents within the measure as indicated by the meter signature
Minor - referring to a scale from one key note to the next, consisting of all whole steps, except for half steps between the second and third notes, sometimes between the fifth and sixth notes, and sometimes the seventh and eighth notes depending upon whether it is the natural (going from A to A on all white keys of a piano) or melodic minor scale; the harmonic minor scale has a step and a half between the sixth and seventh notes
Mode(s) - scale pattern(s) consisting of set intervals of whole and half steps; the patterns upon which medieval music was structured, preceding major and minor scales
Modern - relating to the present time; not in the past
Mute – a device placed in (or on) an instrument to muffle or soften its tone
Nobility – being of high rank or born into a class of privileged people
Notation – a system of written musical notes, rests, and other symbols to indicate pitch, rhythm, and other directions for performers
Opera(tic) – a drama set to music; related to an opera
Opportunity(ies) - the chance to get ahead; a favorable possibility
Origin(ate) (originated) (original) (originally) – first or at first; to start or begin to exist

Overhand - with the hand turned palm down
Participate (participating) - become a part of something; get involved
Pitch(es) – highness or lowness of note(s), determined by how often and how fast the vibrations move
Pizzicato – an Italian word that means to play by plucking rather than bowing the strings
Plaintive – sad or expressing suffering or woe
Planetarium – a room containing an instrument for projecting images of celestial bodies onto a domed ceiling
Platinum – a rare and expensive, hard metal used to make parts of some flutes
Podium - a platform raised above the level of the floor so the person on it can be seen
Progression – a set pattern of chords which often repeats
Range – the total number of tones that an instrument can produce; or, the full variety of different activities
Recording(s) - to keep permanently: either in writing or by sound or video
Reed – a small, vibrating strip of cane or wood attached to the mouthpiece of some woodwind instruments, which makes a tone when air goes over it
Rehearse(d) (rehearsal) – practice alone before giving a public performance; or, to train a group before an appearance
Repertoire – a French word meaning the list of musical pieces a group is prepared to perform or can perform
Representations (representing) – ways to express something; make realistic likenesses; ways to stand for something; to make mental images of something
Resin – product coming from spruce and pine trees, which is distilled and made into resin; high quality pine resin is used as bow rosin
Resonant (resonator) – having deep and strong tones; a hollow tube, open at both ends, which can magnify sound
Scale – a series of notes, going up or down in a definite order of half steps and whole steps
Score – directions for a musical piece; the notation for each instrument, written as separate parts but lined up vertically as they will sound
Shofar – a Hebrew word meaning an ancient, natural trumpet made from a ram's horn; played during religious ceremonies and as a warning in battle
Snares – wires or cords stretched across a drumhead to vibrate against it
Somber – sad; gloomy; serious
Sorcerer - one who practices magic; a wizard
Soulfully – expressing deep emotions
Soundboard – a thin board placed in a string instrument to strengthen its tones by vibrating
Structure(d) – way the parts are put together to make the whole thing; the organization of something
Style(s) - manner(s) of presentation, especially in music; the choices that a composer or performer makes from among the available possibilities
Suspended – hanging freely except where supported from above
Sustained – continuing for a long time without becoming weaker
Symphonic - relating to the symphony in sound or characteristic
Technique(s) – method(s) used to accomplish a goal
Tenure – time during which a position or job is held
Theme (Thematic) - the main melodic phrase in a piece; a tune assoc. with a character in a story; related to the melody
Theory - the general principles of an art or science, as the theory of music; the study of the way music works
Timbre – a French word meaning tone color or quality
Tone(s) – the particular quality of a sound including pitch, length, color, loudness, and expression
Topic(s) - the subject of a story or a conversation; theme
Traditional - practices that have been going on for generations and are passed down
Trait – a feature that is a distinguishing quality
Transform(s) (transformed) – change the appearance, form, or nature of something
Tubular – shaped like a pipe or tube
Tusk – a very long, pointed tooth of animals such as an elephant, walrus, or wild boar
Unique – the only one like it
Valuable - having great importance based on quality or money
Valved – brass instruments using devices which can quickly change the air flow through a shorter or longer length of tube in order to change the pitch of the tones
Velvety – a smooth and soft sound, like velvet
Versatile – able to do many different things well
Vibrate (vibrating) (vibration) – move back and forth quickly and regularly, usually resulting in a sound
Vital - necessary to maintain a function

Music, Social Studies and Health Lesson Plan



Grade Level(s): Kindergarten, First, and Second

Lesson Title: Safe Satisfying Symphony! Concert Etiquette and Travel Safety

Focus: (Concept or skills to be emphasized) Rules, critical thinking

Objectives: See end of lesson for objectives and standards achieved.

Background Information: Proper concert etiquette is important so that the entire audience can enjoy their concert experience, and so that the performers can give their best possible performance. Additionally, students and adults must have a set of rules in place to travel to and from the concert safely. Be sure to read the "Concert Etiquette" section of this guide.

Activities (Procedures):

1. You may choose to read the full list in the "Concert Etiquette" section of this guide with your students.
2. Read the Concert Guidelines section of the Student Study Guide with your class. Talk about the importance of following all of these rules while listening to the performance so that everyone can enjoy the concert. In small or large groups, ask your students to role-play proper and improper behaviors during a concert, using the Concert Guidelines as a starting-point. Afterward, have the students discuss why it is important to show proper behavior during a concert performance.
3. Discuss some of the situations that students may experience when traveling to and from the concert. As a class, formulate a set of guidelines that students should follow to maintain their safety (e.g., stay in seats while traveling, staying in a group or with a "buddy", listening to directions given by adults, etc.). In a whole-group, write the set of travel safety guidelines on the Concert Guidelines worksheet. For younger students, compile the list of rules and distribute photocopies or print them on large mailing labels and stick them onto the Concert Guidelines section of the Student Study Guide.

Extension Activity: Compare and contrast the travel safety guidelines students came up with as a class with safety rules in the home, on the playground, in public places, while traveling in a vehicle, etc.

Modifications (Special Needs):

1. Visual and auditory impaired students will need special consideration during this lesson with grouping adaptations.
2. Learning disabled students may benefit by partnering with another student.
3. Varying learning styles will be addressed with the variety of activities in this lesson – tactile, visual and sensory learning styles are utilized.
4. Gifted student needs are provided through the extension activity.

Assessment/Evaluation:

1. Identify your Formative Evaluation Plan: The teacher will observe the group discussions. The teacher will observe participation in Concert Guidelines activity.
2. Identify your Summative Evaluation Plan: Teacher observation notes and the receipt of travel guidelines will show the teacher if the concepts introduced were processed by the students. A follow-up to this lesson can be assumed by the extension activity.

Supplemental Materials and Equipment Needed: Pencil/pen; Student Study Guide

Resources:

Reducing the risk of injuries:
http://www.cpsc.gov/cpscpub/pubs/pub_idx.html;
Safe Schools, Healthy Students
http://sshs.samhsa.gov/
Child passenger safety:
http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.9f8c7d6359e0e9bbbf30811060008a0c/
Playground safety:
http://www.uni.edu/playground/home.htm
Fire safety resources:
http://www.usfa.fema.gov/kids/

National Standards Achieved: Science

Standard F: Personal Health

WV Content Standard Objectives: 21st Century standards are distributed separately.

Kindergarten

GM.K.4.2 discuss and demonstrate proper concert etiquette.
SS.K.1.3 identify the need for rules and the consequences for breaking rules and how to resolve disagreements peacefully.
SS.K.2.1 explain why rules are important and participate in developing rules.
HE.K.3.3 demonstrate safety procedures (e.g., street crossing and fire drills).
HE.K.3.5 identify actions that might lead to accidents or dangerous situations at school or in the community.

First-Grade

SS.1.1.3 participate in developing classroom rules and identifying consequences of breaking rules.
SS.1.1.7 demonstrate and give examples of appropriate behavior in dangerous situations (e.g., fire, poison, traffic, strangers and drugs).
SS.1.2.4 recognize the need for authority figures.
HE.1.3.4 identify and follow safety rules (e.g., playground, water, electrical).
HE.1.3.5 demonstrate how to perform basic self-care/safety procedures (e.g., fire/weather drill, bus and auto safety skills).

Second-Grade

SS.2.1.3 model the personal responsibilities of good citizenship in the classroom (e.g., responsibility, self-control).
SS.2.2.3 recognize the need for authority figures and identify the characteristics of responsible leaders.
HE.2.3.1 describe behaviors and habits that may be dangerous at home, on the playground, or in the community.

Music and Math Lesson Plan

Grade Level(s): Kindergarten, First, and Second

Lesson Title: Patterns in Music

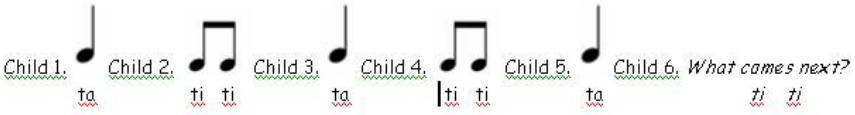
Focus: (Concept or skills to be emphasized) Rhythm, melody, theory, listening, recognition of repeating patterns

Objectives: See end of lesson for objectives and standards achieved.

Background Information: Patterns of many kinds can be found in music. Examples of patterns: the rhythm you might hear from a drum, the repeating chorus you might sing in a song, or a repeating melody or rhythm you might hear in an orchestral performance. Repeating patterns can be seen in the written score of the music and can be heard during a performance. Notes can go up or down in pitch and change value in duration to form a musical pattern that can be seen in printed music and heard when it is performed. Of the attributes that can change in musical patterns, this lesson will focus primarily on rhythm. This lesson uses the two main tunes found in "Tubby the Tuba," the original *Pretty Tune* and *Tubby's Tune* that he learns from the Bullfrog.

Activities (Procedures):

1. Prior to this lesson, cut around the hash marks of the "Sample Notes and Rests" and "Sample Rhythm Patterns" found at the end of this lesson. Enlarge and reproduce each one on a single sheet pf 8.5 x 11 paper. (Make 6 copies of each of the individual "Sample Notes and Rests.") Show students the half, quarter, and beamed eighth notes. Explain/review their values. Show students several examples of repeating musical patterns from the "Sample Rhythm Patterns." Have the class clap a quarter note pulse while they verbalize each pattern using Kodály syllables (ta (♩); ti ti (♫); ta-a (𝅗𝅥); etc.)
2. Tell students they will be using notes to make patterns. Ask for six volunteers to stand at the front of the class. Provide five of the students with large musical notes in a simple repeating pattern. Ask students to help identify what note(s) would come next in the pattern.



Once the pattern is complete, have students verbalize the rhythm. For example:

3. Ask for a new set of volunteers and repeat several times with different patterns, perhaps longer or more difficult.
4. Divide the class into several groups. Ask each group to create a different pattern and then present it at the front of the class. Tell two (or more) groups with different patterns to

5. Tell students that there are repeating patterns in most music. Explain that patterns can be *seen* in written music and *heard* when it is played. Have students open their Student Study Guides to the "*Pretty Tune* and *Tubby's Tune* - Patterns Worksheet." Notice that both of these tunes are all Ta and Ti Ti patterns. Have students look for the repeating rhythm patterns in the written music of the *Pretty Tune* and *Tubby's Tune*. (See the end of this lesson plan for the Answer Key.) After they have found the patterns, play Track **2**, *Pretty Tune*, and Track **1**, *Tubby's Tune*, found on the enclosed Audio CD. Ask students to **listen** for the patterns they have found on the worksheet.

Modifications (Special Needs):

1. Visual and auditory impaired students will need special consideration during this lesson with seating and materials adaptations.
2. Learning disabled students may benefit by abbreviating this lesson's content and length.
3. Varying learning styles will be addressed with the variety of activities in this lesson – tactile, visual and sensory learning styles are utilized.
4. Gifted student needs are provided through the creative aspect of the pattern development.

Assessment/Evaluation*:

1. Formative Evaluation Plan: The teacher will facilitate discussion and observe student participation. During the completion of the "*Pretty Tune* and *Tubby's Tune* - Patterns Worksheet", the teacher will address the understanding of the assignment.
2. Summative Evaluation Plan: The teacher will assess the understanding of the pattern sequencing through observation notes. The teacher will evaluate the accuracy of the completion of the "*Pretty Tune* and *Tubby's Tune* - Patterns Worksheet."

Supplemental Materials and Equipment Needed: A copy of the WVSO Audio CD; Player able to play CD; Reproduce copies of notes found at end of lesson – at least 6 of each; Copies of Student Study Guides for each student; and red and blue colored pencils or fine markers for each student

Resources:

General information on music and music notation, geared toward young children:
http://www.sfskids.org/templates/home.asp?pageid=1
General information on music and music notation, geared toward adults:
http://library.thinkquest.org/15413/theory/theory.htm

References:

Organization of American Kodály Educators. (Last updated: May 26, 2004). Moorhead, MN. Retrieved from http://www.oake.org/.

Winslow, R. W., Dallin, L. & Wiest, S. B. (2001). Music Skills for Classroom Teachers (9th edition). New York: McGraw Hill.

National Standards:

Music

Reading and notating music.
Listening to, analyzing and describing music.
Evaluating music and music performances.

Mathematics

Understand patterns, relations, and functions

- Sort, classify, and order objects by size, number, and other properties
- Recognize, describe, and extend patterns such as sequences of sounds and shapes or simple numeric patterns and translate from one representation to another
- Analyze how both repeating and growing patterns are generated

WV Content Standard Objectives: **21st Century standards are distributed separately**.

Kindergarten

GM.K.2.3	read notation for quarter notes, quarter rests, and beamed eighth notes.
GM.K.2.6	distinguish between same and different musical phrases.
MA.K.2.2	identify, describe, and extend a repeating pattern found in common objects, sound, and movement.

First-Grade

GM.1.2.1	read beamed eighth notes, quarter notes and rests.
GM.1.2.3	identify same and different sections of music.
MA.1.2.2	analyze and create a repeating pattern using common objects and numbers.

Second-Grade

GM.2.2.3	read rhythmic notation in 2/4 and 4/4 meter.
MA.2.2.1	analyze, describe, extend and create a growing pattern.
MA.2.2.4	given the rule, complete the pattern.

*All Assessments are to be at the expected state assessment standard at the mastery level.

Pretty Tune and *Tubby's Tune* - Patterns Worksheet - Answer Key

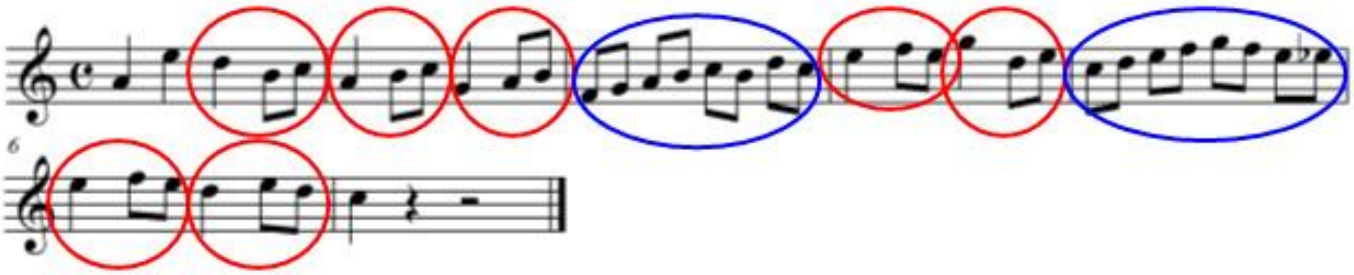
In "Tubby the Tuba," Tubby wants to play the *Pretty Tune* like the other instruments. Later he has his very own tune.

Do you see the *Pretty Tune* written below? Look very carefully to see if you can find some patterns that repeat over and over.

Draw **red circles** around each of the 3-note rhythm patterns that are repeated several times in *Pretty Tune*.  The first one is circled for you. How many more can you find? (Note: the stems may go either direction.)

Draw **blue circles** around another rhythm pattern that is found two times in *Pretty Tune*.  (Note: the stems may go either direction.)

Pretty Tune



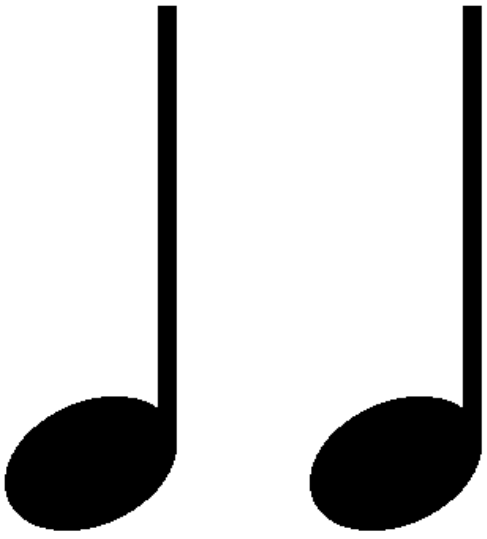
Now study *Tubby's Tune*. Draw **red circles** around the rhythm patterns that are the same as those you circled in **red** in *Pretty Tune*.

Tubby's Tune

Sample Notes and Rests

ta - a

ta



ta ta

ti ti

Sample Notes and Rests

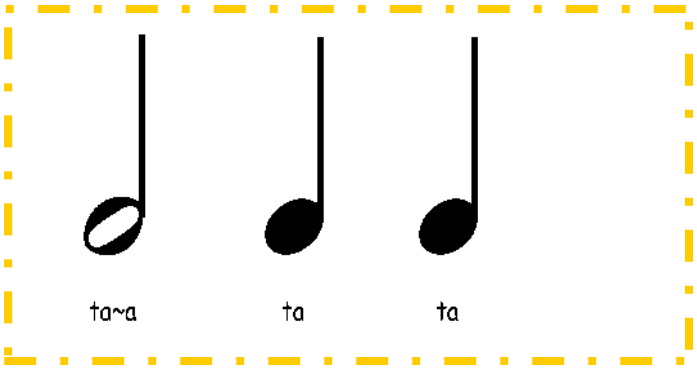
ti ti ti ti

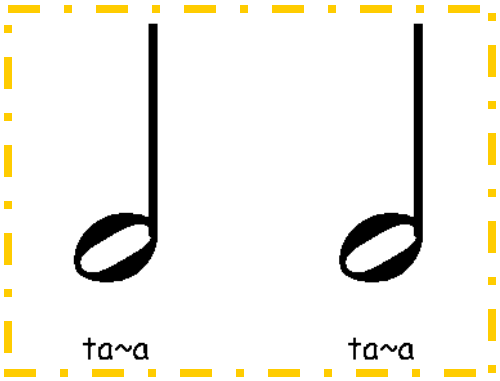
sh - h

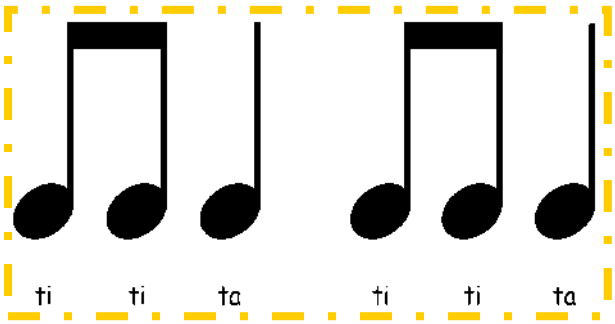
sh

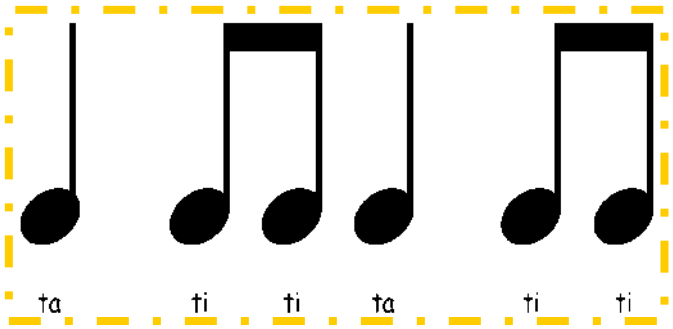
(One clap)

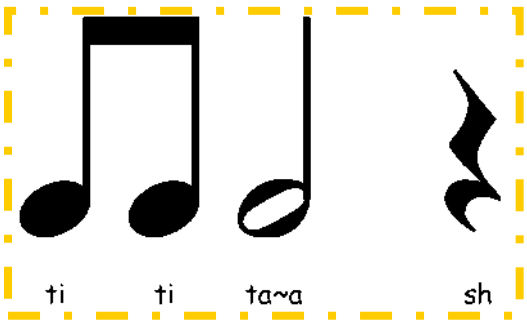
Sample Rhythm Patterns

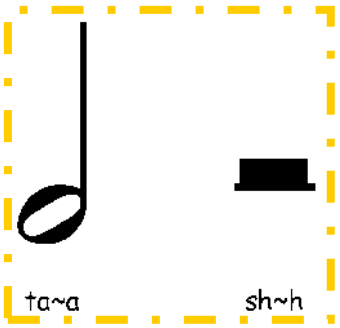








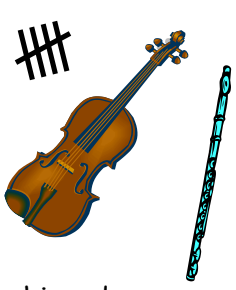


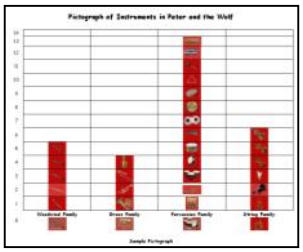


Math and Music Lesson Plan

Grade Level(s): Kindergarten, First, and Second

Lesson Title: Every Instrument Has a Place





Focus: (Concept or skills to be emphasized)
Identifying instruments and classifying objects

Objectives: See end of lesson for objectives and standards achieved.

Background Information: Symphony orchestras vary in size according to the needs of specific pieces of music. The composer determines the instrumentation, although the conductor may alter the number of musicians used, depending upon the performance hall. In the Young People's Concert you attend, under the direction of Maestro Grant Cooper, the orchestra will include many, but not necessarily all of the instruments mentioned in the Orchestral Instruments section of the Student Guide. Some of the instruments that will be used in the WVSO's Young People's Concerts are:

String Family
- Violin
- Viola
- Cello
- Double Bass
- Harp
- Piano

Woodwind Family
- Piccolo
- Flute
- Oboe
- Clarinet
- Bassoon

Brass Family
- French horn
- Trumpet
- Trombone
- Tuba

Percussion Family
- Timpani
- Bass Drum
- Snare Drum
- Xylophone
- Cymbal
- Gong
- Tambourine
- Triangle
- Castanets
- Temple Blocks
- Woodblock
- Whip
- Celesta*

*Although played on a keyboard, a Celesta has no strings

PLEASE NOTE: For the purposes of this lesson, the numbers of instruments are within the usual range of each family. Please tell your students that the actual number of musicians playing each instrument in the concert will probably differ slightly from the examples provided in this lesson.

Activities (Procedures):

1. Read about the instruments of the orchestra with your students in the StudentStudy Guide. Allow students to listen to each of the instruments on the

On the Audio Companion CD so that they become familiar with how they sounds. List the families (string, woodwind, brass, and percussion) played by symphonies on a flip-chart, chalkboard or overhead, and give examples of the instruments that fall within each family (see sample chart format).

String Family	Woodwind Family	Brass Family	Percussion Family

Sample Chart Format

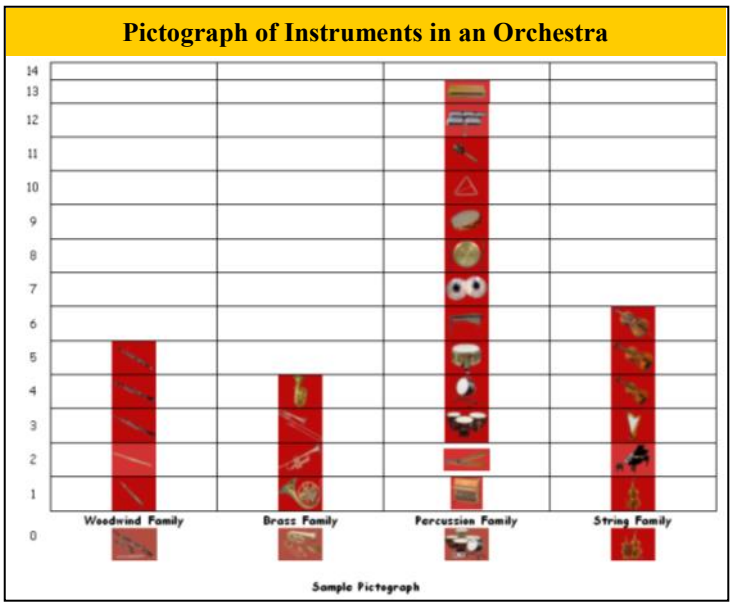
2. Ask each student to name the instrument in the orchestra they would most like to play if they performed in a symphony orchestra. If any students are currently learning to play instruments found in the orchestra, be sure to include those in the list.

   Help each student to identify in which instrument family his or her choice belongs. Tally the choices on the chart by instrument families. Once all of the students have made their choices, ask students to add the total number of tally marks for each family. Construct a bar graph showing each of the families and the number of marks each family received. Ask students to come up with a suitable title for the graph (e.g., Instrument Families We Like Best), and to help you properly label the graph. From this bar graph, ask students questions such as:
   - How many people would most like to play an instrument from the _____ instrument family?
   - Which instrument family received the most/least votes?
   - Did more/fewer people like instruments from the _____ *(e.g., string)* instrument family than the _____ *(e.g., brass)* instrument family?
   - How many more/fewer people chose instruments from the _____ *(e.g., woodwind)* instrument family than from the _____ *(e.g., percussion)* instrument family? How did you find your answer?
   - Was there another type of graph we could use to show this information? (e.g., pictograph)

3. Using pictures of instruments on the Every Instrument Has a Place Cutout Sheet, have students cut out and sort instruments into instrument families. Ask students to paste the pictures of the instrument families on a piece of art paper (approximately 30" long) or flip-chart paper, aligned so that they create a pictograph of their own. Tell students to place the pictures of their instruments into the proper instrument families (see sample pictograph). Upon completion of the pictograph, ask students questions about the graph, such as:

   - How many instruments are in the _____ *(e.g., woodwind)* instrument family?
   - Which instrument family has the most/least number of instruments?
   - How many more/less instruments are in the _____ *(e.g., percussion)* instrument family than the _____ *(e.g., brass)* instrument family? How did you find your answer?

Conclude this lesson by reviewing the location of the instruments on the Structure of the Orchestra chart in the Student Study Guide and play the audio examples for each instrument. Play audio examples on the Audio Companion CD at random and ask students to identify which instrument was used to create the sound.



Modifications (Special Needs):

1. Visual and auditory impaired students will need special consideration during this lesson with seating and materials adaptations.
2. Learning disabled students may benefit by abbreviating this lesson's content and length.
3. Varying learning styles will be addressed with the variety of activities in this lesson – tactile, visual and sensory learning styles are utilized.
4. Gifted student needs are provided through the instrument identification activity.

Assessment/Evaluation*:

1. Identify your Formative Evaluation Plan: The teacher will observe student participation and facilitate questioning to assess understanding of the lesson concepts. The teacher will observe student classification of correct placement of instruments into families.
2. Identify your Summative Evaluation Plan: Teacher observation notes and evaluation of the completed class tally chart, bar graph, and completed pictograph, will show the teacher if the concepts introduced were processed by the students.

Supplemental Materials and Equipment Needed: Every Instrument Has a Place Instrument Cutout Sheet (see Student Study Guide); Art paper or flip chart paper; Scissors and Glue

References:

Van de Walle, John. Elementary School Mathematics, 5th ed. Allyn and Bacon. Boston, MA. 2004.

National Standards:

Music

Standard 6: Listening tom analyzing, and describing music.

Mathematics

Standard: Number and Operations
Standard: Data Analysis and Probability
Standard: Problem Solving
Standard: Communication
Standard: Connections

WV Content Standard Objectives:

Kindergarten

MA.K.1.1	count forward to 20 and backward from 10 with and without objects.
MA.K.1.2	read, write, order, and compare numbers to 20.
MA.K.1.3	count and group concrete items by ones, fives, and tens.
MA.K.1.10	solve grade level appropriate problems using a variety of strategies.
MA.K.2.1	sort and classify objects by one attribute.
MA.K.5.1	collect, sort and organize data as a group project.
MA.K.5.2	construct graphs using objects and pictures.
MA.K.5.3	analyze data represented on a graph using grade level appropriate questions.

First Grade

GM.1.2.4	recognize the four families of the symphony orchestra.
MA.1.5.1	identify and investigate various forms of data collection.
MA.1.5.2	read and interpret a pictograph with each picture representing a single unit.
MA.1.5.5	tally by ones, organize the data in a chart/table, and construct a bar graph; read and interpret tally charts and tables.
MA.1.5.5	analyze data represented on a graph using grade level appropriate questions.

Second Grade

GM.2.2.6	identify instrumental families by hearing and seeing a representative instrument from each family.
MA.2.5.1	create, read, and interpret a pictograph with each picture representing greater than or equal to a single unit.
MA.2.5.3	analyze data represented on a graph using grade level appropriate questions.
MA.2.5.4	formulate questions, collect data, organize and display as a chart/graph.

Math and Music Lesson Plan

Grade Level(s): Kindergarten, First, and Second

Lesson Title: Vibrating Things Sing

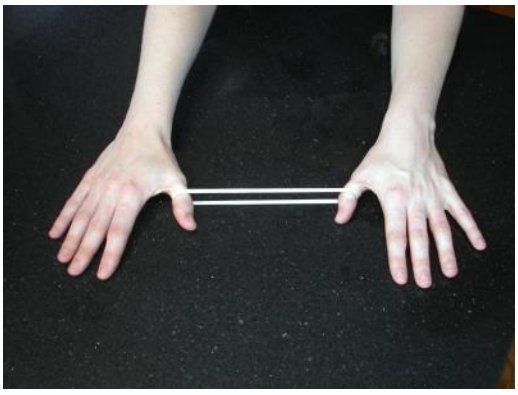
Focus: (Concept or skills to be emphasized) Vibrations, sound, pitch, listening, predicting

Objectives: See end of lesson for objectives and standards achieved.

Background Information: Most string instruments are played either by plucking or drawing a bow across their strings. The thickness, length, and tension of the strings are factors affecting the pitch (highness or lowness of note(s), as determined by how often and how fast the vibrations move which are producing it) of a string instrument. The materials that are used to make the strings of a string instrument also affect the timbre (a French word meaning tone color or quality) of the sound it produces. The longer, looser, or thicker a string is, the lower the note will sound. Conversely, the shorter, tighter, or thinner a string is, the higher the note will be. This lesson will allow students to experiment with varying the length of strings (using rubber bands) to produce high and low sounds.

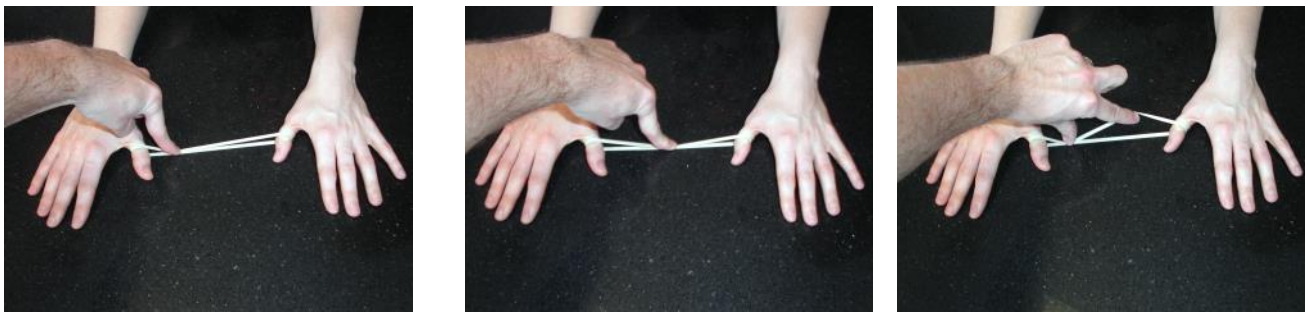
Activities (Procedures):

1. Play the first 25 seconds of Track **4** on the audio companion, from Britten's *The Young Person's Guide to the Orchestra* . Ask students if they can guess what kind of instruments are playing in this selection. After hearing their "guesses," explain that the music they just heard includes string instruments. Tell students there are many different types of string instruments, each with a unique appearance and sound. Direct students to the String Family section in their Student Guide and allow them time to look at and listen to the audio sounds for each string instrument.
2. Talk about string instruments with students. Ask students to think about how string instruments produce sound. Tell students they will be performing an experiment that demonstrates how sound is created by string instruments.
   a. Arrange students into groups of 2-3. Assign the role of "*instrument*" to one student and the roles of "*musician*" and "*recorder/reporter*" to the other student(s).
   b. **The Instrument:** Provide each group with one rubber band and ask them to read and follow the directions in the "Make your own string instrument" sheet in the Student Study Guide. Ask the *instruments* to place their hands palm down on a desk or table with their thumbs facing inward and explain that they must keep their hands the same distance apart during the experiment (Note: Tell your students not to stretch the rubber bands so tightly that they will break). Tell the *musicians* to carefully stretch a rubber band between the base of the thumbs of the *instruments* (see figure). Remind them to be sure the *instruments* do not let the rubber band slip off. Ask students what they think will happen when the rubber bands are plucked and to explain why they think this will happen.



The Instrument

c. Direct the *musicians* to pluck the rubber band and then have the *recorder/reporter* write down what they heard and saw. As a whole group, discuss what happened. Ask students why they think this happened.
d. Explain that the students will now have a chance to experiment with changing the pitch of their "instruments." Demonstrate pressing down at different points along the rubber band (see figure below). Explain that each group will have the opportunity to experiment with pressing on the rubber bands after they have made a prediction about how this might change the sound produced when the rubber band is plucked. Ask each group to discuss what will happen and have the *recorder/reporter* write their predictions. Tell the *recorder/reporter* from each group to report their group's predictions to the class.
e. Allow students enough time to experiment with pressing on different points along the rubber band. Direct the *recorder/reporter* from each group to record their observations. Return to a full group discussion and ask the *recorder/reporter* to talk about what they observed.



Changing Pitch and Plucking Rubber Band (Note: Students can use one hand to press on the rubber band and the other to pluck the rubber band)

3. Direct students to gather around the teacher to closely watch a stretched rubber band as it is plucked. Ask them to describe what they see (it vibrates). Ask students if they notice anything about the vibrations and the sound (sound is only produced while the rubber band is vibrating). Explain that sound is created when something vibrates. Tell students that all noises, including their voices and musical instruments, are caused by vibrations. Explain that many of the sounds produced by an orchestra, such as the sound of the drums, can be felt, and that what they are feeling is actually the vibrations the instruments are producing as sound waves travel though the air.
4. Explain that the sound made by a string instrument is affected by the thickness of the string, how tightly the string is stretched, and the length of the string. Explain that in the previous experiment students were changing the length of the part of the "string" allowed to vibrate. When the length of the string allowed to vibrate is shortened, the pitch goes up, and when it is lengthened, the pitch goes down. Explain that this is the same thing that string instrument musicians do when they press on the strings on the fingerboard of their instruments.

Extensions:

1. Using a string instrument, demonstrate how the pitch of a note changes when someone presses on the string while it is plucked. Allow students to look closely at the thickness of the strings and demonstrate how this influences the pitch of each note. Adjust the tension on each string by tightening and loosening each string by turning the tuning pegs of the instrument and demonstrate how this affects the pitch of each note. Be aware that this will require the instrument to be re-tuned, so only do this if you know how to re-tune the instrument or if the person who loaned the instrument to you realizes they will need to re-tune their instrument.
2. Ask students to explain why they think length, tension, and thickness of a string affects its pitch when plucked or bowed.

Modifications (Special Needs):

1. Visual and auditory impaired students will need special consideration during this lesson with seating and materials adaptations.
2. Learning disabled students may benefit by abbreviating this lesson's content and length.
3. Varying learning styles will be addressed with the variety of activities in this lesson – tactile, visual and sensory learning styles are utilized.
4. Gifted student needs are provided through the extension activities.

Assessment/Evaluation*:

1. Identify your Formative Evaluation Plan: The teacher will observe student participation and understanding of the exploratory exercise. The teacher will facilitate all discussion points throughout the lesson.
2. Identify your Summative Evaluation Plan: The teacher will assess student comprehension by evaluating accuracy of pressure points on rubber bands during the exploratory. The teacher will evaluate the accuracy of the observations recorded by each group.

Supplemental Materials and Equipment Needed: Rubber bands, Paper, Pencils, String instrument(s) (optional), A copy of the WVSO Audio CD, CD player and Student Study Guides

Resources: Information about sound: http://www.physicsclassroom.com/Class/sound/soundtoc.html; and Information about the parts of an acoustic guitar: http://entertainment.howstuffworks.com/guitar.htm

References:

Ostdiek, Vern J. & Bord, Donald J. (2000). Inquiry into Physics. Brooks/Cole: Pacific Grove, CA.

National Standards:

Music

Standard 2: Performing on instruments, alone and with others, a varied repertoire of music.
Standard 3: Improvising melodies, variations and accompaniments.
Standard 6: Listening to, analyzing and describing music.
Standard 7: Evaluating music and music performances.
Standard 8: Understanding relationships between music, the other arts and disciplines outside the arts.

Science

Content Standard B: Position and motion of objects:

Social Studies

Standard V: Individuals, Groups, and Institution

WV Content Standard Objectives: 21st Century standards are distributed separately.

Kindergarten

SC.K.1.1	ask questions about themselves and their world.
SC.K.1.2	listen to stories about the lives and discoveries of scientists.
SC.K.2.3	use scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, magnets).
SC.K.3.1	recognize that models are representations of real things.
SC.K.6.1	work in groups, listen to and be tolerant of different viewpoints.

First-Grade

GM.1.2.5	evaluate their own musical performances.
GM.1.3.2	create an original composition of at least one musical phrase.
SC.1.1.1	ask questions about themselves and their world.
SC.1.1.2	discuss the lives and discoveries of scientists after listening to stories about their lives and discoveries.
SC.1.4.13	demonstrate that sounds are produced by vibrations.
SC.1.6.1	listen to and be tolerant of different viewpoints while working in collaborative groups.
SS.1.2.1	identify and practice various group roles (e.g., group leader, recorder, reporter, collector) in the classroom.

Second-Grade

GM.2.2.12	evaluate their own musical performances.
SC.2.2.2	manipulate scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, bal ance, thermometer, metric ruler, magnets, weather instruments, calculators).
SC.2.4.12	recognize that sound can change in pitch and volume.

Math and Music Lesson Plan

Grade Level(s): Kindergarten, One, and Two

Lesson Title: Note Values as Math

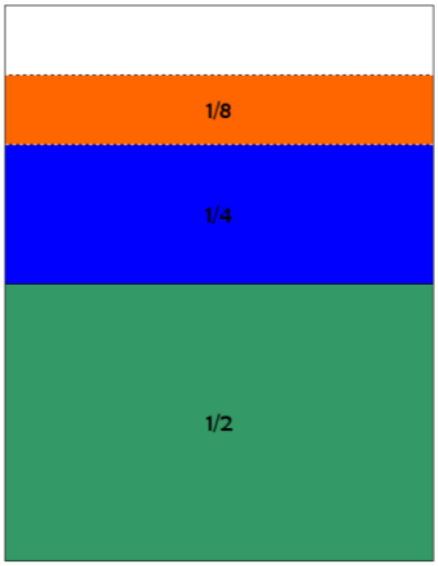
Focus: Fractions, Music Notes, Cooperative Learning, Discussion

Objectives: See end of lesson for objectives and standards achieved.

Background Information: Students will compare notes used in music to fractional values used in mathematics through active engagement in group discussion, cooperative learning, and musical rhythmic performance. A classroom teacher can also use his/her school's music teacher, if available, to assist with the "clap-tap" section of this lesson plan.

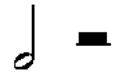
Activities (Procedures):

1. Review the term "fraction" as being the division of a whole (number or object) into equal parts. Discuss real world applications of fractions, i.e. equally dividing foods, time measurement, and in reading and writing music. Show a concrete example of dividing an object into halves, quarters, and eighths (e.g. cut a pie, divide chocolate bars, etc.).
2. Have students make a fraction chart by folding an 8.5 x 11" sheet of paper. Fold the paper in half horizontally. Using crayons have students unfold the paper and color in the bottom half (see figure on the right). Show students that one half can be written in the form 1/2 (one over two). Keeping the fold at the bottom, have students fold the paper again horizontally, so that it is folded into fourths or quarters. Show students that one quarter can be written in the form 1/4 (one over four). Have students open it and shade in the first quarter above with a *different* crayon color. Continue folding, unfolding, and coloring until the paper is divided into eighths. Show students that one eighth can be written in the form 1/8 (one over eight). The unfolded, completed paper should look like the example on the right.



3. Introduce the students to the value of music notes and rests, each note and its corresponding rest representing a specific value. Music notes and rests are the durations of sound and silence for periods or fractions of time. Explain that music notes and rests are named like fractions: a whole note or rest divided in two makes two half notes (or rests), one divided by two makes 1/2. A quarter note (or rest) divided in two makes two eighth notes (or rests), and 1/4 divided by 2 equals 1/8. Four eighth notes (or rests) would take up the same amount of time as one half note (or rest). Write music note and rest values on the chalkboard, flipchart, or overhead projector.

Whole Note and Rest 

Half Note and Rest 

Quarter Note and Rest 

Eighth Note and Rest 

Remind students that two eighth notes are often beamed together like this:  . Have students look at their completed fraction charts and point out that the entire paper is like a whole note or a whole rest. Continue to make the comparisons of different notes (or rests) to their fractional values.

4. Have students look at Fractions and Notes page in the Student Study Guide, or make copies of the handout (found at the end of the lesson) and distribute to the class. Point to the examples of a half note and a quarter note on the handout. Ask students to complete the Fractions and Notes page. Check for immediate student feedback on the understanding of the concept by checking the worksheet in class.
5. As a culminating activity to help students have a better grasp of the value of notes, ask the class to join you in clapping to a 4-beat measure. To help students "hear" the value of those notes, tap your foot to a 4-beat measure -- *tap, tap, tap, tap* -- and have students join in.

    - Introduce the concept of the whole note by clapping its value. Clap once for each 4-beat measure you tap: ***clap****, tap, tap, tap.* As you clap, hum the note and hold it over all four beats *(hum-mm-mm-mm).* Have students clap, tap, and hum with you.

    - Introduce the half note. Clap ***(clap,*** *tap,* ***clap****, tap)* and hum *(hum-mm, hum-mm)* to represent the half note for students as you tap your foot to the four beats of the measure. Have students clap, tap, and hum with you.

    - Introduce the quarter note. Clap ***(clap, clap, clap, clap)*** to represent the quarter note as you tap your foot to a four-beat measure. Have students clap and tap with you.

Extension Activities:

1. Clap a measure of different types of notes at random and have students identify whether you have clapped whole, half, quarter or eighth notes.
2. Have students try to extend the paper folding and note values to 16th notes.

Modifications (Special Needs):

1. Visual and auditory impaired students will need special consideration during this lesson with seating and materials adaptations.
2. Learning disabled students may benefit by abbreviating this lesson's content and length.
3. Varying learning styles will be addressed with the variety of activities in this lesson – tactile, visual and sensory learning styles are utilized.
4. Gifted student needs are provided through the extension activities.

Assessment/Evaluation*:

1. Formative Evaluation Plan: The teacher will observe and facilitate the completion of the group

discussion activities. The teacher will assess student progress through student accuracy on worksheet, as well as their ability to tap out the musical notes in a measure of music.

2. Summative Evaluation Plan: The teacher will assess the outcome of the lesson through the accuracy of the completion of Handout 1.

Supplemental Materials and Equipment Needed: Crayons – 3 different colors; 8.5 x 11" paper; Chalkboard, flipchart, or overhead projector; and Student Study Guides or Copies of Handout 1: Fractions and Musical Notes

Resources:

Crayola.com (2005) Binney & Smith. Retrieved December 28, 2005 from http://www.crayola.com/educators/dreammakers/add.cfm?page=1

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Tulga, P. (2004). *Fraction Pie Rhythms. Music Through the Curriculum.* Retrieved December 28, 2005 from http://www.philtulga.com/pie.html.

National Standards:

Music

Standard 5: Reads and notates music

Mathematics

Standard: Number and Operations

WV Content Standard Objectives: **21st Century standards are distributed separately.**

Kindergarten

GM.K.2.3	read notation for quarter notes, quarter rests, and beamed eighth notes.
GM.K.2.6	distinguish between same and different musical phrases.
MA.K.1.7	identify and name halves and whole using concrete items.

First Grade

GM.1.1.6	perform rhythms using quarter notes, quarter rests, and beamed eighth notes.
GM.1.2.1	read beamed eighth notes, quarter notes and rests.
MA.1.1.9	identify and name halves, thirds, and fourths as part of a whole and as part of a group using models.

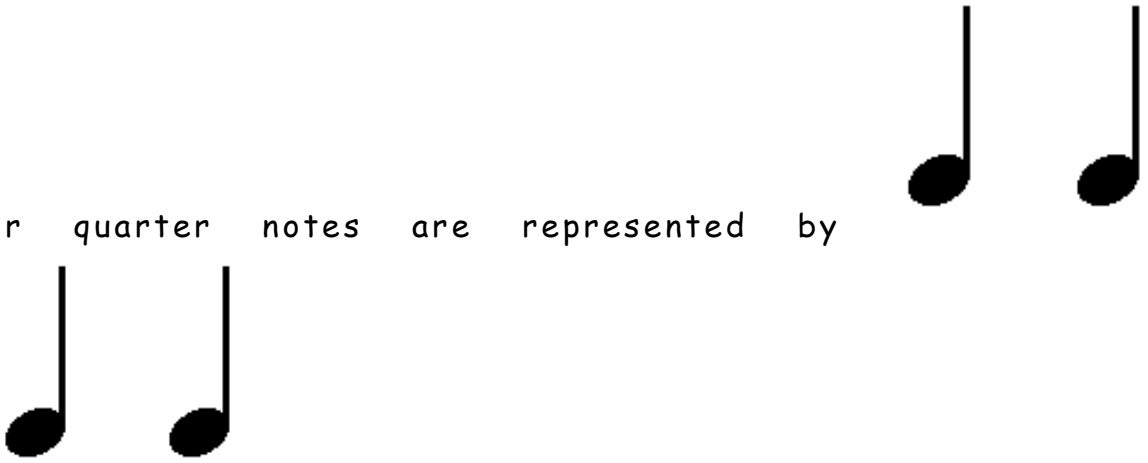
Second Grade

GM.2.2.2	expand previously learned notation to include half notes and rests.
MA.2.1.7	identify and name fractions as part of a whole and as part of a group using models.

Fractions and Musical Notes Worksheet

1. Two half notes are represented by 

   or as a Fraction: 2/2

2. Four quarter notes are represented by 

   or as a Fraction: 4/4

3. Can you tell me what eight eighth notes would look like? As Notes and as a Fraction? (Remember: you can beam eighth notes together.) Use your pencils to draw and write your answers below.

Notes:

Fractions and Musical Notes Worksheet (Answer Key)

As a Fraction:

1. Two half notes are represented by  or as a Fraction: 2/2

2. Four quarter notes are represented by  or as a Fraction: 4/4

4. Can you tell me what eight eighth notes would look like? As Notes and as a Fraction? (Remember: you can beam eighth notes together.) Use your pencils to draw and write your answers below.

Dolch and Fry Words

Kindergarten

a	for	not	this
all	four	now	three
am	funny	of	to
an	get	on	too
and	go	one	two
are	good	our	under
as	have	out	up
ask	he	play	want
at	help	please	was
ate	here	pretty	we
away	I	ran	well
be	in	red	went
big	into	ride	what
black	is	run	where
blue	it	said	white
brown	jump	saw	who
but	like	say	will
came	little	see	with
can	look	she	yellow
come	make	so	yes
did	me	soon	you
do	must	that	your
down	my	the	
eat	new	there	
find	no	they	

First Grade

a	each	just	over
about	eat	know	part
after	every	let	people
again	find	like	play
all	first	little	please
am	fly	live	pretty
an	for	long	put
and	four	look	ran
any	from	made	red
are	funny	make	ride
as	get	many	round
ask	give	may	run
at	go	me	said
ate	going	more	saw
away	good	must	say
be	had	my	see
been	has	new	she
big	have	no	so
black	he	not	some
blue	help	now	soon
brown	her	number	stop
but	hers	of	take
by	him	oil	than
call	his	old	thank
came	how	on	that
can	I	once	the
come	if	one	their
could	in	open	them
day	into	or	then
did	is	other	there
do	it	our	these
down	jump	out	they

think			
this			
three			
time			
to			
too			
two			
under			
up			
use			
walk			
want			
was			
water			
way			
we			
well			
went			
were			
what			
when			
where			
which			
who			
will			
with			
word			
would			
write			
yellow			
you			
your			

a	buy	go	letter
about	by	goes	like
after	call	going	line
again	came	good	little
air	can	great	live
all	change	green	long
also	cold	had	look
always	come	hand	made
am	could	has	make
America	day	have	man
an	did	he	many
and	different	help	may
animal	do	her	me
another	does	here	mean
answer	don't	hers	men
any	down	high	more
are	each	him	most
around	eat	his	mother
as	end	home	move
ask	even	house	much
at	every	how	must
ate	fast	I	my
away	find	if	name
back	first	in	need
be	five	into	new
because	fly	is	no
been	follow	it	not
before	for	its	now
best	form	jump	number
big	found	just	of
black	four	kind	off
blue	from	know	oil
both	funny	land	old
boy	gave	large	on
brown	get	learn	once
but	give	let	one
			only
			open
			or

Second Grade

other	sentence	there	we
our	set	these	well
out	she	they	went
over	should	thing	were
page	show	think	what
part	sing	this	when
people	sit	those	where
picture	sleep	three	which
place	small	through	who
play	so	time	why
please	some	to	will
point	soon	too	wish
pretty	sound	try	with
pull	spell	turn	word
put	still	two	work
ran	stop	under	world
read	study	up	would
red	such	upon	write
ride	take	us	year
right	tell	use	yellow
round	than	very	you
run	thank	walk	your
said	that	want	
same	the	was	
saw	their	wash	
say	them	water	
see	then	way	

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Tubby the Tuba
21st Century Content Standards and Objectives

Concert Etiquette and Safety

WV Content Standard Objectives:

Kindergarten-Second Grade General Music

MU.O.GMK-2.4.02 discuss social responsibility through appropriate audience behavior.

Kindergarten

SS.O.K.1.03	identify the need for rules and the consequences for breaking rules and how to resolve disagreements peacefully.
SS.O.K.2.02	explain why rules are important and participate in developing rules.
WE.K.3.03	demonstrate safety procedures (e.g., street crossing and fire drills).
WE.K.3.05	identify unsafe actions that might lead to injuries.

First-Grade

SS.O.01.01.03	participate in developing classroom rules and identifying consequences of breaking rules.
SS.O.01.01.07	demonstrate and give examples of appropriate behavior in dangerous situations (e.g., fire, poison, traffic, strangers and drugs).
SS.O.01.02.03	identify and explain the need for authority figures.
WE.1.3.04	identify and follow safety rules (e.g., playground, water, electrical).
WE.1.3.05	demonstrate how to perform basic self-care/safety procedures (e.g., fire/weather drill, bus and auto safety skills).

Second-Grade

SS.O.02.01.03	model the personal responsibilities of good citizenship in the classroom (e.g., responsibility, self-control).
SS.O.02.02.03	recognize the need for authority figures and identify the characteristics of responsible leaders.
WE.2.3.01	describe behaviors and habits that may be dangerous at home, on the playground, or in the community.

Patterns in Music

WV Content Standard Objectives:

Kindergarten-Second Grade General Music

MU.O.GMK-2.1.06 read notation for quarter notes, quarter rests, beamed eighth notes, half notes and half rests.
MU.O.GMK-2.2.07 distinguish between same and different musical phrases.
MU.O.GMK-2.2.09 identify same and different sections of music.
MU.O.GMK-2.2.06 read rhythmic notation in 2/4 and 4/4 meter.

Kindergarten

M.O.K.2.2 create, describe, and extend a repeating pattern found in common objects, sound, and movement.

First Grade

M.O.1.2.2 create and analyze a number patterns using common objects and numbers.

Second Grade

M.O.2.2.1	analyze, describe, extend and create a growing pattern using objects or numbers.
M.O.2.2.3	describe, complete and extend a variety of counting pattern, according to a given rule.

Every Instrument Has a Place

Kindergarten-Second Grade General Music

MU.O.GMK2.2.14 identify musical instruments, e.g., classroom, symphonic, folk, global, etc.
MU.O.GMK-2.2.07 distinguish between same and different music phrases.

Kindergarten

M.O.K.1.7 identify and name halves and wholes using concrete models.
M.O.K.2.1 justify the classification of self-selected objects based on attributes.
M.O.K.4.1 estimate the size of an object and compare and order objects with respect to a given attribute.
M.O.K.5.1 collect, organize, display, and interpret date using a pictograph and bar graph (with and without technology).

First Grade

M.O.1.1.9 identify, name and explain why a given part is half, third, or fourth of a whole or part of a group, using concrete models.
M.O.1.2.1 sort and classify objects by more than one attribute, using various strategies, including Venn Diagrams.
M.O.1.5.1 collect, sort, organize, and draw conclusions about data using a bar graph and pictograph.
M.O.1.5.5 conduct simple experiments, record data on a tally chart or table and use the data to predict which of the events is more likely or less likely to occur if the experiment is repeated.

Second Grade

M.O.2.1.7 identify and explain fractions as part of a whole and as part of a set/group using models.
M.O.2.5.1 create, read, and interpret a pictograph with each picture representing greater than or equal to a single unit.
M.O.2.5.3 analyze data represented on a graph using grade level appropriate questions.
M.O.2.5.4 formulate questions, collect data, organize and display as a chart/graph.

Vibrating Things Sing

WV Content Standard Objectives:

Kindergarten-Second Grade General Music

MU.O.GMK-2.2.02 identify and manipulate/notate high and low pitches on a music staff.
MU.O.GMK-2.3.02 create appropriate sounds to accompany stories or poems.
MU.O.GMK-2.2.14 identify musical instruments, e.g., classroom, symphonic, folk, global, etc.

Kindergarten

SC.O.K.1.01 ask questions about themselves and their world.
SC.O.K.1.02 listen to and discuss stories about the lives and discoveries of scientists.
SC.O.K.1.04 explore and describe objects and events using the five senses to develop observational skills and make predictions based on personal observations.
SC.O.K.1.07 collect and record information in a variety of ways.
SC.O.K.2.04 describe, compare, sort and group objects in terms of what they are made of.
SC.O.K.3.01 recognize that models are representations of real things.

First-Grade

SC.O.1.1.01 ask questions about themselves and their world.
SC.O.1.3.06 use models as representations of real things.
SC.O.1.2.13 demonstrate that sounds are produced by vibrations.
SC.O.1.3.04 listen to and be tolerant of different viewpoints while working in collaborative groups.
SS.O.1.2.01 identify and practice various group roles (e.g., group leader, recorder, reporter, collector) in the classroom.

Second-Grade

SC.O.2.1.07 use safe and proper techniques for handling, manipulating, and caring for science materials (e.g., follow safety rules, maintain a clean work area, or treat living organisms humanely).
SC.O.2.3.02 use models as representations of real things.
SC.O.2.2.11 recognize that sound can change in pitch and volume.

Note Values as Math

WV Content Standard Objectives:

Kindergarten-Second Grade

MU.O.GM-2K.2.05 read notation for quarter notes, quarter rests, beamed eighth notes, half notes and half rests.
MU.O.GM-2K.2.07 distinguish between same and different musical phrases.
MU.O.GM-2K.1.06 perform rhythms using quarter notes, quarter rests, beamed eighth notes, half rests and half notes.

Kindergarten

MO.K.1.7 identify and name halves and whole using concrete models.

First Grade

MO.1.1.9 identify and name halves, thirds, and fourths as part of a whole and as part of a group using models.

Second Grade

MA.2.1.7 identify and name fractions as part of a whole and as part of a group using models.

WV Content Standard Objectives:

Pre-Kindergarten-Second Grade Learning Skills Objectives

21C.O.PK-2.1.LS1	Student uses text, people and electronic resources (e.g. interactive books, educational software, CD-ROMs, elementary multimedia encyclopedias and search engines) to locate information for classroom assignments and is able to identify the author and purpose for each source located.
21C.O.PK-2.1.LS2	Student can accurately interpret and create simple visuals (e.g. charts, maps, graphs and models) and use this information to solve problems and communicate information.
21C.O.PK-2.1.LS3	Student articulates thoughts and ideas, representative of real and imaginary experiences, clearly and effectively through oral, written or multimedia communication.
21C.O.PK-2.2.LS1	Student engages with teacher assistance in a critical thinking process by conducting basic evaluations using simple criteria.
21C.O.PK-2.2.LS2	Student identifies parts of a system and explains how those parts interact with one another.
21C.O.PK-2.2.LS3	Student engages in a problem solving process using objects to solve problems and demonstrates learning by explaining how they solved the problem.
21C.O.PK-2.2.LS4	Student engages in discovery, exploration and experimentation to reach unexpected answers. Student makes unusual associations and provides a variety of solutions to problems.

Pre-Kindergarten-Second Grade Technology Tools Objectives