

Meet our Orchestra Family

CLASSROOM ACTIVITIES FOR SCHOOL CONCERTS 2019

March 11 in Kelowna

March 12 in Vernon

March 13 in Penticton

MEET OUR ORCHESTRA FAMILY

CONTENTS

- 3 About the Teacher's Package
- 4 The Program
- 5 The Orchestra
- 5 Sound
- 6 The String Family
- 8 The Woodwind Family
- 10 The Brass Family
- 12 The Percussion Family
- 14 Cumulation
- 15 After the Performance
- 16 Curriculum Connections
- 18 Activity Sheets

ABOUT THE TEACHER'S PACKAGE

These activities have been developed to help you prepare your students for the Okanagan Symphony Orchestra's School Concert, Meet Our Orchestra Family. Some lessons include a preview of the music that students will hear at the concert. The activities encompass ideas for use by general classroom teachers as well as teachers with more music expertise. They are suggested activities only. Feel free to develop your own lessons in order to enhance the musical experience for your students. Activities range in length from a few minutes to half an hour.

The concert and activities meet many objectives of the current British Columbia Arts Education Curriculum. Some lessons include Science and English Language Arts goals as well. Samples of how the curriculum is supported at different grade levels are included on page 16.

Many activities include links to recordings or videos. If links are no longer available, a quick search of the music title will usually yield a number of options. Make sure you preview websites as they sometimes include advertisements at the beginning.

BC Curriculum

https://
curriculum.gov.bc.ca/
curriculum

THE PROGRAM

Can Can by Jacques Offenbach

https://www.youtube.com/watch?v=f4btfaT6kl4

Brandenburg Concerto No. 3, 1st Movement by J.S. Bach

https://www.youtube.com/watch?v=lhXHMzSOK5c with graphic score https://www.youtube.com/watch?v=MXe4MHyQBk4 live performance with harpsichord

Pavane by Gabriel Fauré

https://www.youtube.com/watch?v=1VkNGi_Rtml with landscape photos

In the Hall of the Mountain King by Edvard Grieg

https://www.youtube.com/watch?v=xrlYT-MrVal or https://www.youtube.com/watch?v=INfBHRzUCgs with paintings

Symphony 6, 4th Movement by Ludwig van Beethoven

https://www.youtube.com/watch?v=I2LjJviqOMM

Fossils from Carnival of the Animals by Camille Saint-Saëns

https://www.youtube.com/watch?v=HTHaH5ONge8

Gabriel's Oboe by Ennio Morricone

https://www.youtube.com/watch?v=PygPri0-LNA ending at 2:24

Latin Percussion Jam

William Tell Overture (Finale) by Gioachino Rossini

https://www.youtube.com/watch?v=YlbYCOiETx0

THE ORCHESTRA

An orchestra is a musical ensemble made up of instruments from four families, the string, woodwind, brass, and percussion families. Each instrument family produces sound (vibrations) in a different way. The following activities are divided into sections with one section devoted to each family. The first activity in each section introduces the instruments and their special characteristics. It also includes an activity sheet, especially useful for intermediate students.

The Okanagan Symphony Orchestra is in its 59th year of making music! The ensemble performs numerous concerts each year under the leadership of music director, Rosemary Thomson.



SOUND

Background Information

Sound is caused when something vibrates. The vibrations push the surrounding air in waves. When the airwaves reach the ear, they are processed into messages the brain understands. In order for a musical instrument (or anything else, for that matter) to produce sound, it must have a source of vibration. The instrument families are made up of instruments that produce sound (vibration) in similar ways.

1) Vibrations

Introduce the concept of sound being caused by vibrations. Have students lightly touch their throat and then start to hum. Vibrations can be felt. You may need to explain that vibrations are trembling or shaking movements. View a video clip such as https://www.youtube.com/watch?v=3-xKZKxXuu0 (4 minutes) for reinforcement of the concept.

THE STRING FAMILY

Background Information

The section of the orchestra with the most players is the string family which consists of violins, violas, cellos, and basses (also called string basses and double basses). These instruments are usually played by drawing a bow across a string to produce the vibration. They can also be played by plucking, a technique called pizzicato. By moving fingers along the fingerboard players change the length of the vibrating portion of each string causing its pitch to go higher or lower. In general, the larger the instrument, the lower the pitch since the strings are longer (and thicker). The harp is also a string instrument consisting of 47 strings of descending length and thickness. The strings are plucked with the fingertips. Some composers include harp in their orchestral music.

ACTIVITIES

1) Meet the Strings

Ask your class what they know about the string family to stimulate interest and determine prior knowledge. You may want to record some of the words and phrases to use with the chart activity later. Introduce or review the instruments of the string family using a video such as, *BBC Meet the Orchestra Strings* https://www.youtube.com/watch?v=MP2_6OLummA or *The Portland Youth Philharmonic Introduction to the Instruments* https://www.youtube.com/watch?v=Sr-l2m8twX0 starting at 10:57 for the strings. The Portland Youth Philharmonic uses tunes that many students may recognize. Discuss what was seen and heard. You may want to continue to add phrases to the previous list. Students could complete the *String Family Instrument Comparison* activity sheet, page 18, or make a journal entry about key concepts of the string family.

2) Pitch

Review the concept that sounds are caused by vibrations if necessary. The pitch (highness or lowness) of an instrument is generally related to it's size. Larger instruments produce slower vibrations so sound lower. Smaller instruments produce faster vibrations so sound higher. Demonstrate or have students try this illustration. Take a ruler and hold it firmly against a tabletop so that it is overhanging about 10 cm. Now flick the end of the ruler and it will vibrate producing a sound. Experiment with the length of the ruler that is vibrating. Explore how the pitch changes as the length of the vibrating portion of the instrument (ruler) changes. What is the highest sound you can make? What is the lowest? How do string players change the length of their strings? (Moving their fingers up the fingerboard shortens the length of the vibrating section of the string making the pitch go higher.) Have students listen to an excerpt of Brandenburg Concerto No. 3, 1st movement https://www.youtube.com/watch?v=lhXHMzSOK5c, observing the range of pitch produced by the string family. This recording has a graphic depiction of the notes, showing the higher pitches at the top of the screen and lower at the bottom.

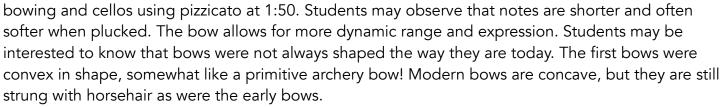
3) Mood

Discuss moods or feelings familiar to students. Some suggestions might include happy, sad, scared, energetic, goofy, angry, etc. Primary students might benefit from hearing a storybook about feelings. Suggestions are listed below but check your library for others. Explain that music can evoke feelings or set moods. Listen to Bach's *Brandenburg* Concerto 3, 1st Movement https://www.youtube.com/watch?v=MXe4MHyQBk4 and discuss how it made students feel. Discuss how Bach accomplishes this mood using the elements of music (rhythm, tempo, dynamics, style, and texture) which are familiar to the students.

Storybooks About Feelings:
The Way I Feel by Janan Cain
Sometimes I Feel Like a Mouse by Jeanne Modesitt
and Robin Spowart
The Feelings Book by Todd Parr

4) Technique

String players use two common techniques to produce sound, bowing and pizzicato (plucking). Each technique is distinct. Have students watch and listen to the two techniques as they watch *Pavane* by Fauré performed by the Cracow Young Philharmonic https://www.youtube.com/watch?v=LZoHJ8L3KS4. At 1:23, the first violins are shown bowing (front of screen) while the second violins use pizzicato (toward back). That is followed by all the violins



5) Tempo

Have students sing a song from their classroom repertoire or a familiar tune such as *Happy Birthday* or *Twinkle*. Then have them slow it down and sing it in exaggerated slow motion. Discuss how the mood of the piece is affected by the change of tempo. Some students may think it sounds humorous. Next, play the theme from Offenbach's *Can Can* from 0:12 to 0:24 https://www.youtube.com/watch?v=f4btfaT6kl4 After a short discussion on the mood of the piece, play *Tortoises* by Saint-Saëns from 0:12 - 0:42 https://www.youtube.com/watch?v=wPHqJTpgo-U Students may recognize the same tune in slow motion. Discuss the change of mood with the slower tempo.

THE WOODWIND FAMILY

Background Information

The woodwind family consists of the flute, oboe, clarinet, and bassoon. Most woodwinds produce sound by blowing air on a reed which then vibrates. The oboe and bassoon are double reed instruments and the sound is produced when air is forced across two blades of a reed causing vibrations. The reed is placed just inside the player's lips. The same principle is true for the clarinet (and saxophone) except the air is forced over a single reed. For the flute, the airstream is blown across the edge of the hole in the mouth plate causing the airstream to fluctuate between going outside the hole and inside. This causes the vibration. Basically, the pitches on woodwinds are changed by covering and uncovering holes which change the length of the instrument. Not all woodwinds are made of wood. They are often made of metal or plastic.

ACTIVITIES

1) Meet the Woodwinds

The members of the woodwind family each have unique characteristics. Have students view video clips listening to the tone quality of each instrument. Students could also try to figure out how each instrument produces sound (see background information). Woodwind demonstrations start at 1:49 and end at 5:27 https://www.youtube.com/watch?v=Sr-l2m8twX0. To demonstrate how sound can be produced similar to a flute, a demonstration of playing a pop bottle could be attempted. Adding water to the bottle will make the note higher since the vibrating column of air is now shorter. The same principle can be demonstrated with a set of test tubes, each filled with different amounts of water. For a reed instrument demonstration, take a plastic milkshake straw and flatten one end. Cut the top into a "V" point about a centimetre long. Blow into the cut end trying different placements and pressures until the straw vibrates. It may take several tries before the straw vibrates and produces a sound. You may choose to have students fill out information on the Woodwind Family activity sheet on page 19.

2) Fantasy Storytelling

Composers sometimes write music for a specific purpose as Grieg did with *In the Hall of the Mountain King*. It was written for a 5-act play based on a fairy tale, called Peer Gynt. Have students listen to *In the Hall of the Mountain King* concentrating on the mood. This piece may be a good starting place for writing a fantasy story, assuming your students are familiar with the genre. What story elements are suggested by the music? Discuss ideas for characters, problem, setting, and events. What details about a fantasy world come to mind? Are there special powers, mythical locations, make-believe characters? Use these ideas to develop a class, group, or individual story. A story map is proved on page 22.

3) Timbre

Introduce timbre (tone quality) by relating it to recognizing someone's voice. How can you sometimes tell who is talking even when you can't see them? Explain that timber is what makes instruments or voices sound different. Listen to the audio clips of individual instruments and have students suggest words or phrases that help describe the timbre of each instrument. Listing the suggestions may help students recall the instrument later.

Flute https://www.youtube.com/watch?v=NEzSJW8s-V8
Oboe https://www.youtube.com/watch?v=8nNilTdpDiE
Clarinet https://www.youtube.com/watch?v=kSfEDb1cMAw

Bassoon https://www.youtube.com/watch?v=_t2q0lsUl4k

Now play a second example of each instrument in an orchestral setting and have students identify the solo woodwinds.

Clarinet https://www.youtube.com/watch?v=QMYCFg-8vTU to 1:00 (Mozart's Clarinet Concerto) Flute https://www.youtube.com/watch?v=1VkNGi_Rtml to 0:22 (Pavane)

Bassoon https://www.youtube.com/watch?v=xrlYT-MrVal to 1:02 (In the Hall of the Mountain King) Oboe https://www.youtube.com/watch?v=PygPri0-LNA ending at 2:24 (Gabriel's Oboe)

Composers use the woodwinds for different effects. Ask students which instrument they would choose for the background of a scary story? Humorous story? Serious story? Fairy tale? Mystery story? Adventure story?



THE BRASS FAMILY

Background Information

Brass instruments include trumpet, French horn, trombone, and tuba. They produce sound when a player vibrates (buzzes) his or her lips against a mouthpiece. The brass instruments are usually coiled to make them easier to handle. The pitch is changed in a combination of two methods. One is by lengthening or shortening the instrument through passages opened and closed with valves. In the case of the trombone, the instrument has a slide to vary the instrument length. Brass players also change the speed of their buzz to help change the pitch. For instance, if they buzz faster the pitch will go higher. Instruments in the brass family are usually made of brass, a blend of copper and zinc, but there are instruments made of other metals, wood, horn, or even plastic included in the family of brass instruments.

ACTIVITIES

1) Meet the Brass

Ask students what they know about brass instruments so you can assess their prior knowledge. It is important that students learn that brass instruments produce sound when a player buzzes his or her lips against a mouthpiece. Many students would enjoy buzzing their lips by blowing a focused stream of air through closed lips. Try it! Instruments like the saxophone are made of brass but have a reed, therefore, do not belong to the brass family. Have students watch a video introducing the brass family such as *BBC Meet the Orchestra Brass* https://www.youtube.com/watch?v=yE0aSxziNdY. Students may be interested to know that if a trumpet were uncoiled it would reach 1.4m (4 1/2 feet), a trombone 2.7m (9 feet), a French horn 3.7m (12 feet), and a tuba 5.5m (18 feet). Characteristics of these instruments can be recorded on the *Brass Family* activity sheet found on page 20.

2) Dynamics (Loudness)

Musical instruments can change the loudness of a sound by increasing or decreasing the amplitude of the vibration. The brass family can play the loudest of all the instrument families.

Have students sing a familiar song such as Row, Row, Row Your Boat or Happy Birthday. Now have them try singing it loudly and then softly. Depending on your students, you can relate the term loud to the symbol f (forte) and soft to p (piano). After students are comfortable with loud and soft you can add more dynamics as shown on the following chart. Using a list of dynamics (or symbols) on the board, have students sing and change the dynamics as you point to them.

```
pp (pianissimo) = very soft
p (piano) = soft
mp (mezzo piano) = medium soft
mf (mezzo forte) = medium loud
f (forte) = loud
ff (fortissimo) = very loud
```

The brass family can sometimes be heard playing very loudly as in parts of Offenbach's *Can Can*. Brass help the orchestra reach **ff** and even **fff** (triple forte). Students can often relate dynamics to movement. Have students suggest what movements would indicate soft dynamics (small steps, tiptoeing, etc.) or loud (large steps, marching, etc.). Play excerpts of *Can Can* https://www.youtube.com/watch?v=f4btfaT6kl4 and have students circulate around the room changing their movement according to the dynamics. You may want to point out that there are sections where the dynamics grow from soft to loud gradually (crescendo). An example can be heard from1:13 to 1:21. If your students are familiar with the major scale, they may recognize the trombones and tuba playing a very loud descending scale at 1:55.

3) Harmonics

Since brass instruments can vary the speed of their buzz they can play several notes, called harmonics, using one fingering. Bugles make use of this technique to play different pitches since they have no valves. Have students listen to common bugle calls https://www.youtube.com/watch?v=m49jwFVDmNo First Call (1:58), Reveille (4:02), and Taps (5:00). Explain that bugle calls are used to alert the military of certain events. Rossini uses a bugle-like call in the brass section to introduce the finale of William Tell Overture. Have students listen to the overture https://www.youtube.com/watch?v=YlbYCOiETx0. Ask students why they think Rossini used a bugle-like call and how his call is different to other bugle calls. Students might suggest Rossini uses harmony, different instruments, etc. Students may be familiar with William Tell from its use in television (ads and The Lone Ranger), and cartoons (Bugs Bunny and The Flintstones).



THE PERCUSSION FAMILY

Background Information

The percussion family contains the largest variety of instruments. The vibrations are produced by hitting, shaking, or scraping the instrument. Some percussion instruments play specific pitches while others are untuned. Percussionists often play several instruments during a performance. Classroom percussion instruments are available in many schools. They might include xylophones, glockenspiels, and metallophones of various sizes. They are called pitched percussion because they play different notes or pitches. Unpitched percussion instruments commonly found in schools include drums, tambourines, triangles, rhythm sticks, tone blocks, maracas, cymbals, and jingle sticks.

ACTIVITIES

1) Meet the Percussion

Have students view a portion of the video of Cedar Ridge Percussion Ensemble https://www.youtube.com/watch?v=4rRtdvxJD9g. Ask students how the sound is produced on the various instruments. To introduce individual instruments, view the video by Greenbean's Music https://www.youtube.com/watch?v=F2kTeUxlQsA. Another option is Classic Kids collection of pictures of percussion instruments and sound samples at https://www.classicsforkids.com/music/instruments.php?family=Percussion. This website is suitable for students to explore on their own. For a close look at percussionists at work, visit the Detroit Symphony at https://www.youtube.com/watch?v=JVmxrhrN9ds. One of the pieces students will hear at the concert features the xylophone. Have students listen for it in Saint-Saëns' Fossils https://www.youtube.com/watch?v=HTHaH5ONge8. Since most students are familiar with classroom percussion, they can use the Percussion Family activity sheet on page 21 to categorize instruments by the sounds they make. Categories could include ding, clack, and boom. Instruments could also be categorized according to whether they are pitched or unpitched (see background information).

2) Body Percussion Rainstorm

In Beethoven's Symphony No. 6, each movement portrays a scene. The 4th movement is the thunder storm. Beethoven used instruments, especially the timpani, to represent the storm. Timpani are large drums that can be tuned to specific notes. They are played with a variety of sticks to produce different effects. Have students listen to see how the the timpani help the orchestra sound like a storm https://www.youtube.com/watch?v=12LjJviqOMM. A popular activity to try with your students is to create a storm using body percussion. Here is one variation. Start each of these actions slowly and increase the intensity and volume gradually. It is helpful to overlap the sounds. Begin by rubbing hands together, move to finger snapping, and then thigh slapping (with stomping, if possible). Continue to do the actions but in reverse, with the volume and intensity gradually diminishing. This is a good time to review dynamics, if your students are familiar with them.

3) Composing

Introduce or review body percussion; clap hands, stomp foot, snap fingers, slap lap, etc. Practice body percussion call and response patterns using four pulses per phrase. See example.

clap	clap, clap	clap	snap	Have students repeat the pattern immediately to keep the pulse going.
------	------------	------	------	---

Once students are comfortable, more complex patterns can be attempted but continue to limit each phrase to four pulses.

Call and Response Rhythm Samples:

stomp	lap	clap, clap	clap
lap, lap	clap	snap	rest
stomp, stomp	lap, lap	clap, clap	snap
clap, clap	rest	clap, clap	rest

Encourage students to suggest other body percussion sounds and agree on words to describe them. Rubbing hands could be rub, slapping floor could be slap, etc. Very young children could use pictures or letters to represent the sounds. Try the following idea from PDST in Dublin. Working in pairs or small groups, have students create compositions by putting one or more sounds in each square of a 4 x 4 grid. Each square represents a pulse so two sounds in one square equals two eighth notes, three equals triplets, etc. Repeats and dynamics could be included. Groups could practice and perform their compositions. They may enjoy trading and trying to play a different composition.



CUMULATION

These activities can be completed once students have had an introduction to each family of the orchestra. They can provide a basis for evaluation as students are asked to describe or summarize the families of the orchestra.

ACTIVITIES

1) Instrument Families

Review the source of vibration (sound) in each instrument family. You may want to assign the *Instrument Families* activity sheet page 23 to use as a summary (word bank included on page 24 and answer key on page 25). Students can be challenged to add the following non-orchestral instruments to one of the four families according to how the sound is produced. Alternately, use the list of instruments for the basis of a discussion on classification.

bagpipe	shakers	banjo	harmonica
guitar	bugle	cowbell	saxophone
ukelele	euphonium	recorder	sleigh bells
mandolin	Celtic harp	piano	

Answer key:

Strings:	Woodwinds:	Brass:	Percussion:
banjo	bagpipes (reed)	bugle	shakers
guitar ukelele	harmonica (reeds) saxophone	euphonium	cowbell sleigh bells
mandolin Celtic harp	recorder		piano (strings are struck)

2) Poetry

Two scaffolds for poetry are available for students to complete online. Alternately, the outlines can be presented and students can complete their poems on paper.

The 5W Poem could be used to describe an instrument of the orchestra.

http://www.poetrygames.org/poetry-machine/poetry-14.php Sample:

TRUMPET Who
Powerful soloist What
In lead of the brass section Where
During loud fanfares When
To add excitement Why
With crisp, clear tones How

List Poem - What's in the Orchestra? or What's in the Percussion Family? http://www.poetrygames.org/poetry-machine/poetry-26.php

Students have an opportunity to name eight parts of the orchestra or a family of the orchestra, complete with descriptions. Onomatopoeias, or sound words, could be encouraged. EG: Clang, tick, blat, etc. If students are working online and want to print the poems, copy and paste them into a word processing program first.

3) Make an Instrument

Have students create their own original musical instrument from art supplies and recycled materials. This could be done in class or as a home assignment. After making the instrument, each student could demonstrate their instrument and explain which family it belongs to by describing how the sound is produced.

Sample of a Simple Rubric:

	Excellent	Good	Satisfactory	Not achieved
Created original instrument				
Workmanship, quality				
Used art supplies and/or recycled materials creatively				
Demonstrated playing technique				
Explained how sound was produced and into which family it belongs				

AFTER THE PERFORMANCE

Write a letter to one of the musicians describing what you found interesting about the performance.

Paint or draw a picture that represents a part of the concert that was particularly memorable.

The woodwind instruments come in a variety of sizes. Choose flute, oboe, clarinet, bassoon, or perhaps saxophone and find out what sizes are made. Research the history of the instrument and when it was first used in orchestras.

Write a review of the concert. Include a short summary of the performance including descriptions of what you saw and heard. Write about your favourite part in more detail.

Draw a picture of an original instrument that you would like to see added to the orchestra. Don't forget to name it and explain how it produces its sound.

CURRICULUM CONNECTIONS

The activities found in the package meet many objectives of British Columbia's current curriculum (found at https://curriculum.gov.bc.ca/curriculum). The following examples are just a few to show how the curriculum is supported at a variety of grade levels.

Grade 1 Science Education

Sound: Activity 1, Vibration, page

The String Family: Activity 2, Pitch, page

Big Idea: Light and sound can be produced and their properties can be changed Curricular Competencies: Make simple predictions about familiar objects and events Content: Properties of light and sound depend on their source and the objects with which

they interact

Grade 2 Arts Education

The String Family Activity 2, Mood, page

Big Idea: People connect to the hearts and minds of others in a variety of places and times through the arts

Curricular Competencies: Express feelings, ideas, stories, observations, and experiences through creative works

Content: Personal and collective responsibility associated with creating, experiencing, or sharing in a safe learning environment

Grade 3

The Percussion Family Activity 3, Composing, page

Big Idea: Dance, drama, music, and visual arts are each unique languages for creating and communicating

Curricular Competencies: Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play Content: Notation to represent sounds, ideas, and movement

Grade 4

The Brass Family Activity 2, Dynamics, page

Big Idea: Artists experiment in a variety of ways to discover new possibilities

Curricular Competencies: Interpret and communicate ideas using symbolism to express meaning through the arts

Content: Music - Dynamics and notation to represent sounds, ideas, movements, elements, and actions

Grade 5 English Language Arts

Cumulation: Activity 2, Poetry, page

Big Idea: Using language in creative and playful ways helps us understand how language

works

Curricular Competencies: Recognize how literary elements, techniques, and devices enhance

meaning in texts

Content: Literary elements and devices

Grade 6 Arts Education

The Percussion Family Activity 3, Composing, page

Big Idea: Engaging in creative expression and experiences expands people's sense of identity and community

Curricular Competencies: Create artistic works collaboratively and as an individual using ideas inspired by imagination, inquiry, experimentation, and purposeful play

Content: Music Elements - beat/pulse, metre, duration, rhythm, tempo, dynamics

Grade 7 English Language Arts

The Woodwind Family Activity 2, Fantasy Storytelling, page

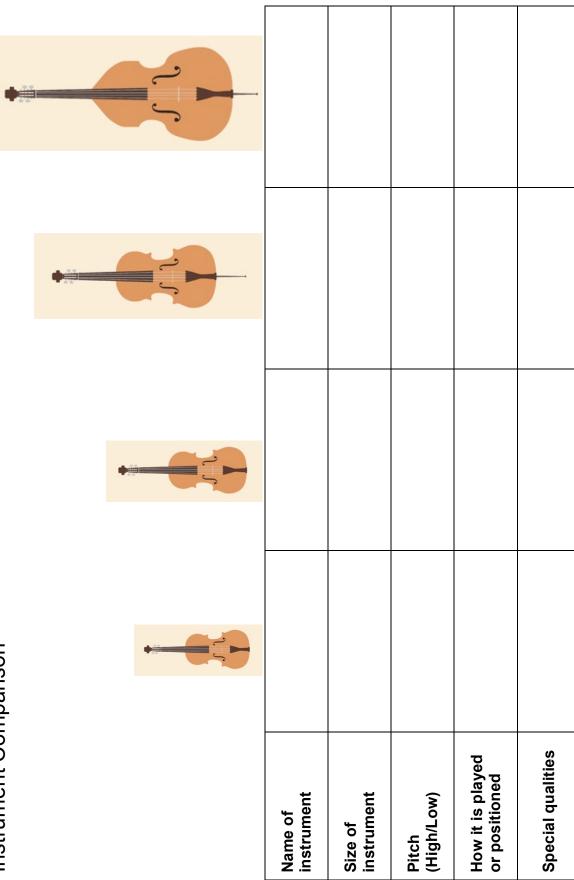
Big Idea: Exploring stories and other texts helps us understand ourselves and make connections to others and to the world

Curricular Competencies: Use writing and design processes to plan, develop, and create engaging and meaningful literary and informational texts for a variety of purposes and audiences

Content: Forms, functions, and genres of text

String Family Instrument Comparison

Name_



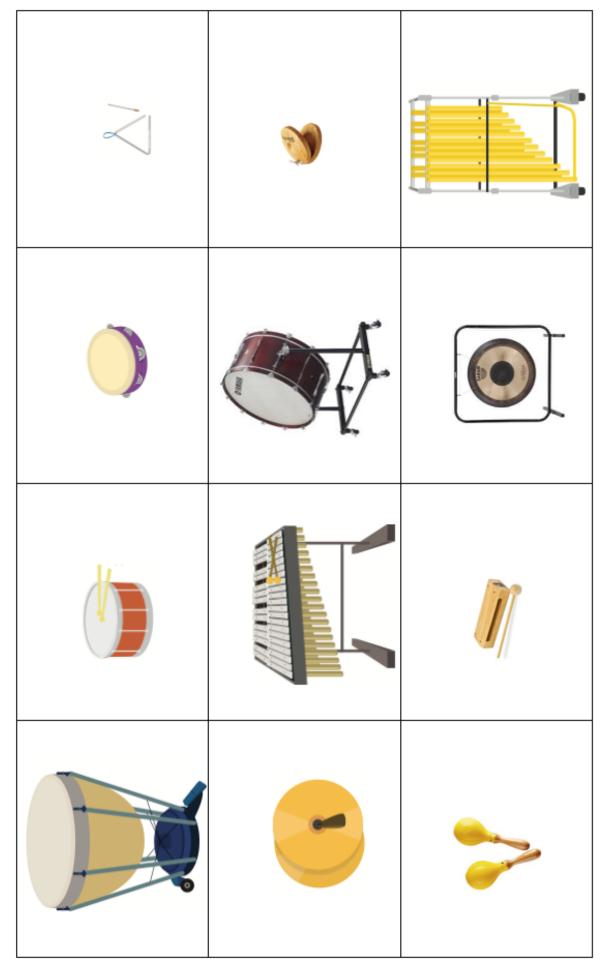
Name					
uo v					
Woodwind Family Instrument Comparison	Name of instrument	How it produces sound	What material it is made from	What it sounds like	Special qualities

<u>ක් දූ</u>

Name					
UOS					
Brass Family Instrument Comparison	Name of instrument	Size of instrument	Pitch comparison	What it sounds like	Special qualities

Percussion Family Label the instruments: bass drum, castanet, triangle, snare drum, xylophone, chimes, maracas, timpani, gong, tambourine, cymbals, wood block.

Name



Ending:		

	sul	Instrument Families of the Orchestra	Name
	How they produce sound (vibrate)	Special characteristics	Examples
Strings			
Woodwinds			
Brass			
Percussion			

Instrument Families of the Orchestra Word Bank

Write the word or phrase in the appropriate section.

lips vibrate	opoe	xylophone	can be plucked	trumpet
violin	can be bowed	timpani	snare drum	reed or air stream vibrates
horn	triangle	strings vibrate	tuba	flute
cymbals	have many keys	clarinet	viola	bassoon
cello	trombone	bass	has a mouthpiece	tambourine
made of wood	saxophone	many are hit by sticks	may have a reed	6uo6

vibrations caused by hitting, scraping, or shaking

	lns	Instrument Families of the Orchestra	KEY
	How they produce sound (vibrate)	Special characteristics	Examples
Strings	strings vibrate	can be plucked can be bowed made of wood	violin viola cello bass
Woodwinds	reed or air stream vibrates	have many keys (has a mouthpiece) may have a reed	oboe flute clarinet bassoon saxophone
Brass	lips vibrate	has a mouthpiece	trumpet tuba trombone horn
Percussion	vibrations caused by hitting, scraping, or shaking	many are hit by sticks	xylophone gong timpani snare drum triangle cymbals tambourine