The Power in the Strings

Examples of **Possible** Curriculum Standards to Incorporate:

Kindergarten:

- 1.2 Reproduce high and low pitches.
- 2.2 Perform long and short sounds.
- 2.3 Play high and low sounds.
- 2.4 Echo short rhythmic patterns.
- 5.0 Students will listen to, analyze, and describe music.
- 5.2 Recognize the differences in tone color of voices and classroom instruments.
- 5.3 Recognize long and short sounds.
- 5.4 Recognize high and low sounds.
- 6.0 Students will understand relationships between music, the other arts, and disciplines outside the arts.
- 7.0 Students will understand music in relation to history and culture.

1st Grade:

- 2.0 Students will perform on instruments, alone and with others, a varied repertoire of music.
- 2.1 Reproduce and maintain steady beat.
- 3.1 Create musical sounds to accompany stories.
- 4.1 Compose short melodies using limited pitches.
- 6.0 Students will listen to, analyze, and describe music.
- 6.2 Recognize same and different sections in familiar pieces of music.
- 7.0 Students will evaluate music and music performances.
- 8.0 Students will understand relationships between music, the other arts, and disciplines outside the arts.
- 9.1 Recognize familiar songs of different cultures.

2nd Grade:

- 2.0 Students will perform on instruments, alone and with others, a varied repertoire of music.
- 3.0 Students will improvise melodies, variations, and accompaniments.
- 6.0 Students will listen to, analyze and describe music.
- 6.1 Recognize, aurally, same and different sections in music.
- 6.2 Recognize, aurally, musical instruments and classify into families.
- 7.0 The students will evaluate music and music performances.

- 8.0 Understanding relationships between music, the other arts and disciplines outside the arts.
- 8.1 Connect music and language arts through children's literature.
- 8.2 Illustrate the science of sound through the use of musical instruments.
- 9.0 Students will understand music in relation to history and culture.

3rd Grade:

- 2.0 Students will perform on instruments, alone and with others, a varied repertoire of music.
- 3.0 Students will improvise melodies, variations, and accompaniments.
- 6.0 Students will listen to, analyze and describe music.
- 6.1 Recognize, aurally, same and different sections.
- 6.2 Describe the characteristics of a musical selection using appropriate vocabulary.
- 6.3 Recognize, aurally, introductions in vocal and instrumental music.
- 7.0 Students will evaluate music and music performances.
- 7.1 Apply specific criteria in evaluating music and music performances.
- 8.0 Students will understand relationships between music, the other arts, and disciplines outside the arts.
- 9.0 Students will understand music in relation to history and culture.

4th Grade:

- 2.0 Students will perform on instruments, alone and with others, a varied repertoire of music.
- 3.0 Students will improvise melodies, variations, and accompaniments.
- 6.0 Students will listen to, analyze and describe music.
- 6.3 Recognize, aurally, the sounds of a variety of instruments, including voices.
- 7.0 Students will evaluate music and music performances.
- 7.1 Apply specific criteria in evaluating music and music performances.
- 8.0 Students will understand relationships between music, the other arts, and disciplines outside the arts.
- 8.1 Examine ways in which the principles of other art forms relate to those of music.
- 8.2 Examine ways in which the principles of other disciplines relate to those of music.
- 9.0 Students will understand music in relation to history and culture.

5th Grade:

- 2.0 Students will perform on instruments, alone and with others, a varied repertoire of music.
- 3.0 Improvising Students will improvise melodies, variations, and accompaniments.
- 6.0 Students will listen to, analyze and describe music.
- 7.0 Students will evaluate music and music performances.
- 7.1 Examine and evaluate, aurally and visually, selected music examples.
- 8.0 Students will understand relationships between music, the other arts, and disciplines outside the arts.

- 8.1 Compare characteristics of two or more arts.
- 8.2 Demonstrate ways in which the principles of other disciplines relate with those of music.
- 9.0 Students will understand music in relation to history and culture.
- 9.1 Identify and discuss music from different historical periods.
- 9.2 Identify and discuss music from different genres and cultures.

6th through 8th Grade:

- 2.0: Students will perform on instruments, alone and with others, a varied repertoire of music.
- 3.0: Students will improvise melodies, variations, and accompaniments.
- 6.0: Students will listen to, analyze, and describe music.
- 6.1 Demonstrate knowledge of the technical vocabulary of music.
- 6.2 Analyze aural examples of a varied repertoire of music representing diverse genres and cultures.
- 7.0 Students will evaluate music and music performances.
- 8.0 Students will understand relationships between music, the other arts, and disciplines outside the arts.
- 8.1 Compare characteristics of two or more arts.
- 8.2 Demonstrate ways in which the principles and subject matter of other disciplines are interrelated with those of music.
- 8.3 Demonstrate an understanding of the role of technology in creating, producing and listening to music.
- 9.0 Students will understand music in relation to history and culture.

9th through 12th Grade:

- 2.0: Students will perform on instruments, alone and with others, a varied repertoire of music.
- 3.0: Students will improvise melodies, variations, and accompaniments.
- 6.0: Students will listen to, analyze, and describe music.
- 6.2 Analyze aural examples of a varied repertoire of music representing diverse genres and cultures.
- 7.0 Students will evaluate music and music performances.
- 8.0 Students will understand relationships between music, the other arts, and disciplines outside the arts.
- 8.2 Demonstrate ways in which the principles and subject matter of other disciplines are interrelated with those of music.
- 8.3 Demonstrate an understanding of the many presences and uses of music in today's environment.
- 9.0 Students will understand music in relation to history and culture.
- 9.2 Distinguish characteristics of representative music genres and styles from a variety of cultures.
- 9.3 Examine the evolution of American musical genres.

Examples of **Possible** K-12th Music Academic Vocabulary to Incorporate:

All music academic vocabulary are the same for each grade level.

- **Classroom instruments**: Instruments typically used in the general music classroom, including, for example, recorder-type instruments, chorded zithers, mallet instruments, simple percussion instruments, fretted instruments, keyboard instruments, string instruments, and electronic instruments.
- **Genre:** A type or category of music (e.g., sonata, classical, opera, oratorio, art song, gospel, suite, jazz, madrigal, march, work song, lullaby, barbershop, Dixieland).
- **Rhythm:** Combinations of long and short sounds that convey a sense of movement.
- **Style:** The distinctive or characteristic manner in which the elements of music are treated. In practice, the term may be applied to, for example, composers (the style of Copland), periods (Baroque style), media (keyboard style), nations (French style), form or type of composition (fugal style, contrapuntal style), or genre (operatic style, bluegrass style).
- **Technical accuracy, technical skills:** The ability to perform with appropriate timbre, intonation, and diction and to play or sing the correct pitches and rhythms.
- **Technique:** The mechanical skill required to play an instrument or sing.
- **Tone:** A musical sound that has the properties of pitch, duration, volume, and timbre.
- **Pitch:**

The Power in the Strings

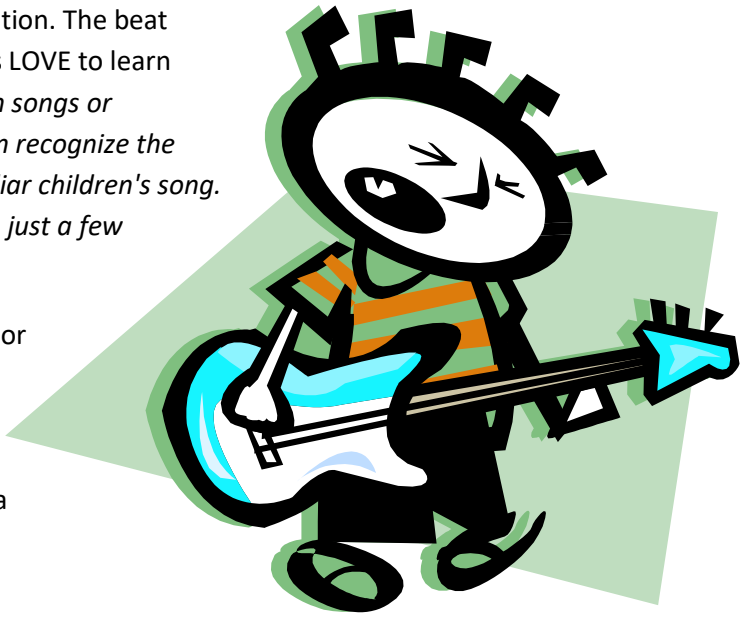
Option: Read a story such as *Tubby the Tuba*, *Zin! Zin! Zin! A Violin*, or *The Jazz Fly* to introduce the topic of music.

Maybe you've never really considered yourself very musical. Maybe you sing like a nightingale. Maybe you quit the flute three months after you picked it up. That's okay. Music is in all of us, and even just by popping a CD into the stereo, or turning on your mp3 player, you're tapping into its power.

A musical instrument is any device or mechanism that can be used to create musical sounds. In principle, anything that produces sound can serve as a musical instrument, like rocks, pots, pans, washboards, your fingers, or even your mouth. The history of musical instruments dates back to the beginnings of human culture. The date and origin of the first device of disputed status (which means not everyone agrees, but we're pretty sure) as a musical instrument dates back as far as 67,000 years old; artifacts commonly accepted to be early flutes date back as far as about 37,000 years old. Stringed instruments have been documented to have existed for well over 5,000 years.

What is it about music?

Have you ever found yourself singing along with a song you didn't think you knew? Our brains are attracted by rhyme and rhythm, movement and emotion. The beat increases thought and memory retention! Our brains LOVE to learn through music! *(Play snatches or samples of common songs or appropriate popular songs and see if the students can recognize the song from just a few bars. Play a short clip of a familiar children's song. Do their brains recognize what they are hearing from just a few notes?)*



In each of the music pieces you hear, the composers or songwriters 'colored' their music with the sounds of the instruments by themselves and in groups. Each instrument is chosen specifically for a certain part, much like a painter would choose a specific color or a

carpenter would choose a tool. It is important to know how each instrument sounds so you can recognize these 'color's.'

A fairly simple concept to remember is that the BIGGER the instrument, the LOWER the range. Thus, the opposite is true: the SMALLER the instrument, the HIGHER the range (Like human voices… a little kid is high and squeaky and a large man might sound low and deep.)

One of the largest groups of instruments, and one that most people know a little something about, is the String family of instruments. Why are they called families? Because just like in your family the instruments in each family share certain characteristics, like: how they make their sounds, how they are constructed or made, and what they are made out of.

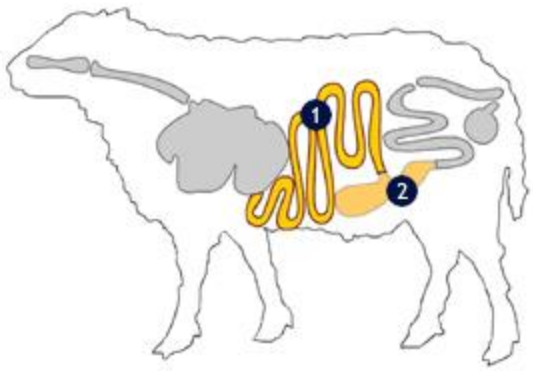
The string instruments have a great example of the range of sounds concept. The violin, the smallest of the string instruments, plays the highest notes, while the bass, the largest string family member at over 6 feet long, plays the lowest notes.

You are probably able to guess from their name, all the instruments in this family have strings.

What are strings made from?

Ask students for suggestions of what they think strings could be made from. Go into different items used for strings- Ask students what would be 2 parts of an animal that you might use for a stringed instrument such as a bass or violin?

The material with which the string is made determines, more than any other factor, what kind of sound is made. The vibration of the string produces the sound and this sound is enhanced (made better) and amplified (made louder) by the body of the instrument.



For thousands of years, the choices of musical string materials were few. Usually it was limited to some easily available material that would last a long time. Different materials have been used for strings around the world. In some places they've used silk from silk worms, other places used horse hair, plant fibers have been twisted and spun into a

cord for use as a musical string and in many places they use animal intestines, called gut.

Gut strings are made from the small intestines (the part of the digestive system right after the stomach) of sheep. Sheep were common in many parts of the world and so were easy to find. In order to go from being intestines to being strings they go through a long process. The intestine must be pulled from the animal immediately after slaughter while the gut is still hot. They do several things to the guts to get them ready to be used on instruments, they are cleaned, dried, salted, stored, cut, sliced, bleached, dried again, stored, tested for strength, etc, until finally the strings are put on an instrument.

The Bow

You play many string instruments by pulling and pushing (drawing) a wooden or metal bow, which helps the musician make longer continuous sounds. Much longer sounds than if they just pluck the strings. A bow consists of a specially shaped stick with other material forming a ribbon stretched between its ends, which is used to stroke the string and create long sounds. Most bows' ribbon is made with actual hair from horses' tails (150 and 200 hairs for a violin, more for larger instruments.) Musicians are picky about their horsehair. Horses that live in cold harsh northern areas have thicker stronger hairs, which are better for bows. *(Ask the students why they think hairs from animals that live in cold places might be better. Have them think back to when they study hibernation. Animals grow thick strong hair when it's cold. How could that help with a bow?)* Horsehair from animals in northern climates tends to be stronger, which is nature's response to coping with colder temperatures. Bow rehairers can choose from a lot of different kinds of horse hair; but stallion (male horses) hair from Siberia (a place near Russia, near the top of the world) is generally considered the best. Stallion hair is preferred because it is generally cleaner than that of mares (female horses).

Both players and bow makers want straight hair. Hairs with irregular structures, like curls or waves, will cause weird, scratchy sounds when they are pulled across the strings.

Before we introduce each instrument, let's test your knowledge.

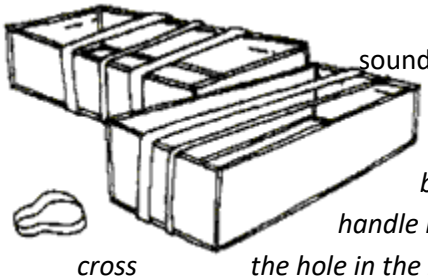
Using a word list or pictures, and the instrument audio samples have students match the correct instrument to the sound played.

Now let's learn more about each particular instrument!

(Play a sound clip as they are learning about each one- maybe have them act out how they might hold the particular instrument)

The Guitar: The guitar is a plucked string instrument, usually played with fingers or a pick. *(Show them a guitar pick)*The guitar consists of a body with a rigid (hard/stiff) neck to which the strings, generally six in number but sometimes more, are attached. Guitars are traditionally constructed of various woods and strung with animal guts or, more recently, with either nylon or steel strings. There are two primary families of guitars: acoustic and electric.

Acoustic guitars (and similar instruments) with hollow bodies, have been in use for over a thousand years. An ordinary (acoustic) guitar makes sound entirely by vibration. When you pluck a string, it vibrates back and forth, making the air move around it. Waves of sound energy travel into the hollow body of the guitar, making that resonate (vibrate) too and amplifying the sound (making it considerably louder). *To demonstrate this use a shoe box and three or four rubber bands of different thicknesses. Start by cutting a hole in the lid about 3 inches across. (Option: Also have a hole in one end of the box for a paper towel roll handle to fit into). Fit the lid on the guitar and the handle into the end. Stretch the rubber bands across and around the box so they cross the hole in the lid and ease the pencil under the bands at the bottom of the holes to form a bridge. The shoebox is the resonating chamber. Have students try to make sounds on a rubber band by itself. Now they can strum them or pluck them on the box. Have students listen for the different sounds! You might want to try different size bands and different size boxes to see how the sounds change.*



Typically, it has six strings, but there are also four, seven, eight, ten, eleven, twelve and thirteen strings. The classical guitar is often played as a solo instrument using a technique where the strings are pressed down and plucked (pulled with the fingers or a pick) to change the sound.

The most expensive guitar auctioned off for an astounding $2.7 million dollars. The auction took place in Qatar, the money was donated to help people with aids in the 2004 tsunami disaster. The reason the guitar was at such an outrageous price was because it was signed by many famous guitarists.

Electric guitars: were introduced in the 1930s. If you've ever seen an electric guitar, you'll have noticed that most of them have thin, solid bodies often made out of plastic. Resonance (vibration) isn't at work here: electric guitars produce their sound through an entirely different process. In fact, even though acoustic and electric guitars look similar, and you play them in a broadly similar way, they are quite different instruments. Electric guitars actually use magnets and wires to make sound and they rely on an amplifier that electronically changes the tone. As they are played electric signals from the string travel through magnets and wires to a loudspeaker in order to make the sounds, electric

guitars can't make sounds without the speakers. Once the string stops vibrating, the sound stops. In that respect, an electric guitar is just like an acoustic one.

On an electric guitar there are also knobs which allow the basic sound to be adjusted by turning knobs on the guitar body. More complex circuits can be added to change the sound of an electric guitar in all kinds of interesting ways and the electronic signals can be changed to produce unusual sound effects that could not be produced with a regular guitar. *(play clip of electric guitar)*

The Banjo: The early origins of the instrument, now known as the banjo, aren't very well known. The banjo a simple four or five stringed instrument. This stringed musical instrument originally came from Africa and was most probably brought over by the black slaves in the early nineteenth century. After working all day in the cotton fields the black slaves would sing songs of their native lands during the evenings and would play simple banjos.

The Violin: This is the littlest member of the string family. The violin is the smallest and highest pitched member of the string family. The sound of the violin is high, bright and sweet. A standard violin is around 24 inches long. A violin bow is around 29 inches long. *(This is the first one to use a bow- remind students what a bow is and why you need it.)*

You play the violin by tucking it between your chin and shoulder. Your left hand presses down on the strings to change the pitch, and your right hand moves the bow or plucks the strings.

Some people call a violin a Fiddle.

(Option: Play a clip of the fiddles from The Devil Went Down to Georgia)

Essentially, a violin and fiddle are one and the same instrument. The only true reason you'd call one instrument a violin and the other a fiddle is the approach...someone who plays fiddle tunes, a fiddler, will call their violin as a fiddle.

One interesting tradition is that old time fiddlers and some modern fiddlers, put rattlesnake tails inside their fiddles. Why? The origin of this belief is unknown, but it is quite commonly encountered, even today. There are a wide variety of explanations. Some believe the rattle sings along with the music giving it a better & sweeter sound. Others believe it helps them have good luck, keep the fiddle dry, keeps bad spirits, wasps, and mice from nesting inside, cleans out the inside of the fiddle, and eve n improves the sound. Some even say that way back, the fiddle used to be a woman's instrument and putting the rattles inside 'masculinizes' it, makes it manly enough, for men to play. In the South, rattlesnake rattles are sometimes placed in guitars for the same reason. What do you think?

Viola

The Viola: This may look like a violin, but don't be fooled, it's a viola. It's a bit larger in size and lower in pitch than the violin. The sound of the viola is deeper and warmer than the violin. A standard viola is around 27 inches long. A viola bow is around 29 inches long. It's a little thicker and heavier than a violin bow, since the strings used for the viola are a little thicker than the violin's strings. *(Draw how big the viola is compared to the violin on the board or have cut out of card stock or show pictures.)*

Like the violin, you play the viola by tucking it between your chin and shoulder. Your left hand presses down on the strings to change the pitch, and your right hand moves the bow or plucks the strings.

The Cello: The cello looks like the violin, but it's much larger with a shorter neck and a lower pitch.

The cello makes a wide range of beautiful sounds, from warm low notes to rich high notes. A standard cello is around 4 feet long. The

cello bow is over 28 inches long and is thicker than a viola bow.

To play it, you sit in a chair with the body of the cello between your knees, and with the neck of the cello on your left shoulder. The cello rests on the ground, supported by a metal peg. With your left hand, you press down on the strings to change the pitch, and with your right hand, you move the bow or pluck the strings.

Cello

Viola

Violin

Due to the size of the instrument, a cello does not come cheap. Low end cellos cost thousands of dollars.

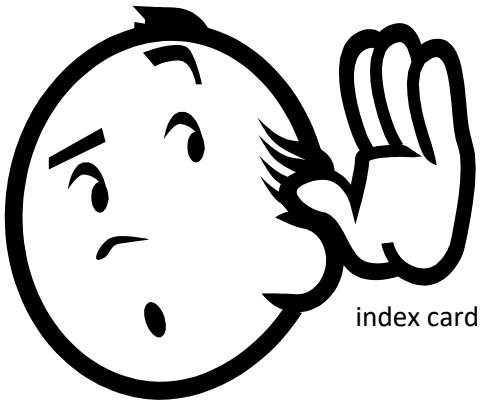
Some of the world's finest can cost millions. Like the guitar before it, manufacturers have begun making electric cello, which rely on electronic sound amplification.

The Double Bass: Here's the big one. The double bass is the biggest and lowest pitched instrument in the string family. The deep, very low sounds of the double bass are often used to help hold together the harmonies and to help carry the rhythm, like a drum.

A standard double bass is just over 6 feet in length. The double bass has sloping shoulders, which makes its shape slightly different from the violin, viola, and cello. A double bass bow is 26-27 inches long and very thick

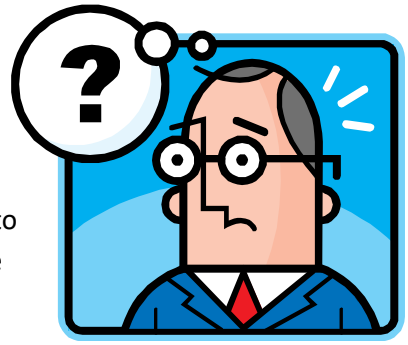
The double bass is so large that you have to stand up or sit on a very tall stool to play. It stands on the ground, supported by a metal peg, and rests on your left shoulder. It has very long strings which give it a very

low sound. Like most of the other string instruments, you use your left hand to press down on the strings to change the pitch, and your right hand to move the bow or pluck the strings.



Listen and Look!

Divide the students into teams and place them in lines facing the whiteboard. The teacher will ask the students to verbally identify the instrument that is shown or from the sound clip played. Or, instead of a verbal response the teacher may have students choose from the cards placed in a paper bag with the instrument name index cards at the front of each line.



The first student in each line will go to the paper bag that is placed at the front of their line. The teacher will ask these students to identify the first instrument that is shown. The students will look through their bag to find the card that correctly names the instrument. When they have each selected a card the teacher will ask them to turn their cards for everyone to see. The teacher identifies the correct answer and awards a point to those teams with the correct answer.

Variations:

Play sound clips of the instruments see if the students can recognize the song from just a few bars. Divide the students up into 2 teams. Each team will send up one contestant at a time and 1 clue about the instrument will be read. The first child to recognize the instrument gives the name. That team scores a point.

OR!

Divide the students up into 2 teams, but if it is a large group 3 teams.

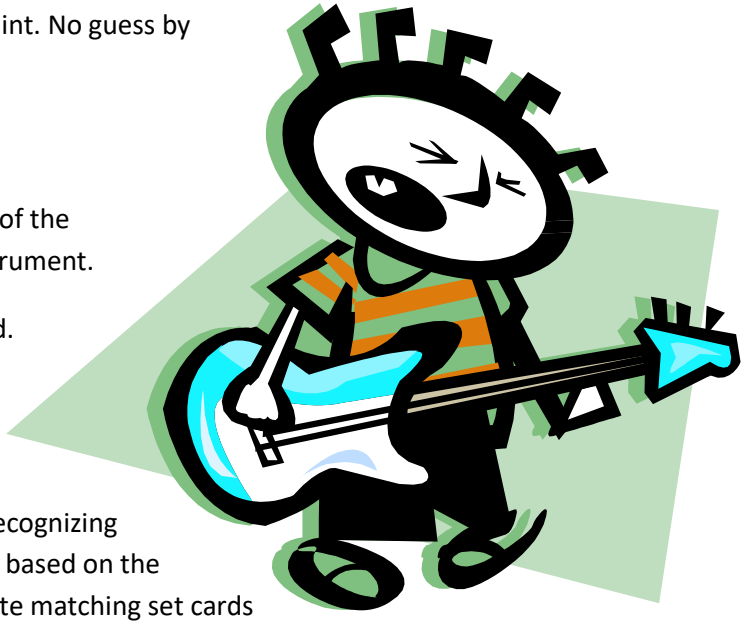
Each team will send up one contestant at a time and 1 clue about the instrument will be read.

Contestant will then be asked to say how may seconds they need in order to identify the instrument. Starting at 15 seconds and counting down.

Ie – I can name that instrument in 12 seconds, 9 seconds etc… The reduced bidding ends when one contestant challenges the other by saying, Name that Instrument. Then the song is played for the amount of seconds that the person bid. The contestant then has “x” amounts of seconds to Name the Instrument.

Scoring for teams: (Adjust as needed)

1. Correct song guessed 1point 2. Incorrect guess -1 point. No guess by either team zero points



Variations

Vary the game by asking students to identify the name of the instrument by listening to a sound recording of the instrument.

Ask students identify how the instrument can be played.

Fiddlesticks!

This game is a fun way to practice recognizing different musical instruments and is based on the classic game, Old Maid. To play create matching set cards of different instruments. Players have to collect pairs of instruments, but avoid getting left with the dreaded “fiddlestick” at the end of the game!

Based on how many players you have and songs you have recorded, you can declare a team winner after one or two rounds.

To determine an individual winner, have the winner of any individual rounds continue to play until you get down to just two players. Then have the two players face off with 3 or 5 Name that Tune challenges.)

Recycled Rhythms-- Make Your Own Instrument

Miniature Washtub Bass!

An old member of the string instrument family is the washtub bass. *(Play an audio clip of the juggernaut washtub bass)* Washtub bass is an old instrument that started out with people just digging a whole in the ground and stretching some hide over it to act as a resonator. The more portable version that includes a bucket or barrel has become a mainstay of bluegrass, old time, and jug band music. Sometimes, variations are used and there can be up to four strings with tuning pegs. People have even made them out of gas tanks and wheelbarrows.

There are some other funny names for this instrument like: gutbucket, barrel bass, babatoni, and laundrophone.

And know you'll make your own! One that really works. By "really works", we mean that you can actually play simple tunes on it, like *Mary Had a Little Lamb*.

http://www.instructables.com/id/Miniature-Washtub-Bass-Made-From-Office-Supplies!/step6/Playing-the-Mini-Washtub-Bass/
Necessary Supplies per Bass:

- 2 paperclips
- 1 unsharpened pencil or cooking chopstick
- 1 rubber band (Optional: Try other materials for strings)
- 1 disposable cup (ex. Styrofoam) Option: Try multiple styles of cups. Which one makes the best resonator?
- tape
- scissors

1. This step creates a place to attach the rubber band to the pencil. First, straighten a small paper clip so that only the innermost curve is left.

2. The next step is hard to describe. Place the bend in the paperclip so that it sits over the diameter of the pencil, leaving a loop sticking up Then, wrap the remaining length of wire around the pencil.

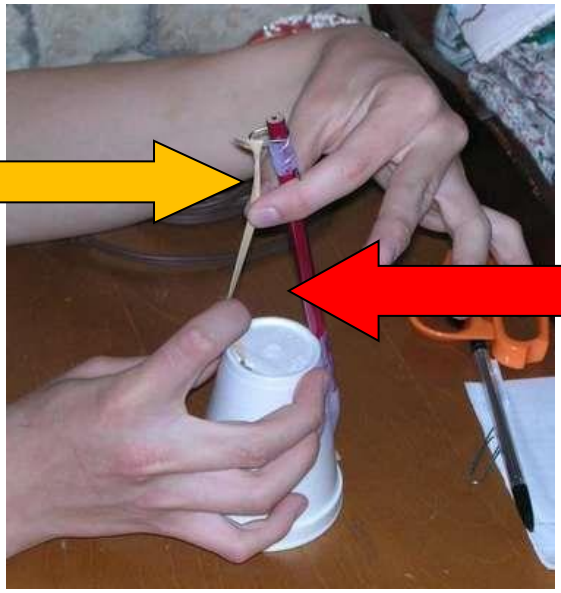
3. Attach the Rubber Band

First, use your scissors to cut the rubber band so that it's just one long piece of rubber. Then just tie one end of the rubber strip to the loop in the pencil "armature". It's probably a good idea to tape the paperclip to the pencil, for added strength.

4. Turn the cup upside-down. Then, securely tape the end of the pencil (the end without the paperclip and rubber band) to the side of the cup. Tape it so that the end is partway up the cup; you want the armature to sit as high up as possible. See the picture if you're confused.

5. Attach the Rubber Band to the Cup. This is the final step in construction. Use your scissors to poke a hole in the bottom of the cup, large enough for one end of the rubber strip to pass through. Note that the hole is near the edge of the cup, instead of in the center, and directly across from the pencil. Finally, stretch the rubber band through the hole and out the top of the cup, and attach it to the wall of the cup, directly underneath the end of the pencil. The rubber band is attached to the wall of the cup using the large paperclip, directly underneath the pencil. Done!

Now, make some music!



Playing the Mini-Washtub Bass

Playing this instrument is very simple. Just place the cup on a flat surface and pluck the rubber band. Twang! To change notes, just grab the rubber band with your other hand at different places above where you're plucking.

(See the picture for "correct posture.") By shortening the length of the rubber band, it'll vibrate at higher frequencies, and make higher notes.

Remember: practice makes perfect so practice, practice, and practice some more! Or you could get together and form "Rubber Bands!" (Pun intended) Have fun!