

# The Art of Sound

Rebecca Arkenberg

Exploring familiar instruments develops students' vocabulary and interpretation strategies when looking at or listening to unfamiliar instruments from other cultures.



I took a group of young music students to an exhibition that featured musical instruments. When we stopped to look at the violins, they asked how I explained this instrument to non-musicians. I told them that I usually asked people to look at the front and back of the violin and tell me if it was the same wood or different. "But everyone knows that the woods are different," they laughed. Of course they knew, because they all played the violin, but this fact may not be apparent to the average visitor.

## Exploring Instruments

Most students have heard or seen a violin, however, the complex and elegant structure of the instrument itself can provide a topic for discussion in an artroom, especially if a trip to a museum with a musical instrument collection is planned. Or, invite music students or local musicians to explain and demonstrate their instruments.

## Structure

Choose a musical instrument, then ask students to identify the materials and techniques that went into its construction. In the case of a molded plastic, baroque-style school recorder, think of historical methods and materials, wood and ivory.

Sharp tools are necessary to cut these substances, hollowing out an inner bore, then forming the outside through a combination of hand-carving and turning on a lathe. What naturally occurring hollow materials exist that might have served as even earlier wind instruments? Reeds, bamboo, gourds, bones, conch shells, and animal horns were and still are used to make wind instruments.

## Materials

Can students identify at least three different kinds of wood? The belly or top needs to vibrate, so it usually is made of spruce, a soft and resonant wood. The sides and back can be made of hardwoods like maple or rosewood, and even harder woods (usually ebony) are used for areas that get a lot of wear, such as fingerboards or fretboards.

Horns and flutes are made of metals—silver, brass, even gold. Other woodwind instruments may have wood or plastic bodies and metal keywork. Pianos and organs are really pieces of furniture, their sound-producing mechanisms hidden in wooden cabinets.

## Shape and Decoration

The form of musical instruments have been refined over the centuries. Look for embellishment related to other forms of art that use the same materials—cast, hammered, and engraved decoration on metal instruments is related to jewelry or silverware. Keyboard instruments provide large, flat surfaces for relief carving and painting, or the replication of architectural features.

Notice the scale of the decoration—who is it decorated for, the audience or the musician? Or both? Is the decoration organic or geometric? If there is a pattern, how does it conform to the instrument's shape and size? Look for symbols, words (including the signature of the maker), mottoes

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or poems. Some instruments are decorated with faces, the idea being that the instrument has a personality and a "voice." Violins may have ornately carved heads of mythical creatures instead of a scroll.

## Acoustics

Art teachers are on familiar ground when discussing materials, techniques, and ornament. But how long can you discuss an instrument before someone asks, "What does



Johann Wilhelm Haas, Miniature Natural Horn, Imperial City of Nürnberg, 1681. Ex coll: Ernst Buser, Binningen, Switzerland. National Music Museum. Joe R. and Joella F. Utley Collection, 1999.

it sound like?" Sound is vibration, and this is easy to demonstrate with items you probably have in your classroom. Strike a cardboard box with a pencil, then your hand. Stretch rubber bands of different sizes over your fingers or a small open box and pluck them.

### Identifying Sound Sources

Ask students to identify what is producing the sound for each instrument. How does the size of the instrument affect the sound? This can be demonstrated on flute/piccolo, violin/cello, or large and small drums. The thickness and length of piano strings are factors in determining pitch, high or low.

Wind instruments have openings for air to go in and for the air to come out, with holes, keys, or valves placed along the pathway that the air takes through the instrument. Compare the mouthpieces and bells of recorders, flutes, horns, or clarinets. Horns have a cup-shaped mouthpiece and a flaring bell to project the sound (have a student demonstrate what happens when a hand or mute is placed in the bell), while clarinets have a

single or double reed that vibrates and flutes have a simple hole.

### Music and the Human Form

How does the musician affect the sound of the instrument? Violinists and guitarists change the pitch by using their fingers to adjust the string length or tension; bowing, plucking, and strumming a string change the sound without changing the pitch. Wind players use their fingers and breath.

When musicians play their highest and lowest notes, play loudly and softly, and play fast and slowly, it becomes evident that a musical instrument and the human body must adapt to each other. Instruments must be held and balanced, using lips, fingers, wrists, and arms. Students can identify and even sketch the gestures that occur when an instrument is played.

Music is a powerful attraction; it stirs emotions and feelings in all living beings, and a deeper understanding of the musical instrument as a work of art will add to the enjoyment and appreciation of music.



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### Web Resources

Visit this site to find a collection of musical instruments in your area:

#### Directory of Musical Instrument

**Collections:** [www.music.ed.ac.uk/euchmi/cimcim/id/index.html](http://www.music.ed.ac.uk/euchmi/cimcim/id/index.html)

Instruments can be found in art, natural history, or science museums, historical houses, and private collections. Online resources often contain sound files.

#### National Music Museum:

[www.usd.edu/nmm](http://www.usd.edu/nmm)

#### The Metropolitan Museum of Art:

[www.metmuseum.org/Works\\_of\\_Art/department.asp?dep=18](http://www.metmuseum.org/Works_of_Art/department.asp?dep=18)

#### The Museum of Fine Arts, Boston:

[www.mfa.org/collections/index.asp?key=27](http://www.mfa.org/collections/index.asp?key=27)

#### Yale University Collection of Musical

**Instruments:** [www.yale.edu/musicalinstruments/](http://www.yale.edu/musicalinstruments/)

#### Mathers Museum of World Cultures:

[www.indiana.edu/%7Emathers/collections/music/index.html](http://www.indiana.edu/%7Emathers/collections/music/index.html)

#### Stearns Collection of Musical Instru-

**ments:** [www.hvcn.org/info/libscmi.html](http://www.hvcn.org/info/libscmi.html)

#### Museum of Making Music:

[www.museumofmakingmusic.org](http://www.museumofmakingmusic.org)

#### The Iowa Band Museum:

[www.cedarnet.org/cfband/museum.html](http://www.cedarnet.org/cfband/museum.html)

#### Rock and Roll Hall of Fame and

**Museum:** [www.rockhall.com](http://www.rockhall.com)

#### Georgia Music Hall of Fame:

[www.gamusichall.com](http://www.gamusichall.com)

#### Experience Music Project:

[www.emplive.org](http://www.emplive.org)

#### The Brass Players Museum:

[neillins.com/brass.htm](http://neillins.com/brass.htm)

#### The Library of Congress Collection of

**Musical Instruments:** [www.loc.gov/rr/perform/guide/instru.html](http://www.loc.gov/rr/perform/guide/instru.html)

#### The Library of Congress Dayton C. Miller

**Flute Collection:** [memory.loc.gov/ammem/dcmhtml/dmhome.html](http://memory.loc.gov/ammem/dcmhtml/dmhome.html)

#### National Museum of American

**History, Smithsonian:** [americanhistory.si.edu/collections/subject\\_detail.cfm?key=32&colkey=23](http://americanhistory.si.edu/collections/subject_detail.cfm?key=32&colkey=23)