

## INSTRUMENTS OF THE ORCHESTRA

### String Family

- WHAT:** Wooden, hollow-bodied instruments strung with metal strings across a bridge.
- WHERE:** Find this family in the front of the orchestra and along the right side.
- HOW:** Sound is produced by a vibrating string that is bowed with a bow made of horse tail hair. The air then resonates in the hollow body. Other playing techniques include pizzicato (plucking the strings), col legno (playing with the wooden part of the bow), and double-stopping (bowing two strings at once).
- WHY:** Composers use these instruments for their singing quality and depth of sound.
- HOW MANY:** There are four sizes of stringed instruments: violin, viola, cello and bass. A total of forty-four are used in full orchestras.

The string family is the largest family in the orchestra, accounting for over half of the total number of musicians on stage. The string instruments all have carved, hollow, wooden bodies with four strings running from top to bottom. The instruments have basically the same shape but vary in size, from the smaller **VIOLINS** and **VIOLAS**, which are played by being held firmly under the chin and either bowed or plucked, to the larger **CELLOS** and **BASSES**, which stand on the floor, supported by a long rod called an end pin. The cello is always played in a seated position, while the bass is so large that a musician must stand or sit on a very high stool in order to play it. These stringed instruments developed from an older instrument called the viol, which had six strings. The violin as we know it today was developed by master-craftsmen in 16th-century Italy. There is one more member of the string family: the **HARP**. It is found at the end of violin section, and its forty-seven strings are plucked, not bowed.



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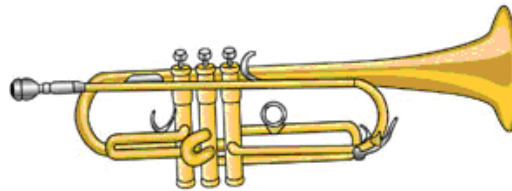
# Brass Family

- WHAT:** Long brass tube that is curled around, ending in a bell
- WHERE:** Find this family in the back of the orchestra on the right side.
- HOW:** Sound is made by buzzing the lips into a cup-shaped mouthpiece. The valves are used to change the length of the tubing and alter the pitch. The musician can also control the pitch using lip pressure.
- WHY:** Composers use the brass family for big themes and brilliant passages.
- HOW MANY:** There are four members of this family: horn, trumpet, trombone, and tuba. Eleven to fourteen brass instruments will be found in the orchestra.

The brass family usually sits across the back of the orchestra. The **HORN** is in the back row of the orchestra, behind the bassoons and clarinets. The horn is a very long brass tube wrapped around in a circle several times. If you unwound a horn's tubing, it would be twenty-two feet in length! The **TRUMPET** sits to the right of the horns, and the **TROMBONE** sits behind the trumpet. The trombone is an ancient instrument that has not changed much since the early times when it was called the sackbut. Part of the trombone's tube, called a slide, is movable, sliding in and out to change the pitch. The last member of the brass family is the **TUBA**. The tuba was first used in a symphony orchestra by Richard Wagner.



**Tuba**



**Trumpet**



**Trombone**



**French Horn**

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# Woodwind Family

- WHAT:** Wooden or metal tubes with holes in the tubing, to be covered or uncovered by the fingers and change the pitch.
- WHERE:** Find this family in the middle of the orchestra.
- HOW:** Sound is made by blowing across an open hole (flute, piccolo) or against a reed (clarinet, oboe, bassoon). This causes the column of air in the instrument to vibrate, and the musician can change the pitch by covering or uncovering certain holes on the body of the instrument.
- WHY:** Composers use this family for color and sparkle. Each woodwind has a unique and distinct timbre.
- HOW MANY:** There are four members: flute, clarinet, oboe, and bassoon. Eight to twelve are used in full symphony.

The woodwind family sits together in the middle of the orchestra, behind the violins and violas. The name “woodwind” originated because the instruments were once made of wood and are played using wind (by blowing). The **FLUTE** is now made of silver or sometimes gold. The flute has a cousin, very short and small, called the **PICCOLO**. This instrument plays the highest notes in the orchestra. The **CLARINET** sits directly behind the flutes and is long and black. It is descended from an instrument called the chalumeau. The **OBOE** sits to the right of the flute, is black in color, and has a wider opening at the end called the bell. The oboe is an ancient instrument, once called the hautboy, from the French. The oboe’s big brother is the **ENGLISH HORN**, found to the right of the oboes. To the right of the clarinet, behind the oboes, is the **BASSOON**. The bassoon is a very long wooden tube that has been folded in half so you can see the bell from the audience.



## INSTRUMENTS OF THE ORCHESTRA

# Percussion Family

**WHAT:** Various instruments of wood or metal that are struck with mallets.

**WHERE:** Find this family in the back of the orchestra on the left side.

**HOW:** Sound made by striking the instruments.

**WHY:** Composers use percussion instruments to give style and flair to a piece. This family provides the most noticeable rhythm to a piece.

**HOW MANY:** There are many instruments in this family. In orchestras, one musician is assigned to play the timpani, and then two to four additional musicians cover the remaining instruments.

Another family of the orchestra is the percussion family. This family is found on the far left side of the orchestra. Most of the percussion instruments are struck with mallets or sticks. One group of instruments in this family is the drums. **TIMPANI**, the pitched drums, stand alone and have one designated player. Other drums are the **BASS DRUM**, the **FIELD DRUM**, the **SNARE DRUM** and even the **DRUM SET**. You can hear other percussion sounds created by **CYMBALS**, **TRIANGLES**, **CHIMES**, **WOOD BLOCKS**, **TAMBOURINES**, **SLEIGH BELLS** and many others. Sometimes a composer uses tuned percussion instruments such as **XYLOPHONES** (tuned wooden bars), **VIBRAPHONES** (tuned metal bars) and the **GLOCKENSPIEL** (very high-pitched metal bars). The **PIANO** is also a member of the percussion family because its strings are struck with felt-covered hammers.



**Piano**



**Bass Drum**



**Timpani**



**Tambourine**



**Snare Drum**



**Chimes**



**Glockenspiel**



**Triangle**