

The Orchestral String Family consists of four instruments: the violin, viola, cello (sometimes called the violoncello), and double bass. These instruments are usually played with a bow which is drawn across the strings to produce musical tones. Other stringed instruments, like the guitar and harp, are played by plucking the strings. The piano has 88 sets of strings, but is considered a percussion instrument because its strings are hammered.

All orchestras have a string section. This family is the largest in the orchestra, and likes to sit *up front*. The string section has by far the most players in it. This is because it takes many strings to create a rich sound that balances well with the wood winds, brass and percussion.

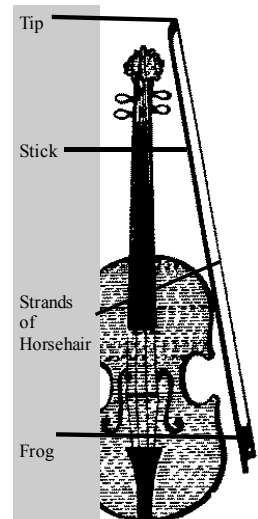
All four stringed instruments are made of wood and have a similar curvy shape, but their sizes are different. They have strings stretched over them which are made of gut, steel, or nylon.

THE BOW

The **bow** used with stringed instruments is a long stick that has horsehair or nylon stretched between the tip and the nut, or frog, under the hand. The shape, width and length of the bows for the stringed instruments varies. A screw mechanism moves the nut to tighten or loosen the strands. The bow for the double bass is the shortest and heaviest, and it has thicker strands of horsehair. When it is drawn across the strings, it is called **bowing**. The strings can also be struck with the bow, or plucked with the fingers. To pluck with the finger is called **pizzicato** ("pit-suh-CAH-toe) which means "plucked."

We call this essential equipment for string players the **bow** because early bows were more curved and resembled an archery bow.

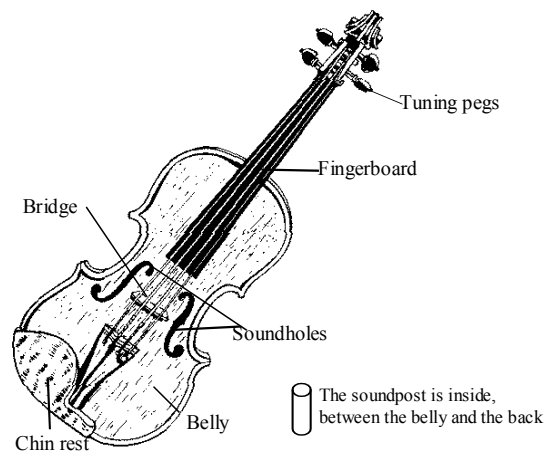
Violinists regularly wipe **rosin** over the hair of their bows. Rosin, usually made from the gum of pine trees, comes in the form of an amber-colored block. It makes the strands of the bow sticky so that they will grip the string and cause it to vibrate. It greatly enhances the sound that a violin can produce; no violinist would be caught without rosin! String players do not touch the strands of the bow because oil from their hands would cause the bow to lose its coarseness and become slick.



The major differences between these instruments are their **sizes** and their **musical ranges**. The smallest member of the string family is the violin. Because it is the smallest, it has the highest sound. As the instruments get larger, their strings get longer, and their sound is lower. The viola, slightly larger than the violin, plays notes in the middle range; the cello plays low notes, and the bass plays REALLY low notes.



The **violin** plays much of the melody in most orchestral music you hear. It has four strings which stretch all the way down the length of the instrument. They are fastened on top by the **pegs**, then are drawn down the **fingerboard** and the **bridge** to the **tailpiece**. The **chin rest** allows the head and shoulder to grip the violin firmly, while the fingers change the lengths of the strings on the fingerboard. The body is hollow, made of various kinds of springy wood that vibrate well. A long **bass bar** is glued under the belly and a **soundpost** is placed between the belly and the back to carry vibrations from the bridge throughout the body. The whole instrument rings with sound!



The **viola** is very similar to the violin, but is slightly bigger. The sound is breathier, throatier; its pitch is lower. The low notes are powerful and rich. Because it is larger than the violin, the player's fingers must stretch farther between notes. Violists spend much of their time in the orchestra playing accompaniments to the violins' melodies.

The **cello** has a beautiful, rich "singing" sound. The name cello is short for violoncello, which is Italian for "small double bass." The cellist sits while playing—the instrument is too big to place under the player's chin, yet it is too small to play while standing, like the double bass. Because it is so large, it has a lower range than the violin and viola.



The **double bass** is the largest instrument of the string family. It has sloping shoulders that make it easier for the left hand to reach the lower part of the fingerboard. Its pitch is much lower than anyone can sing, and the instrument provides the foundation for the orchestra's sound. In the orchestra, you will find the basses way over on the right side of the stage. The players will be standing up or sitting on a high stool. The bass is not used in a string quartet.