

The String Family

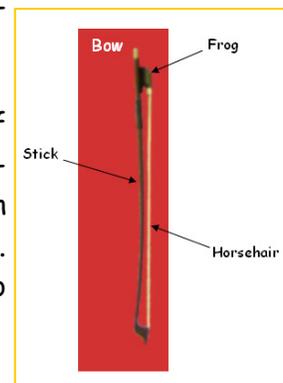
From the 10th century on, the instruments known as the string family began to develop. Of all the families of instruments, these instruments have the most in common with each other. A string instrument is an instrument which makes sound by the vibrating of strings. Harps and lyres were the first string instruments about 5,000 years ago. The instruments that were ancestors of the violin family were long boxes of wood with one or more strings stretched over them. About 1,000 years ago a bow was added to the playing of the lute.



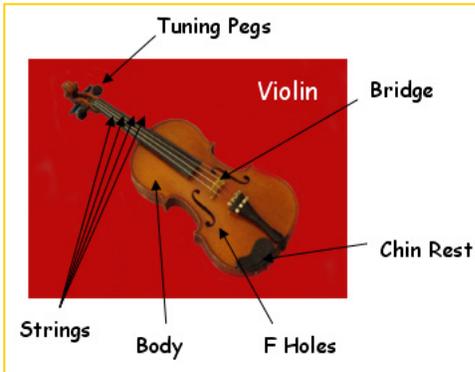
All string instruments make sound either by the friction of the bow going across the strings, by plucking the strings, or by striking the strings to make them vibrate. Sound lasts longer when the string is stroked by a bow than when it is plucked, a technique known as "pizzicato." In order to hear the vibrating string, the body of the instrument acts as a sounding board, amplifying the sound. The pitch is determined by the length, thickness, and tension of the string. The pitch can be changed by shortening or lengthening the part of the string that vibrates by pressing the string against the fingerboard with the fingers of the player's left hand.

The Viols (violins, violas, cellos, and double basses) all look the same. They are just different sizes. All of them are made of wood. All four of these instruments have four strings, each one having a different thickness. The strings can be made of gut, steel, nylon, or a combination of materials. The thicker strings are used for the lower pitches, thinner for higher ones. Each string has a different fundamental pitch, tuned by pegs, which adjust the tension of the string.

The **bow** used by the viols is made from thousands of strands of horsehair. These strands of horsehair can be tightened with a special mechanism called a frog (from the German word *Frosch*). Rosin is applied to the horsehair to help the bow grip the string better. To make the sound, the bow is pulled across the string, causing it to vibrate.



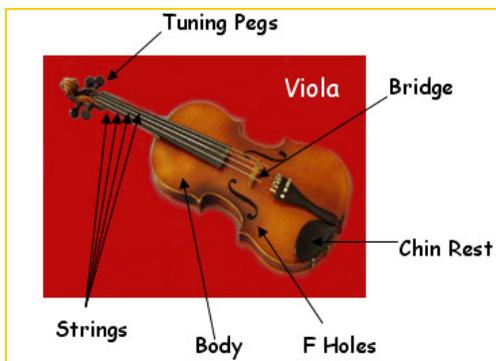
The members of the string family make up the largest number of instruments in the symphony orchestra. (See Structure of an Orchestra.)



Violin (Play Track 5 on the audio CD for its sound.)

The violin has the most brilliant quality of all the stringed instruments. As small as it is, it has more than 70 parts. It is made of maple, spruce, pine and ebony. The player holds the instrument under the chin, leaving the left hand free to move over the fingerboard.

The violin is the smallest in size and the highest in pitch of the stringed instruments. The violins make the core sound of the orchestra and often play the melody, but they are equally effective in a variety of supporting roles. There are more violins in the orchestra than any other instrument. There are usually 16 to 32 violins in an orchestra.

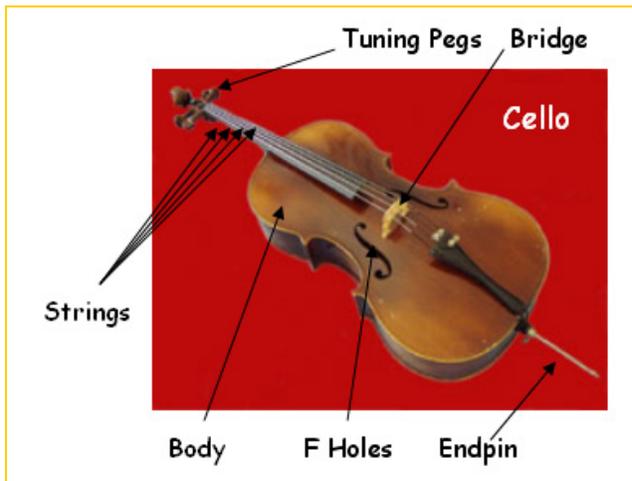


Viola (Play Track 6 on the audio CD for its sound.)

The next largest stringed instrument is the viola, with longer and thicker strings. It is tuned a fifth lower than the violin. Violas look like violins, but the timbre is deeper, richer, more somber, and less brilliant than the violin. It is in the "middle register" of the string family. The viola usually has a supporting role in the orchestra with fewer opportunities to play the melody, but it is good at expressing emotions of a more brooding quality.

To play the viola, the player also holds the instrument under the chin. Although there are fewer violas than violins in the orchestra, they are a vital part of the string section. A symphony orchestra usually has six to twelve violas.

Cello



Cello (Violoncello) (Play Track 7 on the audio CD for its sound.)

The cello is the low and rich sounding tenor member of the string family. Cellos often play the bass line together in octaves with the basses, when the soprano and alto are assigned to the first violins and second violins, respectively, and the tenor part to the violas.

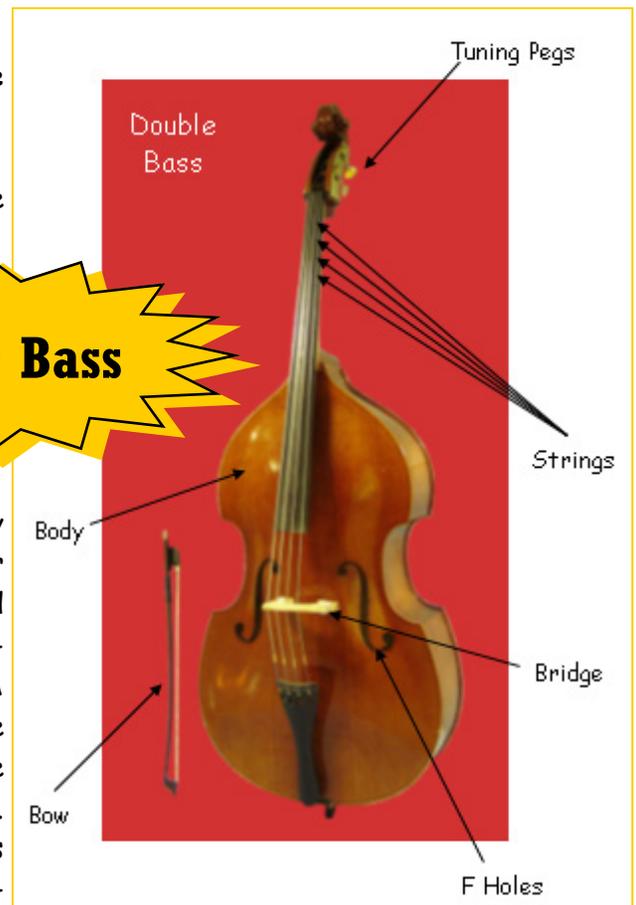
The cello has the largest range of notes from high to low of the stringed instruments.

At 4 feet tall, the cello is much bigger than the violin and viola. It is played with a bow that is thicker than a violin bow. The instrument is held upright between the player's knees, and is supported by a spike that comes out of the bottom of the cello and rests on the floor. The player must be seated to play this instrument. The right hand makes the sound with a bow or by plucking. The cello is tuned a full octave lower than the viola. There are usually four to ten cellos in an orchestra.

Double Bass (Contrabass) (Play Track 8 on the audio CD for its sound.)

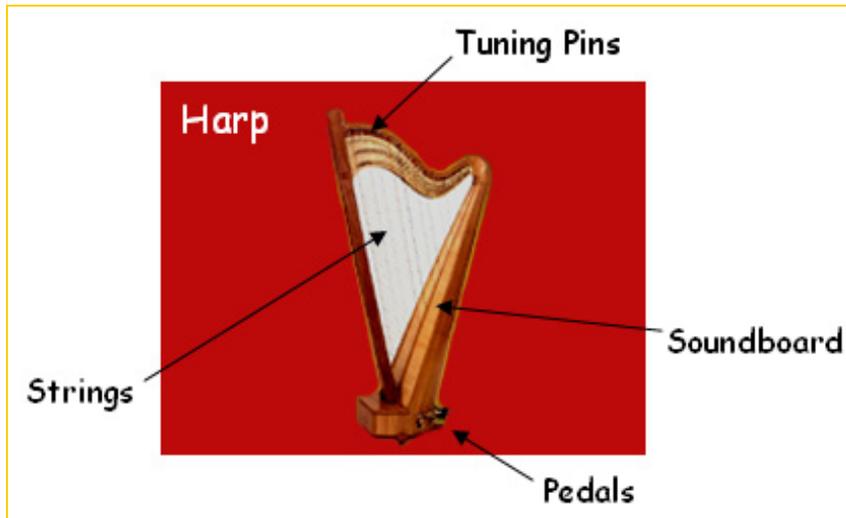
The double bass is sometimes called the string bass. The bass is the largest and lowest pitched member of the string family, standing over 6 feet tall. It is about 1 1/2 to 2 times taller than the cello and capable of reaching pitches one octave below the cello. The bass player must stand up or may sit on a stool to play the bass. A bass player must have great finger strength to press the heavy strings. The spread between the fingers on the strings is the greatest on the bass of all the string instruments. A bow can be drawn across its strings or the strings may be plucked with the fingers. Double basses are tuned in fourths, rather than fifths. There are two different types of bows the bass player may use; a French bow which is held overhand like a violin bow or the *Simandl* (German)

Double Bass



bow which is held with the palm of the hand facing up. Continued...

The double bass was developed during the sixteenth century. The double bass can be found playing a wide assortment of styles of music from classical to jazz. It provides the rhythmic and harmonic foundation of the orchestra. There are usually two to eight basses in an orchestra.

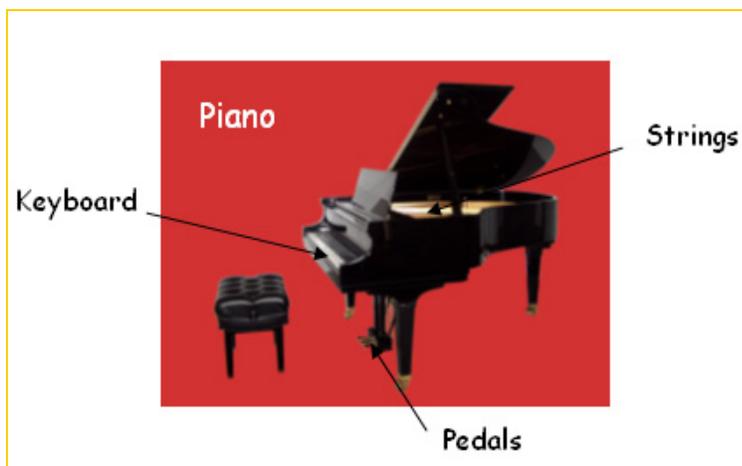


Harp

Harp (Play Track 9 on the audio CD for its sound.)

Although not a member of the violin family, the harp is the oldest of all string instruments. Modern-day harps have

47 strings and 7 pedals to play all the notes in its range. The use of harps in an orchestra depends upon the repertoire being performed. Usually an orchestra has one or two harps.



Piano

Piano (Play Track 10 on the audio CD for its sound.)

An instrument with a manual keyboard, the piano was invented in the early 1700's. When its keys are pressed, hammers strike strings of different

lengths/thicknesses attached to a soundboard. This causes the strings to vibrate, producing sounds that may be softened or sustained by the use of pedals. Alternatively, the piano may be considered a member of the Percussion Family. (See Percussion Family Section)