



## STRING INSTRUMENTS

A **string instrument** (or **stringed instrument**) is a musical instrument that produces sound by means of vibrating strings. The most common string instruments in the string family are violin, viola, cello, double bass, guitar, banjo, mandolin, ukulele, and harp. Not often immediately recognized as such, a piano is also a string instrument. The instruments of the string section are crafted by carefully carving, shaping and glueing wood pieces together, and covering them with several coats of varnish. No nails or screws are used at all.



The members of the string family all share many similarities, which are immediately obvious upon seeing a few of these instruments.

First of all, these instruments are all made out of **wood** and usually come out to be a dark brownish or reddish color. The familiar curved shape and f-holes of the stringed instruments are readily apparent to most people and remains constant among the family. **The fingerboard**, made out of ebony or rosewood also appears the same on the stringed instruments with its long black length. In addition, all of the stringed instruments have **4 strings** which are wound around the pegs (located in the scroll) and stretched down to the tailpiece, while crossing over the bridge. Finally, the string family instruments require a similar style **bow** with a long wood shaft holding a length of horsehair taut.

**Proper care** is another area in which all stringed instruments are treated similarly. To function properly, the stringed instruments must be stored in a place with constant temperature and humidity. Improper storage can lead to cracking, warping, or separation of glue. Also, the bow hair must be loosened when not in use to prevent unnecessary strain on the wood of the bow.

## PLAYING TECHNIQUES

All string instruments produce sound from one or more vibrating strings, transferred to the air by the body of the instrument (or by a pickup in the case of electronically-amplified instruments). They are usually categorized by the technique used to make the strings vibrate (or by the primary technique, in the case of instruments where more than one may apply.) The three most common techniques are plucking, bowing, striking and strumming.

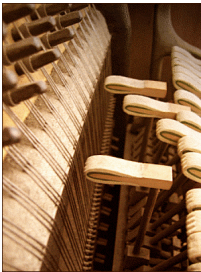
### Plucking

Plucking is used as the sole method of playing, on instruments such as the banjo, guitar, harp, lute, mandolin and either by a finger or thumb, or by some type of plectrum. String instruments normally played by bowing may also be plucked, a technique referred to by the Italian term *pizzicato*.



### Bowing

Bowing (*Italian: Arco*) is a method used commonly in string instruments, including the violin, viola, cello, and double bass. The bow consists of a stick with many hairs stretched between its ends. Bowing the instrument's string causes a stick-slip phenomenon to occur, which makes the string vibrate.



### Striking

The third common method of sound production in stringed instruments is to strike the string with a hammer.

By far the most well-known instrument to use this method is the piano, where the hammers are controlled by a mechanical action.

### Strumming

A strum is the act of brushing one's fingers over, or strumming the strings of a string instrument such as a guitar.





## Violin


The violin is by far the most common orchestral instrument and one of the most famous instruments in the world. It is also the smallest out of all the strings and has the highest pitch. Everyone knows what a violin looks like and probably what one sounds like, but not many people know the limits and capabilities of the violin.

There are many more violins than anything else in an orchestra. The violins make the core sound of an orchestra and carry the melody most of the time. They are usually divided into two parts, the first violins and the second violins.

The violin was born in Italy during the 16th century. Andrea Amati (1511-1577), an Italian that lived during this time, was perhaps the inventor of the violin. In the 16th century, violins looked very different -- they were covered with ornate drawings and paintings. Very few violins from this era still exist today, and they are considered priceless artifacts. Knowledge of violin making continued to pass through the Amati family for several generations. Eventually, the highly prized and secret method for creating violins found its way to two men: Antonio Stradivari (1644-1737) and Andrea Guarneri (1626-1698). Violins made by Stradivari and the Guarneri family still exist and are some of the most expensive and most highly prized violins today.

## Viola

The viola is slightly larger than the violin and has a deeper pitch in comparison. It is also in the "middle register" of the string family and a vital part of the orchestra.

 The viola has its own clef - the alto clef - and it plays in the alto and tenor registers of the voice much of the time. It was developed at about the same time as the rest of the modern string family, in the 16th and 17th centuries.



Originally, all string instruments were called violas. These instruments came in all sizes (as they still do) and tried to imitate the voices in a choir. Violas were born in the same way as violins; they were created by the Italian Andrea Amati.

Mozart was one of the first composers to treat the viola seriously, writing really interesting parts for it and exploring its tonal possibilities, even writing a concerto part for it. Beethoven followed his lead, and in the 19th century Berlioz, with his fine ear for orchestral effects, wrote a beautiful viola solo in a piece called Harold in Italy. Today, the viola is well established as both a solo, chamber, and orchestral instrument.



### **Cello**

The cello is still bigger than the violin and viola. It has a beautiful, mellow sound. Cello is considered the tenor voice of the string family; it can get down very low - to low C - and it has a range of more than three octaves. In a string quartet, the cello is the "bass" voice, the others being taken up by two violins and a viola. The cello must rest on the floor because it is too big to be held like the violin or viola.

The cello developed in the 1500s and its design continued to change over the next 200 years as designers tried building taller cellos, or adding a fifth string. By Bach's time the cello was pretty much like it is today. Like the early violin, it was used primarily for dance music at first. But in the 1600s, when it was turning up as the bass instrument in all sorts of ensembles, fine cello soloists began touring Europe.

Many early cello works were written by cellist themselves. The first non-cellist to write a solo cello piece was J.S. Bach, who wrote the six fantastically beautiful suites for unaccompanied solo cello.

Today cello is one of the most popular instruments for young people to learn. The cello attracts many people for its power and wide range of color. The cello has rapidly shouldered aside the violin as a solo instrument with its amazing and popular players such as Yo-Yo Ma.

### **Double Bass**

The double bass (also known as the string bass, bass viol, or contrabass) is the largest and lowest pitched string instrument of the violin family. It is usually six feet high and has four strings. Some basses have an optional mechanism that allows the player to lengthen one string, thereby lowering the pitch. Three strings basses were common during the 18th and 19th centuries and survive today in Eastern European folk music.

Until the 19th century, the only means of playing the bass was by a bow that was curved out. Later, musicians began to use the technique of plucking the strings or using bows that were similar to violin bows which were curved inwards.

Basses have come to be used in orchestras and some chamber music groups. It is one of the most important rhythm instruments in jazz and popular music today.



## STRING QUARTET

A string quartet is a musical ensemble of four string instruments — usually **two violins**, a **viola** and **cello**. A piece written to be performed by such a group is also called a string quartet.

The string quartet is one of the most prominent chamber ensembles in classical music.

It is widely seen as one of the most important forms in chamber music, with most major composers, from the late 18th century onwards, writing string quartets.



A composition for four players of stringed instruments may be in any form, but traditionally string quartets usually have four movements with a large-scale structure similar to that of a symphony. The outer movements were typically fast, the inner movements in classical quartet consisting of a slow movement and a dance movement of some sort (e.g., minuet, scherzo, furiant), in either order.

Josef Haydn holds the distinction of being the 'father' of the modern day string quartet. Haydn set out the main traditional form for the Classical string quartet:

- 1st movement: Sonata Form, Allegro, in the tonic key;
- 2nd movement: Slow, in the subdominant key;
- 3rd movement: Minuet and Trio, in the tonic key;
- 4th movement: Sonata-Rondo form, in the tonic key.

Ever since Haydn's day the string quartet has been prestigious and considered a true test of the composer's art.

Quartet composition flourished in the Classical era, with both Mozart and Beethoven writing famous series of quartets to set alongside Haydn's.

A slight slackening in the pace of quartet composition occurred in the 19th century. But, as time passed, string quartet music gathered quite a following, as performers, composers and audiences gained an appreciation and love of the style.

With the onset of the Modern era of classical music, the quartet returned to full popularity among composers, and played a key role in the development of Arnold Schoenberg, Bela Bartók, and Dmitri Shostakovich especially.

String quartet music still holds its place in the classical music scene of the 20th and 21st century.