

The STRING FAMILY



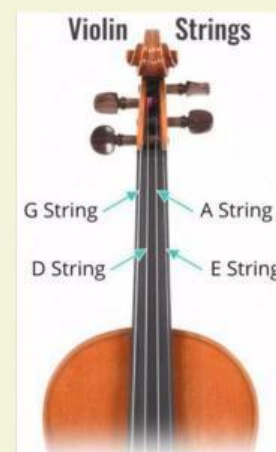
The string section of a standard orchestra is significantly larger and generally positioned at the front of the stage compared to the woodwind, brass, and percussion sections.



Violin

The smallest of the string instruments and therefore the highest.

It has 4 strings tuned to G D A E. Its music is written in the treble clef



- In the orchestra, violins are divided into 1st violins & 2nd violins. The first violins are usually situated on the left side of the conductor, playing melodies and solo parts, while the second violins often play harmony parts. Violins are positioned at the front of the orchestra due to their role in carrying melodies and the need for their sound to project without being overshadowed by louder instruments.
- Violins (*like other string instruments*) produce sound through string vibration, which is transferred to the instrument's body and resonates with the air inside to amplify and project the sound.
- The vibration is initially caused by the bow, coated with rosin for friction, being drawn across the strings, causing a stick-slip motion. The bridge transfers these vibrations from the strings to the top plate of the violin.
- The f-holes on the top plate are crucial for sound projection and contribute to the instrument's ability to sustain notes.

• Example 1

• Example 2

Viola

Size and bow:

- The viola is larger than the violin but much smaller than the cello. It looks like a violin and is played the same, but as a larger instrument than the violin, it has longer and thicker strings that produce lower pitched notes.



VIOLIN

VIOLA



- The viola is like the alto singer of the string family – its sound is deeper and warmer than a violin but not as low as a cello. The viola is tuned a fifth lower than the violin.
- Violas are a little bigger and heavier than violins, and they need a slightly heavier bow to make their thicker strings vibrate properly. This extra size and weight can make playing the viola a good workout!

Reading Music:

Viola players get to read a special kind of sheet music called the alto clef!



Most other instruments use the treble or bass clef, so it's a unique skill to have.



Position in orchestra:

In an orchestra, the viola section sits in the middle, creating a rich harmony that supports the violins (*who usually play the melody*) and the cellos and double basses (*who play the bass notes*).

- Example 1

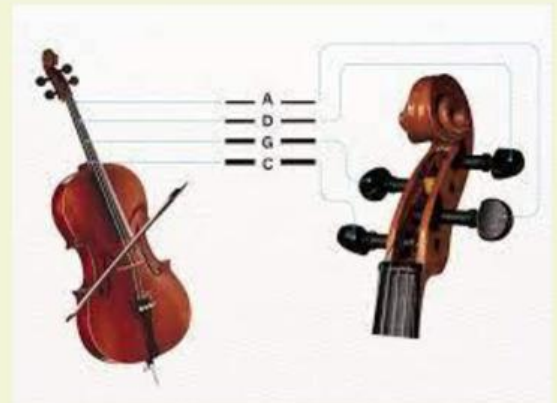
- Example 2

Cello

The cello has parts similar to a violin. Its four strings are tuned to C-G-D-A, from the lowest note to the highest. When you play the cello, you sit down. You hold the instrument between your knees. There is a metal rod called an end-pin that rests on the floor. You can adjust its height to make yourself comfortable. The cello is usually played with a bow.



The cello makes a deep, rich sound. Its lowest note is two octaves below middle C. But it can also play very high notes. For the highest notes, cellists can use a special technique called "thumb position." This means the left thumb presses down on the strings high up on the fingerboard. This is closer to the bridge, where the high notes are. The cello strings are tuned like the viola but down an octave.



Cello music is often written using the bass clef.  However, because the cello can play quite high, the tenor clef is also used, especially in solo music



- Example 1

- Example 2

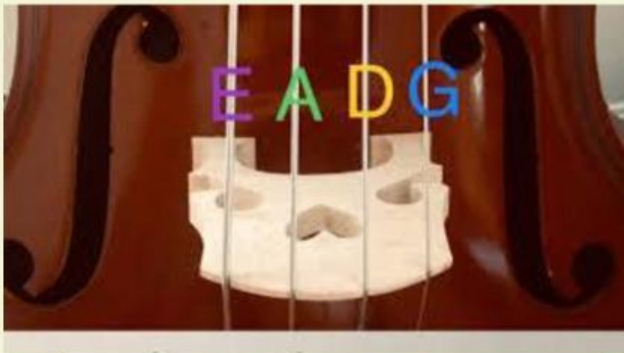
Double bass

The Double bass is the lowest sounding member of the string family. It is around 6 feet high so performers have to stand or sit on a tall stool.

Its name stems from its initial function: to double the bass line of large ensembles, playing an octave lower than the cello

The double bass is often used in jazz and dance bands as well as in the orchestra. It has a very rich deep resonating sound. When playing in jazz it is usually played PIZZICATO (ie without the bow)

The double bass is typically tuned in fourths (E-A-D-G, from lowest to highest string), unlike the other orchestral strings that are tuned in . Its music is also written in the bass clef. 



• Example 1



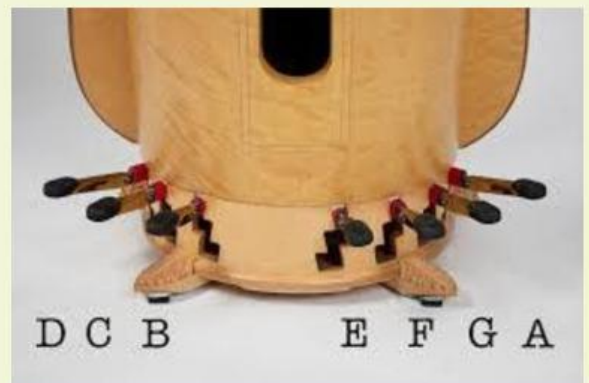
• Example 2

Harp

- A standard professional concert harp has 47 strings, allowing it to play nearly as many notes as a piano.
- To help harpists navigate this multitude of strings, Cs are red and Fs are black or blue, acting as visual landmarks.



- Glissandos are typically played using the right hand in an ascending motion and the thumb in a descending motion, with a rounded hand position for optimal sound production.
- A **glissando** is a harp technique where the musician sweeps their fingers across the strings, producing a flowing, ethereal sound.
- At the bottom of a big harp are seven pedals, one for each note of the musical alphabet (A, B, C, D, E, F, G).
- These pedals let the harpist change the sound of the strings. Each pedal has three positions: up (flat), middle (natural), and down (sharp).
- So, if a harpist wants to play a sharp note, they just push the pedal down. It's like having a built-in key-changer!



- Example 1

- Example 2

String Techniques

 Arco	• Playing with the bow, drawing it smoothly across the strings. 'Arco' is Italian for 'bow' • Sound is warm, rich and flowing
 Vibrato	• a left-hand technique where the finger stopping the string rocks slightly, causing a rapid, pulsating variation in the note's pitch • It adds a vocal-like warmth, expressiveness, and shimmer to the tone, making it more engaging for the listener.
 Pizzicato	• Plucking the string with your finger instead of using the bow. • Short, bouncy sound, like little raindrops.
 Tremolando	• Moving the bow very fast back and forth on one note. • The sound is shivery and dramatic, great for building tension or creating a sinister mood.
 Con sordino	• 'Con sordino' means 'with the mute'. A violin mute, or sordino, is a small device that clips onto the bridge of the violin. • When you put the mute on the bridge, it dampens the vibrations, making the sound softer and a little quieter.
 Double Stopping	• Two strings are bowed at the same time. • This gives a rich, powerful sound. • Sometimes the player is asked to play 3 or 4 notes at a time – triple / quadruple stopping.
 Harmonics	• Fingers are placed lightly at certain points along the string, so it vibrates in a special way. • Creates a soft, bell-like sound.
 Col Legno	• Bouncing the wooden part of the bow on the strings. <i>Col legno</i> means 'with the wood' in Italian • This gives a light percussive effect.

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