

Instrument of Violin

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Abstract: *Harmonic created by holding down one finger (thus "shortening" the string) and putting another finger down lightly, on the violin one, one usually holds down the first finger and touches the fourth lightly to the string "czardas" by Monti has a section with all artificial harmonic, does the "pe loc", movement from Bartok's.*

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A great violinist must build up a cache of knowledge in many disciplines. Playing technique is an obvious one—violinists must be able to bow, finger, and pluck the strings of their instrument in any manner of ways, from the first position to the second, third, and fourth positions.

Knowledge of the great literature for violin is another requirement. From Mozart, Beethoven, and Brahms to Mark O'Connor and Jean-Luc Ponty, there is abundant violin music in all genres that players may be expected to have familiarity with. Also required is the ability to read music on the treble clef.

Finally, and perhaps most importantly, violinists must understand their own instrument. While there is an entire field of professionals who build, alter, and repair violins—these people are known as luthiers—a player will be expected to perform minor maintenance on his or her own instrument. He or she will also need to know the parts of the instrument in order to have a dialogue with a teacher, with other players, or with a conductor.



How Does a Violin Work?

A violin produces sound by vibrating any combination of its four strings. Violin playing requires two distinct techniques performed by a player's two hands.

- The left hand is used for producing specific pitches. This is done by pressing down on the violin's strings at various points along its fingerboard. The technique is known as "stopping."
- The right hand is used to vibrate the strings. You do this by either plucking them (known as pizzicato) or by gliding a bow across them (known as arco). The arco technique is by far the most prevalent within violin literature, and it requires both down-bowing and up-bowing.

What Are the Key Features of a Violin?

Traditionally a violin has the following characteristics:

Four strings, tuned in 5ths: G3, D4, A4, E5. (The high E string is sometimes colloquially called the top string and the low;

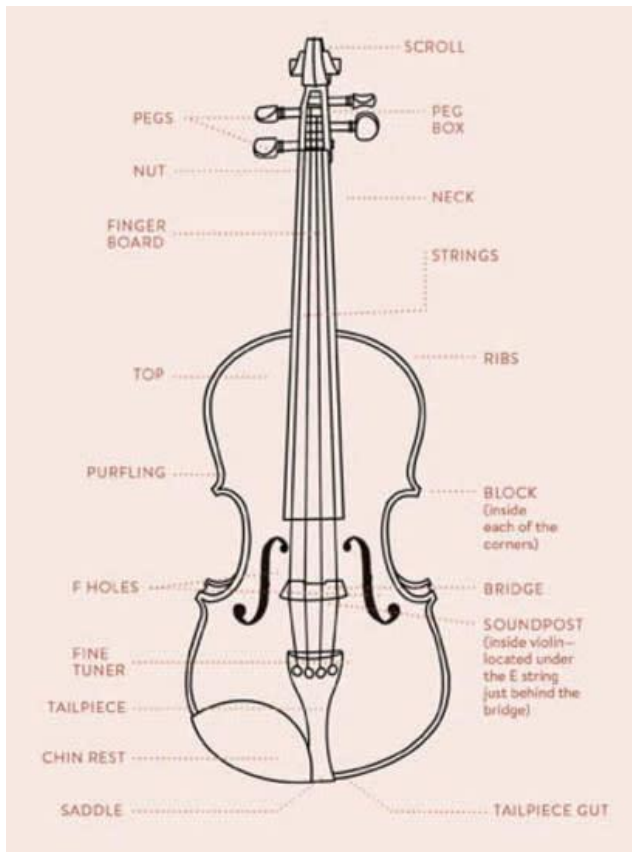
- G string might colloquially be called the bottom string.)
- Strings were originally made from sheep gut (confusingly called catgut), but steel strings are the most common types today.
- Can be played with a horsehair bow (arco), with the wooden back of the bow (col legno), or with fingers (pizzicato).
- Occupies the soprano voice in a string choir.
- Sound is produced by vibrating strings atop a hollow wooden body.
- Constructed with a spruce top (or soundboard), with maple used on the rest of the body

- Contains a fretless fingerboard where players depress their fingers to sound certain pitches. Pressing down on a string is known as a “stop.” The term “double stops” refers to simultaneously pressing two strings at once. Triple and quadruple stops are also possible.
- Is tuned using peg tuners at the top of the instrument and fine tuners along its tailpiece.
- A player tucks the instrument between their chin and shoulder. You use your right hand to bow or pluck, and the left hand to sound notes on the fingerboard.

20 Key Components of a Violin and How They Work

The violin is both an object of great beauty and symmetry as well as an ingenious work of mechanical design. Familiarize yourself with the parts of the violin and bow and get a better understanding of how each works.

Note that the focus is on the modern violin, as opposed to ancestral instruments that led to it. Unlike a cello or bass, a violin does not touch the floor.



- 1) Scroll. The decorative top of the violin. It's most often carved in the shape of a scroll but is sometimes carved in another shape, such as a person's head.
- 2) Pegs. Four wooden pegs around which the strings are wound. They are used to tune the instrument's strings. Tightening a string raises its pitch; loosening a string lowers its pitch.
- 3) Peg box. The enclosure in which the strings are wound onto the pegs.

- 4) Nut. A small piece of wood between the pegbox and fingerboard. It has four notches, one for each string to emerge over the fingerboard.
- 5) Neck. The part of the violin between the body of the violin and the pegbox and scroll.
- 6) Fingerboard. The surface where the fingers press down on the strings. It's generally made of ebony.
- 7) Top. The front of the violin. In most violins, the top is made from spruce wood and the back is made from maple wood.
- 8) Ribs. The thin strips of wood that wind around the sides of the violin, connecting the top and the back to form the sound box of the violin.
- 9) Strings. A violin has four strings tuned in intervals of fifths. From lowest to highest (left to right) they are G, D, A, and E. The strings are made from a variety of materials, including steel, synthetic materials and/or animal gut. They are strung over the fingerboard, from the pegs to the tailpiece.
- 10) Purfling. A thin strip of three-ply wood inlaid in a channel around the edge of the violin to protect the instrument from damage. It may look like an outline drawn around the edge of the violin, but its purpose is actually more protective than decorative.

- 1) Corner blocks. Wooden blocks inside the violin that stabilize the construction of the instrument.
- 2) F-holes. The two holes from which sound emerges from the violin. They are shaped like cursive fs. These, combined with the violin's hollow build, promote resonance.
- 3) Bridge. A decorative but functional piece of maple wood that balances underneath the strings and transmits vibrations from the strings into the body of the instrument to create sound. The bridge of the violin is not glued on, it is held in place by tension. The force that the strings exert on the bridge is equal to about 90 pounds.
- 4) Soundpost. A wooden post located inside the violin, under the right side of the bridge. It is crucial for transmitting vibrations of the strings into the body of the violin to create sound, and its placement can change the quality of that sound, in terms of volume and/or tone quality.
- 5) Fine tuner(s). Small tuners located on the tailpiece. They tune the violin but in smaller increments than the pegs do. Smaller violins often have fine tuners for all strings, but full-size violins tend to have them only for the E string.
- 6) Tailpiece. The somewhat triangular piece of wood where the strings are attached on the lower end of the violin.
- 7) Tailpiece gut. The cord that attaches the tailpiece to the violin.
- 8) Chin rest. A shaped piece of wood or plastic on which you rest your chin and jawbone. It's attached near the tailpiece.
- 9) Saddle. A block on the inside of the violin that helps support the tailgut and the tension of the strings.
- 10) Pickup. Found on an electric violin, a pickup converts the violin's acoustic vibrations into an electrical signal, which is then sent to an amplifier (much like is

done with an electric guitar, an electric bass, or an electronic keyboard).

Key Components of a Violin Bow and How They Work

A violin bow is a wooden stick that is strung with hair (traditionally the hair of a horse's tail) that is rubbed against tuned strings to produce sound. The bows used on violins, violas, cellos, and basses vary somewhat in terms of length, weight, and the number of hairs used in the stringing process.

There are five parts of the bow that a string player must familiarize themselves with before learning about bow direction:

- 1) The bow stick. The wooden backbone that runs down the length of the entire bow.
- 2) The bow hair. Horsehair string parallel to the bow stick; used to vibrate the violin's strings.
- 3) The tip. The upper edge of the bow where the hair connects directly to the bow stick. The tip of the bow is the uppermost portion of the bow that can be used by a violinist.
- 4) The frog. A small piece of wood attached to the handle of the bow; this is the other place where the hair is attached to the actual wood of the bow.
- 5) The grip (or pad). A rubber and metal part near the base of the bow stick.

Want to Become a Better Musician?

Whether you're a beginner violin player or have dreams of playing in a symphony orchestra, becoming a professional classical musician takes patience and perseverance. No one knows this better than Itzhak Perlman, the world's reigning virtuoso violin player. In Itzhak Perlman's Master Class on the violin, the beloved Juilliard instructor shares his fundamental violin techniques and practice strategies.

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