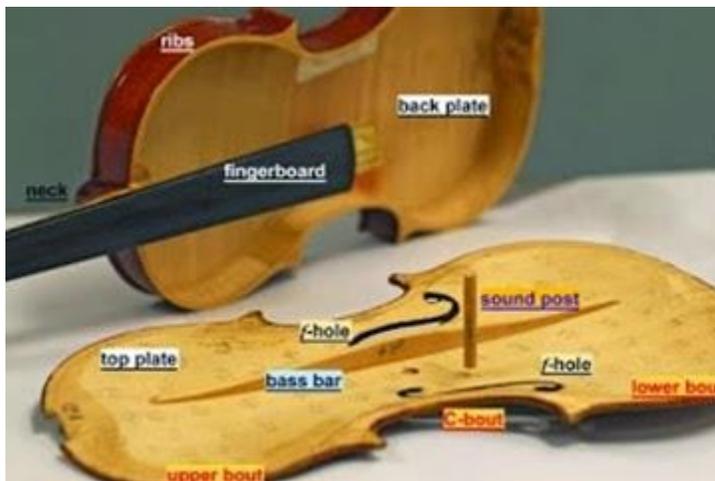
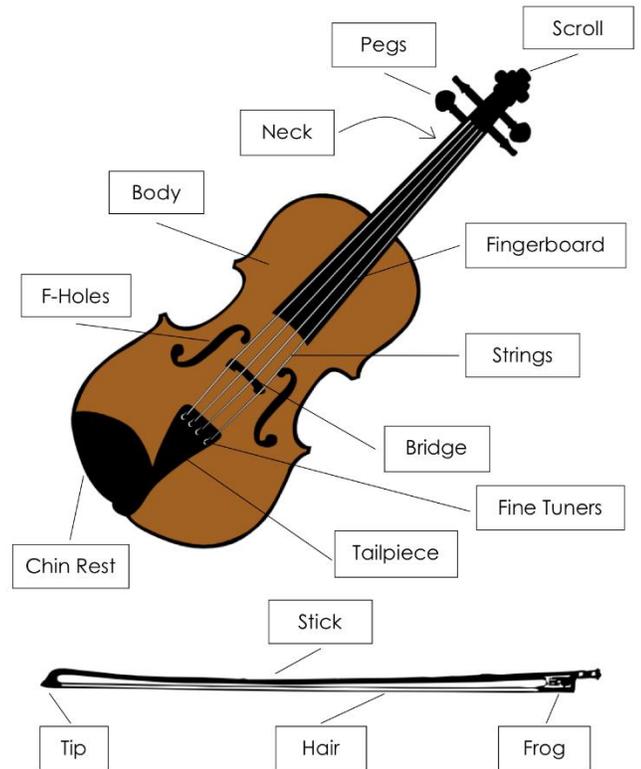


HOW DOES A VIOLIN MAKE SOUND?

A violin makes sound when you **vibrate the strings**, which might be made of **nylon, steel, or even gut!** You can **pluck** the strings with your fingers, or you can move a **bow** made with **hair from a horse's tail** across the strings. The string vibrations hit the **bridge**, which helps move some of the **vibration energy** from the strings to the **body** of the violin.

Violins have **hollow bodies**, which help **amplify, or strengthen,** the sound. The **F-Holes** carved into top of the violin also help the sound **resonate** by **connecting the air outside** the violin to the air **inside** the violin.

Parts of the Violin and Bow



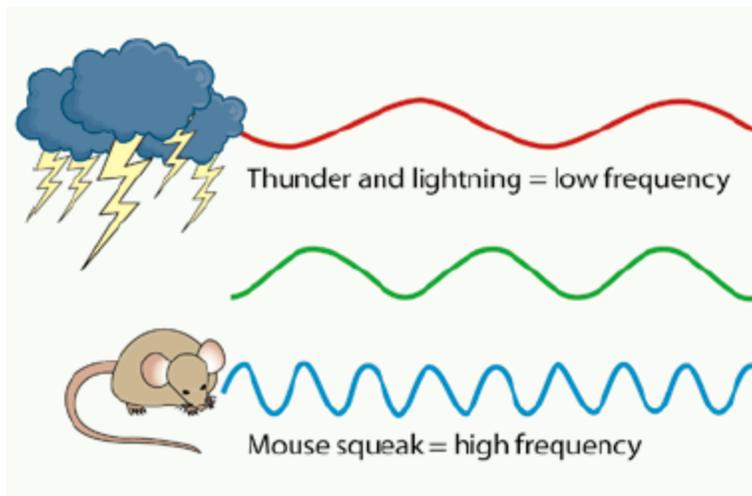
If you were to look **inside** a violin, you would see that the **top plate** has a long bar in the middle. This is called the **bass bar**. The bass bar helps support the top of the violin, but more importantly, it helps **move the sound vibrations evenly** around the top of the violin. This also helps the violin sound louder!

LEARN MORE ABOUT THE VIOLIN!

Look at all the different parts of the violin listed in the pictures. Can you guess what each part is for? How might it **affect how a violin sounds?**

WHAT IS SOUND?

Sound is a type of energy made by vibrations. When something vibrates, it moves tiny bits, or particles, of air. Sound travels in waves when these particles shake their neighbors until they shake the air particles all around!



If a noise has a **high pitch**, the sound waves are **closer together**. High sounds **vibrate very fast**, or have a **high frequency**. If a noise has a **low pitch**, the sound waves are **farther apart**, because the sound **vibrates slower**. This means that low pitches have a **low frequency**!

TRY THIS AT HOME!

Make your own paper plate string instrument and see if you can make **lower** and **higher frequencies**! Stretch different sizes of rubber bands across a paper plate and "strum" them. Do **bigger rubber bands** make **lower pitches**? What happens when you **press your fingers down on the strings**, like if you were playing a violin? Does the pitch **change**?

Try changing the **body** of the instrument and use an **empty tissue box**, **paper bowls**, or **empty cereal box**. How does the shape of the **body** change the **sound**? Does a **more hollow body** make the strings sound **louder**?