Why Some Notes Sound Higher or Lower Than Others

KS2 MUSIC KS3 SCIENCE Ages 10-14 ⏰ 3 min read

What Makes a Sound High or Low?

Every sound you hear comes from something **vibrating** – moving back and forth really quickly. When a guitar string vibrates, when a drum is hit, or when your vocal cords shake, they create sound waves that travel through the air to your ears.

The key to whether a note sounds high or low is how **fast** something vibrates. This speed is called **frequency**. A note that sounds high (like a whistle or a bird chirping) comes from something vibrating very quickly. A note that sounds low (like a deep drum or a foghorn) comes from something vibrating more slowly.

Think of it like jump rope. If you turn the rope slowly, it makes big, lazy loops. If you turn it super fast, it makes quick, tight circles. Fast turning = high pitch. Slow turning = low pitch. Your ears hear the speed of vibrations the same way.

How Do Musical Instruments Work?

Different instruments create different frequencies because they're designed to vibrate at different speeds. A **small guitar string** vibrates faster than a **large guitar string**, so it sounds higher. When you make a string tighter (by tuning a guitar), it vibrates faster and sounds higher too.

A **flute** works by blowing air through it, and different holes change the length of air inside – shorter air columns vibrate faster and make high notes, while longer air columns make low notes. In a **piano**, small hammers hit thin strings for high notes, and larger hammers hit thicker, longer strings for low notes.

Think of it like the difference between a small bell and a big bell. Tap a tiny bell and it rings high and fast. Tap a huge church bell and it rings low and slow. Size and thickness matter.

How Your Ears Detect Pitch

When sound waves enter your ear, they vibrate your **eardrum**. Your brain then interprets how fast those vibrations are happening. If the vibrations are very frequent (happening many times per second), your brain says 'that's a high note!' If vibrations are slower, your brain says 'that's a low note!'

This is why we call high notes '**high pitch**' and low notes '**low pitch**' – pitch is simply how fast the vibrations are. Understanding this helps musicians tune their instruments and composers create beautiful melodies by mixing high and low notes together.