Pitch and Volume: Understanding Sound Differences

KS2 SCIENCE SOUND AND HEARING Ages 10-14 ⏰ 3 min read

What Are Pitch and Volume?

When we talk about sound, we use two special words to describe different things: **pitch** and **volume**. Although people sometimes mix them up, they are completely different properties of sound. **Pitch** is how high or low a sound is, while **volume** is how loud or quiet it is.

Understanding Pitch

Pitch depends on how fast sound waves vibrate. When something vibrates very quickly, it makes a high pitch sound—like a bird chirping or a whistle. When something vibrates slowly, it makes a low pitch sound—like a deep drum or a whale's call. Imagine plucking a guitar string: if you make it tight, it vibrates faster and sounds higher. If you loosen it, it vibrates slower and sounds lower.

Think of it like: a dog whistle is high pitch (many vibrations per second) and a thunderstorm rumble is low pitch (fewer vibrations per second).

Understanding Volume

Volume is about how much energy the sound wave carries. A loud sound has big, powerful vibrations, while a quiet sound has small, gentle vibrations. You can whisper the word "hello" (quiet volume) or shout it (loud volume)—both are the same pitch, but the volume is very different. The volume of a sound doesn't change whether it's high or low.

Think of it like: tapping a drum gently makes a quiet sound, but hitting it hard makes a loud sound. The pitch stays the same either way.

Why Does This Matter?

Understanding pitch and volume helps us appreciate music, recognize different sounds, and understand how our ears work. A singer can perform the same note at

different volumes, and an orchestra might play many different pitches at the same volume. Scientists measure pitch in **Hertz** (how many vibrations per second) and volume in **decibels** (how powerful the sound is). A conversation is about **60 decibels**, while a rock concert can be **110 decibels**—much, much louder but not necessarily higher in pitch.

Quick Summary

Pitch = how high or low the sound is (controlled by vibration speed). **Volume** = how loud or quiet the sound is (controlled by vibration size). You can have a high, quiet sound or a low, loud sound—they're independent of each other!