

**Section A: Vibration Reasoning**

1. Plucking the string makes it vibrate, and these vibrations create sound waves that travel to our ears
2. A looser string vibrates more slowly, producing a lower-pitched note
3. Covering your ears blocks some of the sound waves from reaching your eardrums, reducing the volume you perceive
4. Accept a fair test description, e.g. playing the same sound behind each material and measuring how loud it sounds on the other side
5. The metal continues to vibrate after being struck, gradually losing energy until the vibrations become too small to hear

Section B: Real-World Applications

1. Curved walls and soft materials help absorb and diffuse sound, reducing unwanted echoes for a clearer listening experience
2. Sound travels well through water and can detect objects even in the dark, unlike light which doesn't travel far underwater
3. This is caused by the Doppler effect - as the ambulance approaches, sound waves bunch together (higher pitch), then spread out as it moves away (lower pitch)
4. They block or cancel out unwanted background noise, letting the wearer hear other sounds (or nothing) more clearly
5. The phone speaker vibrates, creating sound waves that travel through the air, reach your ear, and vibrate your eardrum, which your brain interprets as sound