

Nova's Sound Science Lab

Learning objective: To identify how sounds are made, associating some of them with something vibrating, and to understand how sound travels through a medium to the ear.

Follow Nova the Owl's instructions to create a scientific diagram showing how a guitar produces sound and how that sound reaches your ear. Use the word bank to label your diagram clearly.

Draw: Draw a large, clear scene showing a person playing an acoustic guitar. To the right of the guitar, draw a human ear. Between the guitar and the ear, draw a series of wavy lines to represent sound waves travelling through the air. Use a 'zoomed-in' bubble near the guitar string to show it vibrating (use small blurred lines to indicate movement). Ensure the style is a neat, scientific diagram.



Label words: Vibration · Sound waves · Medium (air) · Outer ear · Ear canal · Eardrum

Steps:

1. Explain what happens to the guitar string when it is plucked to create a sound.
2. Label your drawing to show where the sound waves travel through the air.
3. What happens to the eardrum when sound waves reach it?
4. If you played the guitar in outer space, where there is no air, would you hear the sound? Explain why.
5. Draw an arrow to show the direction the sound is travelling from the guitar to the ear.