

Nova's Sound Science Experiment Log

Learning objective: To identify how sounds are made, associated with something vibrating, and explain how sound travels to the ear.

Join Nova the owl in her laboratory! Use this template to record your findings after testing different objects to see how they create sound. Follow the prompts to describe your method, your observations about vibrations, and your scientific conclusions.

Word bank: vibration · medium · particles · pitch · volume · sound waves · ear canal · eardrum · amplitude · frequency

1. The Investigation: Which object did you choose to test? Describe how you made it create a sound and what you observed happening to the object while it was making that noise. (3 marks)

2. The Science of Vibration: Explain why the object made a sound. Use the word 'vibration' in your answer to describe the movement of the object. (3 marks)

3. The Journey of Sound: How does the sound travel from the object to your ear? Describe the path the sound takes through the air. (4 marks)

4. Changing Pitch: If you changed the way you made the sound (for example, by hitting it harder or changing its length), how did the pitch or volume change? (3 marks)

5. Nova's Challenge: If you were in a room with no air (a vacuum), would you be able to hear the object? Explain your reasoning using your knowledge of how sound travels. (3 marks)

Extension challenge: Research how different animals, such as bats or dolphins, use 'echo-location' to 'see' using sound. Write a short paragraph explaining how this helps them navigate in the dark.