

# Nova's Scientific Sound Investigation

*Learning objective: To identify how sounds are made, associate some sounds with something vibrating, and explore how pitch and volume change.*

Join Nova the Barn Owl on a scientific mission! Use this template to record your findings during our classroom sound experiment. Observe how different materials vibrate and describe your discoveries using scientific vocabulary. Ensure your explanations are clear and justify your results using the evidence you collected.

*Word bank: vibration · pitch · volume · sound wave · frequency · amplitude · medium · oscillation · travel*

**1. Hypothesis: Describe what you think will happen to the sound when you change the vibration of your object. Why do you think this? (2 marks)**

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**2. Observation: Explain the relationship between the speed of the vibration and the pitch of the sound produced. (2 marks)**

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**3. Data Analysis: Compare and contrast a high-pitched sound with a low-pitched sound. What are the key differences in how they travel? (3 marks)**

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**4. Justification: Why does the sound become quieter as you move further away from the source? Use the term 'sound wave' in your answer. (3 marks)**

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**5. Evaluation: What might happen to the sound if you placed your object inside a box filled with cotton wool? Explain your reasoning. (3 marks)**

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**6. Scientific Conclusion: Based on your experiment, how would you define 'sound' to a younger student? Summarise your learning. (4 marks)**

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*Extension challenge: Design a new musical instrument that produces both high and low pitches. Write a short paragraph justifying the materials you have chosen for each part of your instrument, explaining how they help to create and control the vibrations.*