SCIENTIFIC ENQUIRY OVERVIEW

Sound

YEAR 4 | SPRING 1 | 6 LESSONS

LESSON	OBJECTIVES	SCIENTIFIC ENQUIRY	EQUIPMENT
L1 **How are sounds made?**	• Define vibration. • Identify the source of common sounds. • Demonstrate that sound is caused by vibration.	**OBSERVING OVER TIME** Pupils sprinkle rice on a drum and observe over time how the rice moves when the drum is struck, linking vibration to sound.	• Drums or biscuit tins (1 per group) • Rice or salt • Triangle and beater • Recording sheet (1 per child)
L2 **How does sound travel?**	• Define a medium. • Describe how sound travels. • Compare sound through different materials.	**COMPARATIVE AND FAIR TESTING** Pupils make string telephones with different string materials and compare which carries sound best.	• Plastic cups (1 per group) • Different strings (cotton, fishing line, wool) • Pins • Recording sheet (1 per child)
L3 **How do our ears work?**	• Identify the parts of the ear. • Describe how the ear receives sound. • Explain the role of vibration in hearing.	**OBSERVING CLOSELY** Pupils examine a labelled ear diagram and a model, then build their own labelled diagram in their booklet.	• Ear cross-section model • Labelled ear diagrams (1 per child) • Booklet (1 per child) • Coloured pencils

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L4 **Big or small?**	• Define volume. • Plan a fair test of volume. • Explain how vibration strength affects volume.	**COMPARATIVE AND FAIR TESTING** Pupils strike a drum with different strengths, holding everything else constant, and use a sound meter app or rank order to compare volume.	• Drums (1 per group) • Sound meter app or device (1 per group) • Beater • Recording sheet (1 per child)
L5 **High or low?**	• Define pitch. • Plan a fair test of pitch. • Explain how vibration speed affects pitch.	**PATTERN SEEKING** Pupils fill bottles with different water levels, tap each in turn and look for a pattern between water level and pitch.	• Glass bottles (1 per group) • Water • Beater • Recording sheet (1 per child)
L6 **Can you keep the noise down?**	• Define soundproofing. • Plan a fair test of insulating materials. • Conclude which material muffles sound best.	**COMPARATIVE AND FAIR TESTING** Pupils wrap an alarm clock or speaker in different materials and use a sound meter to compare how much each muffles the sound.	• Alarm clock or small speaker (1 per group) • Wool, foam, bubble wrap, foil • Sound meter app (1 per group) • Recording sheet (1 per child)