

Changing Sound : Science : Year 4

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To find out that sounds are made when objects and materials vibrate.	Children will learn about how sounds are created, then explore the way sounds are produced by a variety of instruments or resonant objects.	<ul style="list-style-type: none"> Do children know that sounds are made when objects or materials vibrate? Can children make careful observations? Can children draw conclusions about sounds from their observations? 	<ul style="list-style-type: none"> Slides Worksheet 1A/1B/1C Variety of musical instruments if available Rice and drum; elastic bands; tuning fork and beaker of water; rulers; stereo speakers (if available) Question Cards (FSD? activity only)
Lesson 2	To investigate whether sounds can travel through different materials.	Children will learn about how sounds travel through different materials. They will give reasons why they think some materials will transmit sound better/ worse than others, then investigate.	<ul style="list-style-type: none"> Do children know that vibrations from sound sources travel through different materials to the ear? Do children know sound can travel through solids, liquids and gases? Do children know that some materials allow sound to pass through them more easily than others? 	<ul style="list-style-type: none"> Slides Worksheet 2A/2B/2C Drum/cymbal/something else loud! Waterproof buzzer or ticking clock Boxes with lid, water and sand with suitable containers (FSD? activity only) Pre-prepared 'string telephones'
Lesson 3	To explore the relationship between distance and volume.	Children will explore ways in which sounds change as you move further away from its source. They will suggest reasons for their findings.	<ul style="list-style-type: none"> Do children know that sounds get fainter as the distance from the sound source increases? Can children carry out an investigation to explore what happens to sound as it gets further away? Can children draw conclusions and describe what they have found out? 	<ul style="list-style-type: none"> Slides Worksheet 3A/3B Objects to make sounds Metre sticks, tape measures, etc.
Lesson 4	To find out that some materials are effective in preventing vibrations from sound sources reaching the ear.	Children will learn about why it is sometimes necessary to prevent sounds from travelling, then investigate the soundproofing effectiveness of a range of materials.	<ul style="list-style-type: none"> Can children name some of the reasons why preventing sound to travel is sometimes important? Can children plan a test to measure how well different materials muffle sound? Can children draw conclusions about which materials muffle sound the best? 	<ul style="list-style-type: none"> Slides Worksheet 4A/4B Buzzers/rattles/ticking clocks Materials to test (e.g. foam sheets, fabric, newspaper, bubble wrap, tin foil, kitchen roll, clingfilm, paper towels, cotton wool, etc.)
Lesson 5	To investigate how sounds can be different pitches and volumes.	Children will learn about pitch and volume, then investigate ways in which they may be altered by a variety of instruments or resonant objects.	<ul style="list-style-type: none"> Do children know that the term 'pitch' describes how high or low a sound is? Can children recognise changes in pitch and identify high and low notes? Can children investigate different instruments and make generalisations about pitch? 	<ul style="list-style-type: none"> Slides Worksheet 5A/5B/5C Xylophones/glockenspiels Books, CD ROMs, access to internet, etc. Variety of drums (FSD? activity only)
Lesson 6	To find out how the length, thickness and tightness of a string affects its pitch.	Children will consider how the pitch of notes produced by stringed instruments is altered, then investigate further by experimenting with instruments or by making instruments.	<ul style="list-style-type: none"> Do children know that the pitch of a stringed instrument depends on the length, thickness and tightness of the string? Can children suggest ways of testing what happens to the pitch of a string when you alter the length, tightness and thickness? Can children draw conclusions from their observations? 	<ul style="list-style-type: none"> Slides Worksheet 6A/6B/6C Variety of stringed instruments Elastic bands, boxes, tubes, etc. (FSD? activity only)
Lesson 7	To find out how sounds can be made by air vibrating and how to change the pitch of notes produced by vibrating air.	Children will learn how sounds can be made by air vibrating, then explore ways in which the pitch of these sounds can be altered.	<ul style="list-style-type: none"> Do children know that sounds can be made by air vibrating? Can children suggest ways to change the pitch of a sound made by air? Can children describe how to change the length of the air column vibrating to change pitch? 	<ul style="list-style-type: none"> Slides Worksheet 7A/7B/7C Empty bottles Water Xylophones/glockenspiels Recorders (FSD? activity only)