**Year 4 Science Curriculum – Autumn 2**

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| **Theme: Sound** |
| **Curriculum objectives** | **Vocabulary** | **Links across the curriculum** |
| Identify how sounds are made, associating some of them with something vibrating.Recognise that vibrations from sounds travel through a medium to the ear.Find patterns between the volume of a sound and the strength of the vibrations that produced it.Recognise that sounds get fainter as the distance from the sound source increases.Find patterns between the pitch of a sound and features of the object that produced it. | **Communicate** | To share information. | **Compare** | To estimate, measure or note the similarity or difference between items. | Music:* Pitch and tone of different instruments

ICT:* Data logging

Maths:* Interpretation of data (numbers)

English:* Oracy for presentation and debate
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| **Pluck** | To pull and release the strings of a musical instrument. | **Taut** | Tightly pulled or stretched. |
| **Travel** | To move from one place to another. | **Evaluate** | To consider how well something has been done. |
| **Fair test** | An enquiry to find out how changing one variable affects something else. | **Refute** | To use evidence to show that a statement is incorrect. |
| **Support** | To use evidence to show that a statement is correct. | **Variable** | Something that can be changed, measured or observed in an enquiry. |
| **Tier 3 vocabulary** [SNAP23\_Y4\_M1\_states\_ms.docx (live.com)](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fstatic.collins.rhapsode.com%2FSnap_Science%2FTeaching_Science%2FYear_4%2FSNAP23_Y4_M1_states_ms.docx&wdOrigin=BROWSELINK) |
| **Prior knowledge:** *What specifically have pupils learned that is relevant to this unit that they are building upon?* | **Future knowledge:** *What specifically will pupils learn in the future that is relevant to this unit?* |
| Children have previously learnt:● That we hear sounds with our ears (Year 1 Biology – Animals, including humans).● To classify materials as solids, liquids or gases (Year 4 Chemistry – States of matter). | This prepares children for later learning:● Sound as a wave with speed and frequency (Key Stage 3 Physics – Sound waves)Sound is included only once in the National Curriculum for Key Stages 1 and 2, but links to work on materials and states of matter in Key Stage 2 and should be discussed in the context of learning about light in Year 3 and Year 5, comparing similarities and differences between light and sound. |
| **Lesson Sequence** | **Key Knowledge** | **Key Skills** |
| How are sounds made? | * Describe sounds made by different sound sources.
* Something that produces sound is a sound source.
* Observe vibrations and hear the sounds created by them.
 | Working scientifically:● Making systematic and careful observations [and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers]. |
| How do sounds reach our ears? | * Use an ear gong to learn that sound can move through a solid material to reach their ears.
* Sound moves through other materials including liquids and gases.
* Sounds travel better through solids than gases.
* The word ‘travel’ to describe the sound moving from the source to the ear.
* There is no air in space so you would not hear any sound.
* Sounds are made when something vibrates. This is the sound source.
* Sounds travel from the source through a material to our ears.
* They know this because when the spoon vibrated, the sound travelled through the string or the air to their ears.
 | Working scientifically:● Reporting on findings from enquiries, including oral and written explanations, [displays or presentations of results] and conclusions.Scientific enquiry type:● Comparative testing. |
| How can we change the volume of a sound? | * Sound is measured in decibels.
* Associate size and strength of vibration with loudness.
* The volume of sounds made by instruments can be changed, finding patterns in the data they collect.
 | Working scientifically:● Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including [thermometers and] data loggers.● Using results to draw simple conclusions, make predictions for new values, [suggest improvements and raise further questions].Scientific enquiry type:● Comparative testing. |
| How does the volume of a sound change as we move away from the source? | * What happens when we move away from loud and quiet sounds.
* Measure, with a data logger or app, how volume changes with distance from the source.
 | Working scientifically:● Using results to draw simple conclusions, [make predictions for new values, suggest improvements and raise further questions].Scientific enquiry type:● Fair testing.● Pattern seeking. |
| How can we change the pitch of a sound? | * Play and listen to instruments of different sizes to find out how size affects pitch.
* How notes of different pitches are played by varying the length of the air column in wind instruments.
* Use their observations to identify patterns.
 | Working scientifically:● Identifying differences, similarities or changes related to simple scientific ideas and processes.Scientific enquiry type:● Comparative testing. |
| What affects the pitch of a plucked note? | * How the pitch of plucked notes can be change.
* The length, thickness or tautness of a band or string affects the pitch of the note it plays.
 | Working scientifically:● Using results to draw simple conclusions, make predictions for new values, [suggest improvements and raise further questions].Scientific enquiry type:● Comparative testing. |
| **Themes and links** |
| **Themes (types of enquiry)** | **Where these are covered:** | **Links across the science curriculum** |
| **Observation over time** |  |

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| **EYFS**  |  |
| **1**  | Seasons |
| **2**  | Growing |
| **3**  |  |
| **4**  | Electricity |
| **5**  | Materials |
| **6** | Classification of living things |

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| **Research** |  |
| **Pattern seeking** | * Lesson 4
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| **Comparative and fair testing** | * Lesson 2
* Lesson 3
* Lesson 4
* Lesson 5
* Lesson 6
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| **Identifying, classifying and grouping** |  |  |