**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 |
| **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** |  | | | | | | | |  |  | | --- | --- | | **EYFS** |  | | **1** | Seasons | | **2** | Growing | | **3** |  | | **4** | Electricity | | **5** | Materials | | **6** | Classification of living things | | |
| **Research** |  | | | | | | |
| **Pattern seeking** | * Lesson 4 | | | | | | |
| **Comparative and fair testing** | * Lesson 2 * Lesson 3 * Lesson 4 * Lesson 5 * Lesson 6 | | | | | | |
| **Identifying, classifying and grouping** |  | | | | | | |  | |