**Year 4 Science Curriculum – Spring 1**

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| **Theme: Human impact on the environment** | | | | | | | | | |
| **Curriculum objectives** | | | **Vocabulary** | | | | | | **Links across the curriculum** |
| To recognise that environments can change and that this can sometimes pose dangers to living things. | | | **Compare** | To estimate, measure or note the similarity or difference between items. | **Litter** | | Things that have been thrown away and that are lying on the ground. | | Maths:   * Presenting data in tables and graphs * Interpreting data   Geography:   * The water cycle and environmental impacts   English:   * Persuasive letter writing – why we should save water * Oracy | |
| **Evaluate** | To consider how well something has been done. | **Variable** | | Something that can be changed, measured or observed in an enquiry. | |
| **Biodegradable** | An adjective used to describe a material that breaks down or decays naturally through the action of micro-organisms. | **Compost** | | A mixture of decaying organic matter, used for fertilising soil. | |
| **Decompose** | The process where bacteria and worms break down natural materials into tiny pieces that help new plants grow. | **Environment** | | The natural world of land, sea, air, plants and animals. | |
| **Filter** | To use a special tool or process to separate materials. | **Fungi** | | A group of living things including mould, mushrooms and yeast. | |
| **Micro-organism** | Any living thing too small to be viewed by the unaided eye. | **Tier 3 vocabulary** | | [SNAP23\_Y4\_M3\_environment\_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_M3_environment_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:   * about the feeding relationships of animals in a habitat and how to show them in a food chain (Year 2 Biology – Living things and their habitats). * to understand the difference between things that are alive, were once alive and never lived (Year 2 Biology – Living things and their habitats). * that plants gain nutrients from soil which help them grow healthily (Year 3 Biology – Plants). * what soil is made of (Year 3 Chemistry – Rocks. * that some materials can be recycled (Year 2 Chemistry – Uses of everyday materials). | | | | | | This prepares children for later learning:  - about animal life cycles (Year 5 Biology – Living things and their habitats)  - about how materials decompose (Year 5 Chemistry – Properties and changes of materials)  - about adaptation (Year 6 Biology – Evolution and inheritance). | | | |
| **Lesson Sequence** | | **Key Knowledge** | | | | **Key Skills** | | | |
| 1. What is the impact of litter on our school? | | * Which types of litter can be recycled. * Identify who or what might be affected by the presence of litter in their school grounds. * Create an argument against the statement, ‘Litter doesn't hurt anyone!’ * Consider how they might reduce the amount of litter in their school grounds or the amount of waste created in their classrooms or dining halls. | | | | Working scientifically:   * identifying differences, similarities [or changes] related to simple scientific ideas and processes | | | |
| 1. How do materials change over time? | | * Decomposition or decay is the rotting of once-lived things through the action of bacteria and fungi into very small pieces that can be used to help other life grow. * Worms, micro-organisms and fungi help the remains of living things to decompose. * Some materials, including plastics and glass, cannot decompose. They are not biodegradable. * How to set up an observing over time enquiry. | | | | Working scientifically:   * setting up simple practical enquiries, comparative [and fair] tests * recording findings using simple scientific language, drawings, labelled diagrams, [keys, bar charts,] and tables   Scientific enquiry type:   * observing over time | | | |
| 1. How do microplastics get into the food chain? | | * Microfibres are a type of microplastic released when we wash plastic- based fabrics, such as fleece. * Plastic pollution is the introduction into the environment of plastics which cause harm to living things. * Sewage sludge containing microplastics is used as fertiliser for soil. * Worms accidentally eat microplastics when they are eating organic matter in soil, and explore how this affects the whole food chain. | | | | Working scientifically:   * recording findings using simple scientific language, [drawings,] labelled diagrams, [keys, bar charts, and tables] | | | |
| 1. How can we prevent microplastics from getting into our seas and oceans? | | * Our seas and oceans are polluted with plastics which are entering the food chain. * Carry out a comparative test enquiry to find out which material is best at filtering out microplastics. * Scientists are developing ways to prevent microplastics from escaping into our sewage. | | | | Working scientifically:  - setting up simple practical enquiries, comparative [and fair] tests  - recording findings using simple scientific language, [drawings, labelled diagrams, keys, bar charts,] and tables  - using results to draw simple conclusions, [make predictions for new values, suggest improvements and raise further questions]  Scientific enquiry type:   * comparative testing | | | |
| 1. How can we clean up birds affected by an oil spill? | | * Oil, from oil spills at sea, harms animals living in ocean habitats. * Plan, carry out and evaluate a comparative test enquiry to find out which method is best for removing oil from a feather. * Discuss why wildlife rescue workers use detergents to clean oil from bird feathers. | | | | Working scientifically:  - setting up simple practical enquiries, comparative [and fair] tests  - using results to draw simple conclusions, [make predictions for new values, suggest improvements and raise further questions]  Science 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** | Properties and used of materials | | **2** | Growing seeds and bulbs | | **3** | Forces, friction and magnets | | **4** |  | | **5** | Plant and animal lifecycles | | **6** | Human circulation | | |
| **Research** | * Lesson 1 * Lesson 2 * Lesson 3 | | | | | | |
| **Pattern seeking** |  | | | | | | |
| **Comparative and fair testing** |  | | | | | | |
| **Identifying, classifying and grouping** | * Lesson 4 | | | | | | |  | |