Cycles in Nature (Biology)

Year 3

End Points:

- The natural environment changes as the seasons change.
- We have four seasons: spring, summer, autumn and winter.
- We have seasons because the Earth is titled as it makes its journey around the sun.
- Plants can change through the seasons with different life cycle stages for each season.
- Plants grow, live and reproduce.
- Flowering plants produce pollen.
- When fertilised, pollen can join with the ovule to grow into a seed and then eventually a new plant.
- Some animals migrate when the seasons change.
- The life cycle of a frog.

Building on their understanding of the environment, plants and animals from previous units, children will learn about cycles in nature. They will study patterns, trends and cycles that occur throughout the seasons, in the life of plants and in the life of animals. Children will understand that the tilt of the earth creates our seasons. This knowledge will be built upon in the Year 5 unit on Astronomy. Children will ask and answer questions about the patterns seen in nature as the seasons change. They will look closely and observe changes in the seasons in their own environment. Children will think scientifically about the changes to plants through the seasons, how the increased hours of sunshine in the summer help plants to gain the necessary energy to grow bigger. Building on knowledge from Year 1 children will look again at deciduous and evergreen trees. Building on knowledge from Year 2 Geography, children will recognise how the seasons and animal migration patterns are interconnected. Building on their understanding of cycles, children will study the life cycles of plants and animals, specifically flowering plants and frogs. Additional life cycles of living things can be added to add further context. Metamorphosis is introduced as children learn about the changes in the life cycle of frogs. Children will identify the function of different parts of flowering plants and will explore the part that flowers play in the reproduction of flowering plants. This knowledge will be revisited in more detail in a later Year 3 unit studying plants.

Lesson Sequencing:

The unit begins with children learning about the natural changes the environment goes through as the seasons change. They will learn that this happens because the Earth is tilted as it makes its journey around the sun. Children will build on this knowledge in lesson two when they look at how plants can change through the seasons. Lesson three will develop further understanding of plant life cycles by looking at how they reproduce. In lesson four, children will learn about the effect seasons can have on animal migration. Lesson five will explore the life cycle of a frog. In the assessment lesson, children will apply the knowledge learnt through an explanation of two different cycles in nature.

Misconceptions:

- It always snows in winter.
- It is always sunny in summer.
- There are only flowers in spring and summer.
- Plants are not alive as they do not move.
- Plants get their food from the soil.
- Flowers are just decorative and not a vital part of reproduction.

Working Scientifically criteria met in this unit:

- asking relevant questions and using different types of scientific enquiries to answer them
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using straightforward scientific evidence to answer questions or to support their findings
- identifying differences, similarities or changes related to simple scientific ideas and processes
- setting up simple practical enquiries, comparative and fair tests
- 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
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions