Science – Year 5

Living Things and Their Habitat

How does the cycle of life differ for all living things?

NC objectives - **areas of study**	End point of area of study	Vocabulary		
		Basic	Adventurous	Technical
describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals.	Children confidently name different mammals and identify different stages in their life cycle, explaining them using the correct vocabulary. They are able to compare the life cycles of mammals, amphibians, insects and birds. They understand that animals reproduce in this life cycle. Children name different plants and their parts. They identify the parts of the plants needed for reproduction and explain some of the ways plants reproduce.	life cycle, live young, egg, plantlets, runners, cuttings		reproduce, germination, fertilisation, pollination, sexual, asexual, embryo, sperm, metamorphosis, chrysalis, anthropologist

Knowledge

Substantive Knowledge

- Retrieval- this unit of learning builds upon the pupil's knowledge from Year 2 and 4 Living things and their habitat and Animals including humans. pupils know if something is living and can identify how some animals are suited to their environment or micro-habitat. They know the different diets of animals and how energy is transferred in a simple food chain. Pupils should :
- Know that different parts of plants have one or more functions (jobs)
- Know that the stem holds up the leaves so that they can gather light to make food and holds up the flowers so that they can receive pollen and disperse their fruits; the stem also transports water and minerals from the roots to the other parts of the plant
- Know that the leaves make food by trapping light and using its energy to turn carbon dioxide and water into carbohydrates
- Know that the function of a flower is reproduction, where flowers of the same kind exchange pollen – made by an anther – in a process called fertilisation, and a structure in the flower's ovary called an

Disciplinary Knowledge

Children work as biologists and naturalists to explore the life cycle of plants and animals around them.

Similarities and differences

Children identify different groups of animals and the different stages of their life cycle. They are able to use first hand knowledge of pets and research about different stages in humans and animal's development and talk about how they grow into adults. They compare the different life cycles of animals and understand that animals including humans reproduce.

Children use prior knowledge about plants to support their understanding of plants reproduction and the parts of the plant used for this. They group and classify different animals according to their lifecycle, for example those that lay eggs and those that don't.

Evidence

ovule becomes a seed; the ovary then becomes a fruit which helps the seed leave the plant in a process called dispersal • • Lesson 1 • LO: To know the life cycle of a flowering plant • Life cycle, reproduction, pollination, fertilisation, germination • Know the life cycle of a flowering plant, be able to explain the technical terms pollination, fertilisation, germination and the role of seed dispersal (retrieval). Know that two parents are required for sexual reproduction, male and female parts form a seed and the offspring will be genetically different to the parents. • Lesson 2 • LO: To know how non-flowering plants reproduce • life cycle, sexual, asexual, plantlets, runners, cuttings • Know the life cycle of non-flowering plants, that the offspring will be genetically identical to the parent, only one parent is required. • Lesson 3 • LO To know the life cycle of mammals. • Life cycle, embryo, egg, reproduce, sexual, sperm, fertilise 3. How do we know that we have found all of the mammals? • Know that in most mammals (e.g. dogs) a fertilized egg develops in the womb into an embryo and is then born and fed on milk before it is weaned onto the food that is adapted to eat; it then develops to maturity in a period called adolescence after which it can reproduce and the cycle can begin again • Lesson 4 • LO To know the lifecycle of amphibians • **Life cycle, egg, sperm, reproduce, metamorphosis** • Know that in amphibians (e.g. frogs) a fertilized egg develops into an embryo and then hatches into a tadpole; the tadpole develops adult characteristics, metamorphoses into the adult form after which it can reproduce and the cycle can begin again	Through observation, children see life cycles in action, for example flowering plants and vegetables in the school environment. Using different parts of plants, (tubers, bulbs, root cuttings, seeds and stems), they observe what happens when different parts are planted and how they grow. Children may ask and answer questions about lifecycles of different animals, plants and insects. Using knowledge of one type of life cycle they ask and answer other questions and suggest ways to gather evidence to answer them. They use research to learn about other life cycles of animals that live in other habitats- for example, rainforest, ocean, prehistoric and desert areas. Using evidence from scientists, they are able to explain the work of naturalists like Jane Goodall and her work with chimpanzees.

- Lesson 5
- LO To know the lifecycle of insects.
- **Metamorphosis, chrysalis**
- Know that in many insects (e.g. butterflies) a fertilized egg develops into wingless feeding form called a larva (caterpillar); the larva feeds then later becomes a pupa (chrysalis) with a protective cocoon; inside this cocoon, the pupa metamorphoses into the adult butterfly after which it can reproduce and the cycle can begin again

- Lesson 6
- LO To know the lifecycle of birds
- **Life cycle, egg, live young, reproduce,**

  6. Appreciate the importance of trees to all life on Earth.
- Know that in birds (e.g. robins) a fertilized egg hatches in a nest (a hatchling) and is fed by its parents until it is ready to fly (i.e. becomes a fledgling); it then leaves the nest and grows into an adult after which it can reproduce and the cycle can begin again
- Lesson 7

- LO TO know that Jane Goodall is an anthropologist.

- **Anthropologist, conservation**

- Know that Jane Goodall is an anthropologist, most famous for her study of chimpanzees, of which she is considered the world's foremost expert. Know that Goodall discovered that chimpanzees are much more intelligent than they had ever been thought to be. Know that Goodall is also a conservationist and environmentalist, which means she does important work to help protect the planet, in particular animal habitats

Concepts			
Biology	**Chemistry**	**Physics**	

SKILLS				
1. Compare	2. Explore	3. Identify	4. describe	5. classify
6. Question	7. observe	8. test	9. record	10. research

ASSESSMENT

KNOW MORE, REMEMBER MORE, DO MORE...

In this unit of learning, progress has been made when a learner knows more. This 'distance travelled' from the starting point is evidenced through them remembering more and doing more: in books, low stakes quizzes, retrieval, use of mind maps, answering the big question and being able to feel more confident about this unit.