

Year 5 Biological Science: Living things and habitats (Plant and Animal Life Cycles)

Unit 5

Scientific Model (KS2):
Big Picture Model

- Focuses on ensuring children see the bigger picture in order to understand why something happens. They need to see the purpose of a system to understand the importance of the parts of that system.
- Ensure children understand the purpose of a life cycle and why many organisms need to change or develop in order to facilitate it before you get teach the detail of any specific life cycle.
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Scientific Investigations:

- Looking for Naturally- Occurring Patterns and Relationships
- Identifying and Classifying Things
- Researching Using Secondary Sources
- Comparative and Fair Testing

Scientists:

- David Attenborough - wildlife filmmaker and naturalist who has written and presented many popular documentaries about animals and their behaviour. He has been on TV for over 60 years and is recognised all over the world.

Scientific Skills Taught:

ASK

- To ask different kinds of questions
- To identify appropriate secondary sources to research ideas and ask questions
- To make predictions based on evidence

BREAKDOWN

- To recognise and control variables in tests
- To plan different enquiries to answer questions
- To recognise when to use comparative and fair tests
- To plan when to take repeat readings

CAPTURE

- To choose and use a range of equipment precisely
- To decide how to record data
- To create classification keys
- To decide what observations and measurements to make

DESCRIBE

- To use varied ways to present data
- To identify and comment, using appropriate language, on patterns they notice
- To use relevant scientific language and illustrations in reports and when drawing conclusions

Prior Learning:

- Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)
- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)

Curriculum	Learning Intention	Knowledge and Key Vocabulary
<p><u>Making links to learning and discuss the model (if needed)</u></p> <p>Ensure children understand the purpose of a life cycle and why many organisms need to change or develop in order to facilitate it before you get teach the detail of any specific life cycle.</p>	<p>What is a life cycle?</p> <ul style="list-style-type: none"> • Discuss prior knowledge about life cycles • Explain the purpose of a life cycle 	<p><u>Knowledge:</u></p> <ul style="list-style-type: none"> • Know animals, including humans have offspring which grow into adults. • Explain pollen is carried from plant to plant by insects or the wind. • Explain how seeds are scattered by animals or the wind and some of them grow to form new plants <p><u>Vocabulary:</u></p> <ul style="list-style-type: none"> - Life cycle, offspring, flowering plants, pollination, seed formation, seed dispersal.

<p>Knowledge and skills through investigations</p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> - 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. <p>Notes and guidance (non-statutory):</p> <ul style="list-style-type: none"> - Pupils should study and raise questions about their local environment throughout the year. - They should observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. - They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. - Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals. <p>Pupils might work scientifically by:</p> <ul style="list-style-type: none"> - observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. - They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. - They might observe changes in an animal over a period of time (for example, by 	<p>Do all animals follow the same life cycle?</p> <ul style="list-style-type: none"> • Order lifecycles of animals • Compare animal lifecycles • Describe the link between life cycles and food needs / habitats. <p>Do all mammals have the same life cycle?</p> <ul style="list-style-type: none"> • Compare the growth rate between humans and dogs • Compare the age at which they are fully grown, average life span etc. <p>How can a plant reproduce?</p> <ul style="list-style-type: none"> • Dissect and annotate a flower • Draw a life cycle diagram. • Explore and compare pollination types <p>What affects reproduction in plants?</p> <ul style="list-style-type: none"> • Investigate: How do seeds stick to animals for dispersal? • Complete a fair test: How does the weight/propeller size effect Sycamore seed dispersal? 	<p>Knowledge:</p> <ul style="list-style-type: none"> • Know mammals develop inside their mothers • Know the human gestation period is 9 months • Know amphibians lay eggs • Explain that butterflies and frogs go through metamorphosis to become an adult <ul style="list-style-type: none"> • Name at least 3 parts of a flowering plant. • Distinguish between male and female sex parts of a flowering plant and name • Explain pollination • Explain that sexual reproduction will produce offspring that is similar but not identical to the parent • Know that asexual reproduction produces identical offspring <p>Vocabulary:</p> <ul style="list-style-type: none"> - reproduce; grow; reproduction; life cycle; mammal; amphibian; insect; bird; fish; reptile; male; female; metamorphosis; germination; fertilisation; pollination; genetic information; gene; genetic information; fruit; seed; embryo; stigma; anther; style; ovary; ovule; carpel; nucleus; pollen; pollen grain; pollen tube; sperm; sexual reproduction; asexual reproduction; egg; birth; growth; adulthood; male; female; off-spring; pupa; chrysalis; pupa; imago; adult; seeds; bulb; tuber; stem; root cutting;

hatching and rearing chicks), comparing how different animals reproduce and grow.

Application and Assessment Activity

Name: _____ Date: _____
Science Assessment Year 5: Living Things and Their Habitats

Reproduction

1. There are two types of reproduction. Fill in this table to complete what you know about them:

	Sexual Reproduction	Asexual Reproduction
How many parents?		
Where do features of the offspring's appearance come from?		
An advantage		
A disadvantage		

Plant Reproduction

2. Complete the blanks in this sentence about plant reproduction:

Female plants cells are found in and male cells are found in

3. Name a way that an asexual plant reproduces.

Thinking Deeper:

How might environmental issues have an impact on plant and animal life cycles?

Links to other subjects:

Subject Specific links – Maths – weight, length, comparing growth rates

Personal Development – working collaboratively with others

SMSC – respect for living things around us

Cultural Capital – widening general knowledge about a variety of living things and the different countries some originate from

Careers – famous naturalists and zoology

British Values – mutual respect for all living things, understanding that legally in England the age to be classified as an adult

Equality – diversity of living things, equality of humans/same life cycle despite any different cultural backgrounds.

