Term 4
Unit Overview: UKS2 Science
Living Things and their Habitats

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National Curriculum Objectives
❖ 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.

Working Scientifically Skills Focus:
❖ Report and present findings from enquiries, including conclusions and causal relationships, in oral and written forms such as displays and other presentations, using appropriate scientific language.

❖ Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

TAPS Assessment(s)
Outdoor Keys
Life Cycle Research

Possible misconceptions
Some children may think:
❖ all plants start out as seeds
❖ all plants have flowers
❖ plants that grow from bulbs do not have seeds
❖ only birds lay eggs
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Substantive knowledge
❖ Know that as part of their life cycle, plants and animals reproduce. Most animals reproduce sexually.
❖ Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be born live, such as babies or kittens, and then grow into adults.
❖ Know that in other animals, such as chickens or snakes, there may be eggs laid that hatch to young which then grow to adults. Some young undergo a further change before becoming adults e.g. caterpillars to butterflies. This is called a metamorphosis.
❖ Know that Plants reproduce both sexually and asexually. Bulbs, tubers, runners and plantlets are examples of asexual plant reproduction which involves only one parent.
❖ Gardeners may force plants to reproduce asexually by taking cuttings.
❖ Sexual reproduction occurs through pollination, usually involving wind or insects.

Disciplinary knowledge
❖ Draw the life cycle of a range of animals
❖ Identify similarities and differences between life cycles
❖ Explain the difference between sexual and asexual reproduction and give examples of how plants reproduce in both ways.
❖ Identify patterns in life cycles.
❖ Present their understanding of the life cycle of a range of animals in different ways e.g. drama, pictorially, chronological reports, creating a game.
❖ Grow and observe plants that reproduce asexually, taking cuttings to propagate.
❖ Use secondary sources to find out about pollination.
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Vocabulary
Life cycle, reproduce, sexual, sperm, egg, live young, asexual, plantlets, runners, bulbs, cuttings, pupate

Phonics / polysyllabic words
metamorphosis
horticulturist
ecologist
classification
fertilise / fertilisation
propagate / propagation

Reading support
❖ Word mats
❖ Scaffolded recording / choice of recording
❖ Pre teaching of vocab

Extension deeper thinking
❖ Do all insects metamorphose/pupate?
❖ Research unusual animals' life cycles, for example, adactylidium mite, seahorse, kangaroo.
❖ Explorify: Odd One Out
❖ Positive / Minus / Interesting statement debate.
❖ The Big Question: Where did the mass of the tree come from?

Making Connections
Spider plant reproduction in Eco work.
DT: Food preparation of vegetables (tubers, bulbs)
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Prior learning

• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)
• Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)
• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)
• Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)
• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 – Animals, including humans)
• Observe changes across the four seasons. (Y1 - Seasonal change)
• Notice that animals, including humans,

British Values

- Democracy Take the views and opinions of others into account. Take turns and instructions from others.
- The rule of law Understand the importance of safety rules when working scientifically make choices when planning an investigation as others may have.
  rent points of view as to where to start.
- Tolerance Scientific discoveries have come from other cultures and religious beliefs often compete with scientific understanding.
- Mutual respect Work as a team, discuss findings and offer support and advice to others.

Future learning (KS3)

•Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta.
• Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.
• Differences between species.

Key People

Maria Sibylla Merian
Jemma Dias: A Scientist Just Like Me

Christian Values

- Spirituality: Living in awe and wonder, asking questions, being inspired by the world and being aware of something 'bigger' outside of ourselves.
- Belonging: In Science lessons, we explore and celebrate research and developments that take place in many different cultures, both past and present. We explore how scientific discoveries have shaped the beliefs, cultures and politics of the modern world.
- Empowering: We ask our own questions to support our own understanding of the world and understand that sharing ideas, data, and results (for further testing and development by others) is a key principle of the scientific method.

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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) • Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans) Future learning (UKS2 Year B) Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (Y6 - Evolution and inheritance) • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 - Evolution and inheritance)		