Year 5 – Living Things & Their Habitats



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| National Curriculum Outcomes: Knowledge   * 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 | National Curriculum Outcomes: Working Scientifically   * Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. * Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. * Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. * Using test results to make predictions and to set up further comparative and fair tests * Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. * Identifying scientific evidence that has been used to support or refute ideas or arguments. | |
| Children might work scientifically by:  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 hatching and rearing chicks), comparing how different animals reproduce and grow. (*taken from the National Curriculum*) |
| Links to prior learning  **Year 1:** identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).  **Year 2:** observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Notice that animals, including humans, have offspring which grow into adults  **Year 3:** identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal  **Year 4:** recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. | | Links to future learning  **Year 6:** recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. |

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| Key Vocabulary  Mammal, amphibian, insect, bird, egg, gestation, larva, pupa, metamorphosis, phenologist (a scientist who studies life cycles), sexual reproduction, asexual reproduction, carpal, stamen, fertilisation, seed | | Common Misconceptions   * Children may think all plants start out as seeds * Children may think that all plants have flowers, or it is not a plant if is does not have flowers * Children often think that only birds lay eggs * Children usually think that caterpillars are the only creatures that go into pupas * Children often assume all ‘minibeasts’ are insects rather than them being a specific category of animals with distinct features | |
| Important knowledge/facts that the children need to know   * Mammals give birth to live babies and feed them with milk. * Amphibians are born from soft eggs laid in or near to water, and usually begin life in water before moving to the land as an adult. * Insects hatch from eggs (larval stage) and then form pupas before metamorphosing. * Birds hatch from hard eggs. * To reproduce, most animals need a male and female. Together they can create offspring, or babies. * Plants are able to reproduce in two different ways - sexual reproduction and asexual reproduction. * Sexual reproduction involves pollen from one flower fertilising another to produce a seed. * Only one parent is needed in asexual reproduction and the offspring are exact copies eg tubers and bulbs * David Attenborough and Jane Goodall are naturalists and study animals (these are the scientists suggested in the non-statutory section of the National Curriculum, others can be studied if preferred). | | | |
| Important scientists  **Sylvia Earle** – American marine biologist  **Dr. Paula Kahumbu** – Kenyan wildlife conservationist  **Mangala Mani** – Scientist who has worked extensively in Antarctica | STEM Career Links  **Botanist** (studies plants)  **Entymologist** (studies insects)  **Farmer** (grows crops and raises animals for food)  **Herpetologist** (studies amphibians and reptiles)  **Icthyologist** (studies fish)  **Mammalogist** (studies mammals)  **Ornithologist** (studies birds)  **Phenologist** (studies life cycles)  **Zoologist** (studies animals) | | Links to real life   * What plants and animals can we find in our local area? * What is your favourite animal? How is its life cycle similar to/different from yours? * How do our favourite fruit and vegetable plants reproduce? * What would happen if bees became extinct? |

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| Suggested Enquiry Activities | | | | | | | |
| Identifying and Classifying | Comparative and Fair Testing | | Observation over Time   * What happens if we plant bulbs upside down? * How do new plants grow from cuttings? * How long do caterpillars stay in their pupas? | | Pattern Seeking   * Do larger mammals have longer gestation periods? * Do larger animals live longer? | | Research using Secondary Sources   * Do only caterpillars go through the larva & pupa stages? * How do plants produce seeds? |
| Outdoor Learning | | | | | | | |
| |  | | --- | | * Describe the life process of reproduction in some plants and animals. | | | | | * Pupils take cuttings from plants in the playground to grow. | | | |
| Wow Factor Experiences   * Borrow a Linnean Society Discovery Kit (free, see weblink below) and explore the activities * Grow a range of plants in different ways, for example using cuttings – this is especially effective if children grow food that they can then prepare and eat * Carry out the STEMterprise cross-curricular enterprise topic (free, see weblinks below) * Engage in the Farmertime scheme (free) to allow children to live chat with a farmer online to learn about growing crops and raising animals | | | | | | | |
| Maths Links   * Take precise measurements of plants as they grow * Create scatter graphs showing animals’ gestation periods or life span compared to their size | | Literacy Links   * Create a piece of drama explaining how flowers are pollinated, with children taking on the roles of pollinators and different parts of flowers * Write a non-chronological report about an animal’s life cycle for a specific audience, for example a Year 2 child learning about life cycles or a parent | | | | Broader Curriculum Links  **Geography:** What sort of animals and plants live in the area we are currently learning about? How is this different to our local area? (particularly useful link if studying the rainforest topic)  **Design Technology:** Carry out the cross-curricular STEMterprise challenge (see weblinks below) | |
| Story Links  Tadpole’s Promise – Jeanne Willis & Tony Ross  Cicada – Shaun Tan | | | | | | | |
| Helpful Weblinks  Linnean Society Discovery Box Loan (free) – <https://www.linnean.org/learning/content/discovery-kits/life-cycles-kit>  STEMterprise cross-curricular enterprise challenge (free) – <https://education.nfuonline.com/stemterprise>  Farmertime scheme (free) – <https://leafuk.org/farmertime/home>  Assessment exemplification (could also be useful with planning ideas) – <https://www.planassessment.com/product-page/examples-of-work-living-things-and-their-habitats-y5-shannon>  Teacher CPD on this unit (free) – <https://www.reachoutcpd.com/courses/upper-primary/life-cycles/>  BBC Class Clips (useful videos) – <https://www.bbc.co.uk/teach/class-clips-video/science-ks2--ks3-the-life-cycles-of-different-organisms/zvh8qp3>  STEM Learning collection of resources for planning and teaching forces – <https://www.stem.org.uk/resources/community/collection/12775/year-5-living-things-and-their-habitats> | | | | | | | |