

Ashtree Primary School and Nursery Medium Term Plan for Science

Year 4 Summer Term – Living Things and their Habitats Unit

Prior Knowledge – Y3

Step 1 – To know water travels through the roots up the stem. To know the stem supports a plant and transports nutrients to the plant. - link to George Washington Carver (see Curriculum Enhancements)

(Travel, Transport, Minerals, Nutrients, Absorb)

Step 2 – To know that healthy leaves are linked to nutrition.

To know that healthy leaves are linked to healthy plant growth (Travel, Transport, Minerals, Nutrients, Absorb)

Step 3 - To know why plants need flowers.

Step 4 – To understand that plants reproduce. To know the parts of a flower – petals, stamen, stigma, ovary,

Step 5 - To identify the different stages of pollination – Pollen left on stigma by insect - Pollen travels down style to ovary - Pollen joins ovule (fertilisation) - Fertilised ovule becomes a seed. To know how the parts of a flower are a part of pollination.

Step 6 - To know what seed dispersal is. – wind, water, animal, and it's importance for reproduction.

Prior Skills – Y3

sets up simple practical enquiries, comparative and fair tests with support

asks relevant questions and uses, with support, different types of scientific enquiries to answer them with support, records and presents findings using drawings, labelled diagrams, keys, tally charts, Carroll diagrams, Venn diagrams, bar charts and tables

with support, identifies differences, similarities or changes related to simple scientific ideas and processes

Key Vocabulary Predator, prey, producer, river, ocean, desert, arctic, rainforest, mountain, farmland, wood, dry, wet, vegetation, shelter, vertebrate, invertebrate, classify, characteristic, flowering plant, non- flowering plant (fern, moss)

Key Knowledge

Step 1 - To recognise that living things can be grouped in a variety of ways – vertebrates, invertebrates, mammals, reptiles, fish, birds, insects, amphibians

Step 2 - describe some of the characteristics of the vertebrate (fish, mammals, amphibians, reptiles and birds) groups (e.g. warm-blooded, have fur, lay eggs) - characteristic

Step 3 – (PK 5/6) Explore and use classification keys to help group, identify and name a variety of living things (including animals and plants) in their local and wider environment - flowering plant, non-flowering plant (fern, moss) river, ocean, desert, arctic, rainforest, mountain, farmland, wood, dry, wet, vegetation, shelter,

Step 4 - Identify that some animals feed on other animals and some on plants

Step 5 - recognise that a food chain must always start with a green plant (a producer), recognise that green plants are the ultimate source of food for all animals, use and understand the terms: producer, predator and prey, construct and interpret a variety of food chains, identifying producers, predators, and prey

Step 6 - explain that different organisms are found in different habitats because of differences in environmental factors

Step 7 - describe how humans can cause changes to environments – pollution, deforestation, air quality, building (roads, houses) - river, ocean, desert, arctic, rainforest, mountain, farmland, wood, dry, wet, vegetation, shelter,

Step 8 - recognise that environments can change and that this can sometimes pose dangers to living things.

Key Skills

Step 1 - uses observable and other criteria to group, sort and classify in different ways

(including simple keys and branching databases)

Step 2 - asks relevant questions and uses different types of scientific enquiries to answer them

Step 3 - uses observable and other criteria to group, sort and classify in different ways

(including simple keys and branching databases)

Step 4 - uses straightforward scientific evidence to answer questions or to support their findings

Step 5 - records and presents findings using drawings, labelled diagrams, keys, tally charts, Carroll diagrams, Venn diagrams, bar charts and tables

Step 6 - uses relevant scientific language to discuss their ideas and communicate their findings

Step 7 - recognises when and how secondary sources (e.g. books, internet, experts, diagrams) might help answer questions that cannot be answered through practical investigations, looks for changes, patterns, and relationships in their data

Step 8 - gathers and records data in a variety of ways to help in answering questions, prepares own format for recording data

Curriculum Enhancements

Look for different habitats in the school grounds e.g. wild area, school field, hedges etc. Compare the habitats and the living things found there.

Suggested Activities

S1 - group animals into vertebrate (fish, mammals, amphibians, reptiles and birds) and invertebrates groups (snails, slugs, spiders, worms and insects)

S1 - explain why some animals are hard to classify (e.g. platypus, echidna, bat, flightless birds)

S2 - recognise that animals can be grouped into vertebrates and invertebrates

S3 - explore ways of grouping living things including animals and plants (flowering and non-flowering)

S4 - identify that some animals feed on other animals and some on plants

(Teacher Note: statement moved from NC 'Animals including humans' to improve progression within topics)

S5 - use food chains to predict what might happen to the numbers of an organism if there are suddenly more predators or less prey

S6 - know the function of some of the more complex features which aid survival in specific habitats (e.g. gills, blubber, camouflage)

S6 - describe why different animals and plants live in different habitats

S6 - explain why it is necessary to use a reasonably large sample when investigating the preferences of small invertebrates

S7 - describe how humans have negatively impacted environments (e.g. pollution, deforestation, introduction of invasive species)

Curriculum links

Geography – local environment

PSHE – Looking after the environment

Possible Misconceptions

an animal's habitat is like its 'home'

plants and seeds are not alive as they cannot be seen to move

fire is living

arrows in a food chain mean 'eats'.

This will lead to . . .

In Year 5 – Living Things and their Habitats, the children will learn,

Step 1 - sequence the life cycles of a variety of plants and animals - **Live young, hatch, tadpole, caterpillar, butterfly, ladybird, pupae, larvae, chrysalis**

Step 2 - recognise the similarities in the life cycles of plants, animals and humans - **Live young, hatch, tadpole, caterpillar, butterfly, ladybird, pupae, larvae, chrysalis**

Step 3 - name the parts of a flower, describe the functions of some parts of a flower, describe the main functions of parts of a plant involved in reproduction - **pollen, stamen, stigma, pollination**

Step 4 - describe the processes of **sexual** and **asexual reproduction** in plants

Step 5 - compare methods of **seed dispersal**

Step 6 - name the parts of the human reproductive system, describe the simple functions of parts of the human reproductive system, know that most animals reproduce by sexual reproduction