

Science Curriculum – Year 2

Working scientifically (Skills objectives across all units):

- I can ask simple questions about the world around me.
- I can observe closely, using simple equipment.
- I can perform simple tests.
- I can identify and classify.
- I can use my observations and ideas to suggest answers to questions
- I can gather and record data to help in answering questions

Plants

Learning Objectives

- I can observe and describe how seeds and bulbs grow into mature plants
- I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Challenge:

- I can investigate the way in which water is transported within plants
- I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Investigation ideas

- How long does it take for a sunflower to reach full size? Which sunflower will be the tallest?
- Plant and observe garlic bulbs growing.
- What happens to a bean when it germinates? Do all beans do the same thing?
- How does temperature affect how quickly a plant grows?
- How does light level affect how quickly a plant grows?
- What is the best amount of water to give a plant?

Resources you may need:

- www.saps.org.uk/primary
- www.bbc.co.uk/schools/scienceclips/ages/5_6/growing_plants.shtml
- www.opalexplornature.org/education-packs-trees-plants
- www.edinatrust.org.uk/GardeningResources.html
- Planting area
- Seeds
- Gardening Tools
- Compost
- Tape measures
- Bulbs
- Reference Books
- Clipboards
- Magnifying glasses
- Cress Seeds
- Petri dishes
- Plastic cups
- Variety of plant samples and leaves for sorting (set up a nature table)

Animals including humans

Learning Objectives

- I can notice that animals, including humans, have offspring which grow into adults
- I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

Challenge:

- I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
- I can identify how animals and plants are suited to and adapt to their environment in different ways.

Investigation ideas

- How does exercise affect your heart rate? Data logger investigation.
- How does height change with age? Children collect data from every class and then compare.
- What are our bodies made up of? Investigating the skeleton and organs in the body.
- Making observations of microbes through a microscope.
- What is the best way to wash your hands? Children investigate different techniques to wash paint off their hands.
- How does exercise affect how many breaths you make every minute?

Resources you may need:

- <http://kids.nationalgeographic.co.uk/kids/animals/>
- <http://www.kidsbiology.com/animals-for-children.php>
- <http://www.bbc.co.uk/newsround/animals/>
- <http://www.bbc.co.uk/nature/wildlife>
- Measuring tapes
- Variety of different foods (unhealthy and healthy)

Living things and their habitats

Learning Objectives

- I can explore and compare the differences between things that are living, dead, and things that have never been alive
- I can identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- I can identify and name a variety of plants and animals in their habitats, including micro-habitats
- I can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Challenge:

- I can identify the life processes for all living things (MRS GREN).
- I can create food webs for a particular habitat.
- I know and can use the terms producer, prey and predator
- I can compare and contrast habitats.

Investigation ideas

- What does a plant need to stay healthy and grow? (Dark, Light, Water, Dry)
- How can we group animals by their features? (Birds, Reptiles, Mammals, Fish and Amphibians)
- Which conditions do different minibeasts prefer? (Woodlice Investigation - make a choice chamber)
- Comparing Habitats (Rainforest/local woodland/Pond/Desert/Arctic/Rock pools)
- How are different animals/plants suited to their habitats? Labelling features and explaining.

Resources you may need:

Set of KS1 lesson plans for habitats

<http://www.rspca.org.uk/education/teachers/lessonplans/ks1>

Enviro Spotter game

http://www.bbc.co.uk/bitesize/ks1/science/plants_and_animals/play/

Where do I live?

<http://www.bbc.co.uk/schools/dynamo/lab/wheredo/index.shtml>

Growing Plants?

http://www.bbc.co.uk/schools/scienceclips/ages/5_6/growing_plants.shtml

Plants and Animals in our local environment

http://www.bbc.co.uk/schools/scienceclips/ages/6_7/plants_animals_env.shtml

- equipment to make micro-habitat
- clipboards
- reference books for identifying
- magnifying glasses
- specimen jars
- seeds
- petri dishes/plastic cups
- nets for pond dipping,

Everyday materials

Learning Objectives

- I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Challenge:

- I can explain how some materials are good at letting heat through and some stop heat coming through - Insulators and conductors.

Investigation ideas

- What sort of materials are in our classroom? Children make observations; try to group the materials they find.
- What sort of materials are in our community? Children make observations of buildings, roads and pavements; try to group the materials they find.
- Which materials can I squash/bend? Which are the squashest/most flexible?
- Which materials can I stretch? Which are most stretchy? Measuring length with weights hanging from them - different types of plastic bags, stretchy animals. (Which superhero has the stretchiest tights?)
- Which material bends the most? Comparing plastic and wooden rulers with weights hanging from them.
- Which shape structure is the strongest? (Art Straws tower - context earthquake proof)
- Making walls out of a choice of materials - wooden blocks/paper/cardboard/plastic - which is the strongest?

Resources you may need:

- <http://bpes.bp.com/primary-resources/science/ages-4-to-7/materials/introducing-materials/>
- Variety of materials - wood, brick, metal, glass (risk assessment), foam, plastics, foil, papers, card, sponge
- Weights
- Clamp Stands
- Metre Rulers
- Art Straws and tape
- Clipboards