

Science curriculum enrichment

Sessions Overview

Through a series of curriculum enrichment focused workshops, this course is designed to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them.

Pupils will be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things.

The workshops will be taught using the following practical scientific methods, processes and skills:

- Identifying and classifying
- Using their observations and ideas to suggest answers to questions
- Gathering and recording data to help in answering questions

Breakdown of sessions for the physics workshops:

Session 1: Plants

Learning opportunities include:

- Identifying and name a variety of common wild and garden plants, including deciduous and evergreen trees
- Identity and describe the basic structure of a variety of common flowering plants, including trees

Session 2: Animals, including humans

Learning opportunities include:

- Identifying and name a variety of common animals, including: fish, amphibians, reptiles, birds and mammals
- Identifying and name a variety of common animals that are carnivores, herbivores and omnivores
- Describing and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

Session 3: Everyday materials

Learning opportunities include:

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

Session 4: Rocks

Learning opportunities include:

- Comparing and group together different kinds of rocks on the basis of their appearance and simple physical properties
- Describe in simple terms how fossils are formed when things that have lived are trapped within rock
- Recognise that soils are made from rocks and organics matter

Session 5: Light

Learning opportunities include:

- Reflections
- The sun and protecting our eyes
- Shadows are formed when the light from a light source is blocked by an opaque object
- Finding patterns in the way that the size of shadows change

Session 6: Forces and Magnets

Learning opportunities include:

- Compare how things move on different surfaces
- Forces need contact between two objects, but magnetic forces can act at a distance
- Observe how magnets attract or repel each other
- Predict whether two magnets will attract or repel each other

Session 7: Living things and their habitats

Learning opportunities include:

- Recognising that living things can be grouped in a variety of ways
- Exploring and using classification keys to help group, identify and name a variety of living things
- Recognising that environments can change

Session 8: States of matter

Learning opportunities include:

- Compare and group materials together, according to whether they are solids, liquids or gases
- Observe that some materials change state when they are heated or cooled
- Identify the part played by evaporation and condensation in the water cycle

Session 9: Sound

Learning opportunities include:

- Identify how sounds are made, associated some of them with something vibrating
- Recognise that vibrations from sounds travel through a medium to the ear
- Find patterns between the pitch of a sound and features of the object that produced it

Session 10: Electricity

Learning opportunities include:

- Identify common appliances that run on electricity
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
- Whether a lamp will or not light in a series circuit, based on whether or not the lamp is part of a complete loop with a battery
- Switches that opens and closes a circuit

Session 11: Properties and changes of materials

Learning opportunities include:

- Comparing and group together everyday materials on the basis of their properties, including: their hardness, solubility, transparency, conductivity and response to magnets
- Some materials will dissolve in liquid to form a solution
- Particular uses of everyday materials, including metals, wood and plastic
- Dissolving, mixing and changes of state

Session 12: Earth and space

Learning opportunities include:

- Describe the movement of the earth, and other planets, relative to the sun in the solar system
- Describe the movement of the moon relative to the earth
- Describe the Sun, Earth and Moon as approximately spherical bodies

Session 13: Evaluation and inheritance

Learning opportunities include:

- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago
- Offspring
- Animals and plants are adapted to suit their environment in different ways