

Ashtree Primary School and Nursery Medium Term Plan for Science

Year 3 Summer Term - Light Unit

Prior Knowledge – Y1

Ongoing learning throughout the year

- observe changes across the four seasons (Autumn, Spring, Summer, Winter)
- observe and describe weather associated with the seasons and how day length varies. (rain, hail, snow, ice, frost, sun, showers, wind)

Step 1 - name the four seasons – Spring, Summer, Autumn, Winter

Step 2 - recall simple changes associated with each season – e.g. flowers growing, baby animals = Spring, leaves turning brown, animals hibernating = Autumn.

Step 3 - observe and name types of weather (e.g. rain, sun, wind, clouds)

Prior Skills – Y2 - observes closely (including changes over time), using equipment, can ask questions and recognises that they can be answered in different ways, with some guidance, identifies things to measure or observe that are relevant to the question, uses simple observable features to compare up to 3 objects, materials, or living things, talks with more confidence about what they have found out and how they found it out

Key Vocabulary Shadow, light, flames, opaque, block, direction, light, travels, shortest, longest, highest, torch, shape, similar, transparent, translucent, light source, sun, object daytime, night-time, reflect, shine, shiny, absorb, reflective surface, surface, mirror, sundial, block, lamp

Key Knowledge

Step 1 - name a number of light sources, including the sun, describe and compare some light sources, recognise that light travels from a source - light, travels, light source, torch, lamp

Step 2 - state that light sources are seen when light from them enters the eyes, recognise that they cannot see in the dark, explain that places are dark because there is no light and a light source is needed to help us see in such places - light, travels, light source, torch, lamp, daytime, night-time

Step 3 - state that reflections can be seen in shiny surfaces, demonstrate light travelling using a torch and record light bouncing off a mirror

Step 4 - explain that they cannot see shiny objects in the dark because there are no light sources

Step 5 - recognise that when light is blocked, a shadow is formed, recognise that shadows are similar in shape to the objects forming them, explain that shadows are formed when light from a source is blocked

Step 6 - make observations of changes in shadows, state that even transparent objects block some light and form shadows, describe the difference in shadows cast by opaque, translucent and transparent materials, explore how to make shadows of different shapes and sizes – longest, shortest, highest

Key Skills

Step 1 - with support, records and presents findings using drawings, labelled diagrams, keys, tally charts, Carroll diagrams, Venn diagrams, bar charts and tables

Step 2 - 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

Step 3 - beginning to make systematic and careful observation

Step 4 - reports on findings from enquiries, in simple scientific language, using oral and written explanations.

Step 5 - Using model frames for support, gathers and records data in a variety of ways to help in answering questions

Step 6 - beginning to make systematic and careful observation, begins to make decisions about what observations to make and how long to make them for, with help, looks for changes, patterns, and relationships in their data

Curriculum Enhancements

Look at the work of Percy Shaw
Create your own shadow puppets for a puppet show.



Suggested Activities

Step 2 - describe how nocturnal animals are adapted to use what little light there is or their other senses in the dark (e.g. cats, aye-aye, lemurs)

Step 3 - describe how Percy Shaw invented cat's eyes and explain their importance to road safety, identify suitable reflective clothing for travelling in the dark

Step 5 - use ideas about shadows to make predictions about the shadows formed by different objects or materials

Step 6 - describe how the length of a shadow changes throughout the day as the sun moves across the sky, Explore shadows which are connected to and disconnected from the object e.g. shadows of clouds and children in the playground.

Curriculum links

Art – silhouettes

PSHE – sun safety

Science - Electricity

Possible Misconceptions

we can still see even where there is an absence of any light

our eyes 'get used to' the dark

the moon and reflective surfaces are light sources

a transparent object is a light source

shadows contain details of the object, such as facial features on their own shadow

shadows result from objects giving off darkness

This will lead to . . .

In Year 5 – Earth and Space, the children will learn to,

- **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**
- **use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.**