

Science  
2010-2011

**Course Description:**

1. Healthy Living

This unit helps children to learn that there are many aspects to keeping healthy. Children learn about the heart and how heart beat is affected by exercise and then relate this to what they already know about movement and exercise.

Experimental and investigative work focuses on:

- repeating measurements
- representing data in bar charts and graphs, and interpreting these
- using results to draw conclusions

2. Gases around us

Through this unit children learn that gases are material and can be distinguished from solids and liquids by their properties.

They also learn about the uses of some important gases and where gases are found.

Experimental and investigative work focuses on:

- making and repeating observations
- relating observations and conclusions to scientific knowledge and understanding

Work in this unit also offers opportunities for children to use scientific knowledge and understanding to explain everyday phenomena related to air and other gases.

3. Earth, Sun and Moon

In this unit children learn about the shapes and relative sizes of the Earth, Sun and Moon. Using models they learn how the three bodies move relative to each other and how these movements relate to night and day.

Experimental and investigative work in this unit focuses on:

- making observations and recognising patterns in first hand and secondary data
- representing data in graphs

4. Life Cycles

Through this unit children learn that plants and animals reproduce as part of their life cycle and that in every life cycle there are distinct processes and stages. They should begin to understand how reproduction is important to the survival of the species.

Experimental and investigative work focuses on:

- making observations and comparisons
- drawing conclusions

5. Changing State

Through this unit children consolidate their ideas about changes of state which can be reversed. They use their understanding to explain a range of familiar phenomena.

Experimental and investigative work focuses on:

- making observations and measurements and presenting these
- identifying patterns in results
- suggesting explanations for observations and conclusions in terms of scientific knowledge and understanding.

## Content

1. Identify the components of a healthy and varied diet and describe how an idea about the effect of diet on health was tested
  - recognise some harmful effects of drugs;
  - recognise that during exercise the heart beats faster to take blood more rapidly to the muscles;
  - make careful measurements of pulse rate, represent these in suitable graphs and explain what the graphs show
2. Recognise that air is a material and that it is one of a range of gases which have important uses,
  - that liquids evaporate to form gases and that gases change shape and flow from place to place;
  - measure volumes of liquids accurately, recognise when observations and measurements need to be repeated and provide explanations for what they observe in terms of knowledge and understanding about gases
3. Recognise that the Earth, Sun and Moon are spherical and support this with some evidence;
  - explain in terms of the rotation of the Earth why shadows change and the Sun appears to move across the sky during the course of the day
  - recognise that it is daylight in the part of the Earth facing the Sun,
  - that the Moon orbits the Earth and identify patterns in secondary data about sunrise and sunset
4. Name and explain the functions of some parts of a flower;
  - describe the processes of pollination, fertilisation, seed dispersal and germination;
  - explain how to carry out a fair test to find the conditions necessary for germination;
  - explain that living things need to reproduce if the species is to survive
  - recognise stages in the growth and development of humans
5. Name and describe examples of the main processes associated with water changing state and recognise that these processes can be reversed;
  - explain the water cycle in terms of these processes;
  - use patterns in data to make predictions