

The Dingle Primary School

Science Subject Summary

At The Dingle Primary School, we recognise the importance of Science in every aspect of daily life. As one of the core subjects taught in primary schools, we give the teaching and learning of Science the prominence it requires.

The Scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world, and with developing skills associated with Science as a process of enquiry. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

At The Dingle Primary School, in conjunction with the aims of the National curriculum, our Science teaching offers opportunities for children to:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them;
- be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- develop the essential scientific enquiry skills to deepen their scientific knowledge.
- use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including ICT, diagrams, graphs and charts.
- develop a respect for the materials and equipment they handle with regard to their own, and other children's safety.
- develop an enthusiasm and enjoyment of Scientific learning and discovery.

At The Dingle, Science begins in Reception when pupils learn about their body parts, senses, seasons, weather, where they start to observe changes, materials, where they begin to carry out investigations and understand about natural and man-made materials, they observe changes with animals and plants and through this look at lifecycles and planting vegetables. They begin to work scientifically and often use stories as a starting point to their learning.

Biology

In Years 1 and 2, pupils build on their prior learning, in year 1 they identify basic body parts and learn about the senses. They identify and name a variety of common animals that are carnivores, herbivores and omnivores and also identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. They learn about the importance of keeping our bodies healthy and are introduced to the basic needs of animals for survival.

Pupils develop scientific knowledge of the names of a variety of common wild and garden plants and an understanding of the different parts of plants by observing them closely. The children will investigate some local habitats within the school grounds identifying some plants and animals, they will learn that animals and plants are suited to their particular habitat. They will become familiar with a range of plants including evergreen and deciduous trees. They learn about the life cycles of plants and identify what plants need to keep them healthy.

In years 3 and 4, pupils build on their prior learning, identifying that humans and some animals have skeletons and muscles for support, protection and movement. They go on to learn about nutrition and basic parts of the digestive system.

Pupils will develop and extend their knowledge of plants by identifying and describing the functions of flowering plants, how plants grow and how water is transported, they go on to look at the life cycle of flowering plants, looking at pollination. Pupils are able to construct and interpret food chains, identifying producers, predators and prey. They can classify and identify a variety of different living things using classification keys.

In years 5 and 6, pupils build on their prior knowledge of the human body and are able to describe changes and recognise that living things have changed over time and that they produce offspring. They can also identify how animals adapt to suit their environment.

Physics / Seasons and Weather

Children in years 1 and 2, will further develop their scientific knowledge and conceptual understanding of the 4 seasons by learning about the different tools that can be used to record the weather. They will be introduced to the equipment used to take simple measurements and will be required to record data. They will learn to recognise different types of cloud and associate them with different weather. They will look at weather forecasts and discuss their importance.

In years 3 and 4, pupils will learn that they need light in order to see and notice that light is reflected from surfaces, they will be able to recognise how shadows are formed. Children will develop their knowledge about forces and identify how sounds are made; they will also learn about electricity and will be able to construct a simple series circuit.

Children in years 5 and 6 will build on their prior knowledge in forces, light and electricity, and develop their understanding of Earth and space by describing the movement of the earth and other planets and to understand the solar system. Pupils will learn that light travels in straight lines and that objects can be seen by light that is reflected to the eye. They will be able to explain how the force of gravity acts between the earth and falling objects and the effects of air and water resistance between moving surfaces. Years 5 and 6 pupils will build on their work from year 4 on electricity by adding more components to their simple circuits and to use recognised symbols when representing a circuit.

Chemistry / Materials

Pupils will build on their knowledge of materials by identifying and naming a variety of everyday materials including wood, plastic, glass, metal, water and rock. They will develop their understanding of the properties of different materials by performing simple tests and making observations. They will be introduced to the idea that some materials can change depending on what they are made from. They will make links to environmental issues whilst learning about recycling.

In Years 3 and 4, pupils go on to explore different rocks and soil, where they are able to compare and group rocks together based on their appearance, they are able to recognise that soils are made from organic matter and are able to describe in simple terms how fossils are formed. This area of science also links in with geography and their local environment. Pupils will also compare and group materials together, according to whether they

are solid, liquid or gas. From this they will use their knowledge of evaporation and condensation to learn about the water cycle.

Pupils in years 5 and 6 will build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4.

Working scientifically

During year 1 and 2 the children are encouraged to ask scientific questions and are given the opportunity to carry out simple tests. During science lessons they develop an understanding of how to use scientific equipment to make observations. They are given opportunities to identify and classify things. Children are encouraged to talk about what they have found out. In KS2 across all topics, children will be learning to work scientifically using and developing investigative skills, including observation, pattern-seeking, fair testing, classification and identification.

Science is a subject that links with other areas of the curriculum, for example, through stories and geography. Importantly, much of our pupils' learning is recapped, developed and consolidated within other subjects. We expect the knowledge that we teach and what the children learn will prepare them for their future learning at high school and be useful in their future lives when making sense of the world.

Jan 22

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