

Science LKS2

Throughout the year the children will cover a variety of aspects of the science curriculum to ensure all children:

- 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
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

SMSC

We promote spiritual development:

By demonstrating openness to the fact that some answers cannot be provided by Science.

By creating opportunities for pupils to ask questions about how living things rely on, and contribute to their environment and engaging in outdoor learning.

By discussing questions about the size of the universe and how it might have been formed.

By making links to the RE curriculum and allowing pupils the opportunity to question and offer reasoned thoughts and ideas.

By developing an understanding of life-cycles and food chains, and the roles that humans play in taking care of our planet

We promote moral development:

By offering pupils the chance to consider the wonder of the natural world and the inventions which have made the world a better place.

By considering that not all developments have been good because they have caused harm to the environment and to people.

By encouraging pupils to speculate about how science can be used both for good and evil.

By discussing concepts such as the creation of nuclear weapons and the use of drugs as medicine and for recreational purposes.

We promote social development:

By using opportunities during science lessons to explain how to keep other people safe and how they might protect a younger or vulnerable young person.

By exploring the social dimension of scientific advances e.g. environmental concerns, medical advances, energy processes.

By developing the children's understanding of social science through University seminars such as 'Brilliant Bodies', 'Human Biology', 'Sports Science', 'Silly Science'

By having pupils carry out the roles of Eco-Monitors.

By engaging in opportunities to join local educational establishments to be involved in science activities.

We promote cultural development:

By asking questions about the ways in which scientific discoveries from around the world have affected our lives. There is a rich heritage of scientific discoveries from Hindu, Egyptian and Muslim traditions.

By providing opportunities for pupil to engage in experiences such as University seminars (Genealogy), WOW Days and food linked to topics such as Chinese New Year.

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| Autumn 1 | <p>Rocks (Y3) Pupils should be taught to:</p> <ul style="list-style-type: none"> • compare 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 organic matter. |
| Autumn 2 | <p>Light Pupils should be taught to:</p> <ul style="list-style-type: none"> • recognise that they need light in order to see things and that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous and that there are ways to protect their eyes • recognise that shadows are formed when the light from a light source is blocked by an opaque object <p>find patterns in the way that the size of shadows change.</p> |
| Spring 1 | <p>Sound (Y4) Pupils should be taught to:</p> <ul style="list-style-type: none"> • identify how sounds are made, associating 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 • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases. |
| Spring 2 | <p>Animals, including Humans (Y3 + 4) inc food, teeth and digestion</p> <p>Pupils should be taught to:</p> <p>identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</p> <ul style="list-style-type: none"> • identify that humans and some other animals have skeletons and muscles for support, protection and movement. • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions <p>construct and interpret a variety of food chains, identifying producers, predators and prey.</p> |
| Summer 1 | <p>Electricity</p> <ul style="list-style-type: none"> • 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 |

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| | <p>buzzers</p> <ul style="list-style-type: none">• identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit• recognise some common conductors and insulators, and associate metals with being good conductors.• |
| Summer 2 | Scientists and inventors |