



Science

To experience, observe and explore the world around us

The National Curriculum states: A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The National Curriculum for Science aims to ensure that all pupils:

- 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

<i>Key Objectives EYFS In Foundation the</i>	<i>Eyfs</i>
In Foundation science is taught through the curriculum area 'understanding the world'. The Early Learning Goal for this area is:	The Natural World Children will explore the natural world around them, making observations and drawing pictures of animals and plants; Children will know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Children will understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
Key experiences	Exploring the changes that happen during the four seasons, going on welly walks around the grounds for first hand experiences of what they can see.

During Foundation we help children to begin to build an understanding of the world around us. This understanding develops through exploring during their child-led learning all the different areas of provision and is then enhanced throughout the seasons to bring the learning to life and engage the children.	Learn about different environments e.g. the polar regions through stories, videos and pictures and the animals that live there. Children explore how they have changed since they were a baby, exploring their body parts and the five senses. Hands on experiences with visitors e.g. Creature Teachers for children to touch, hold and learn about different animals. Off site visits e.g. Minstead/Countryside Education Trust/Longdown Farm where children have the opportunity to go minibeast hunting and learn about the different minibeasts, pond dipping, feed baby animals...etc... Opportunities to explore the changing seasons through their child-led play e.g. when water freezes in the winter. Opportunities to grow plants and be responsible for looking after them. Big Question to spark children's curiosity and encourage thinking about certain topics e.g. Does every animal come from an egg? Outdoor provision – sand and mud kitchen to explore how the consistency changes when we add water.
The characteristics of effective learning These describe behaviours children use in order to learn. To learn well, children must approach opportunities with curiosity, energy and enthusiasm. Effective learning must be meaningful to a child, so that they are able to use what they have learned and apply it in new situations. These abilities and attitudes of strong learners will support them to learn well and make good progress in all the Areas of Learning and Development. We encourage our children to use all the Characteristics of Effective Learning during their Science experiences in Early Years	<i>Playing and exploring – Engagement</i> <i>Finding out and exploring</i> <i>Playing with what they know</i> <i>Being willing to 'have a go'</i> <i>Active Learning – Motivation</i> <i>Being involved and concentrating</i> <i>Keep trying</i> <i>Enjoying achieving what they set out to do</i> <i>Creative and critical thinking</i> <i>Having their own ideas</i> <i>Making links</i> <i>Working with ideas</i>

Science Key stage 1

The national curriculum requirements that our children will study, through a two-year rolling cycle of key stage 1 units

- Enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them.
- Be curious and ask questions about what they notice and are 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, carrying out simple comparative tests, and finding things out using secondary sources of information.
- Begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.
- First-hand practical experiences and appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' is taught through and clearly related to the teaching of substantive science content.

How the subject is taught

At the Oaks Federation, science is taught weekly supported by the science scheme Kapow. Through a variety of first-hand practical experiences, we are encouraging children to become scientists and understand the use of science not only for today but for the future as well. Children

Key stage 1 cycle A					
Autumn 1 Into the Forest	Autumn 2 Fun tech	Spring 1 Let's Get Physical!	Spring 2 Fire! Fire!	Summer 1 Amazing Africa	Summer 2 Wonder women
Substantive Knowledge					
The facts about the natural and humanly constructed world					
Plants: Introduction to plants Children identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Name plant parts and sort leaves into groups based on appearance. Pupils investigate if beans need water for growth and identify edible plant parts.	Animals, including humans: Comparing animals Studying both local and global animals, children recognise common characteristics and physical features. They use this information to make comparisons and classify animals.	Animals, including humans: Life cycles and health Studying the life cycles of various animals, children learn what animals need to survive and how they change over time. Observe changes in their peers, while also developing their ability to take measurements and record data. They learn how scientific knowledge helps people to make healthy choices.	Living things and their habitats: Habitats Considering the life processes that all living things have in common, pupils classify objects into alive, was once alive or has never been alive. Pupils explore global habitats, naming plants and animals that can be found there. They learn how a range of different living things depend on each other for food or shelter.	Plants: Plant growth Children learn about seed germination and the survival needs of plants in later growth phases. Children learn that plants need water, light and a suitable temperature to grow and stay healthy. Children identify the stages in a plant's life cycle and discover how humans impact plants in the environment.	Making Connections

Disciplinary Knowledge					
The skills of a Scientist our children will develop					
-Asking simple questions and recognising that they can be answered in different ways. -Observing closely, using simple equipment. -Performing simple tests.	-Asking simple questions and recognising that they can be answered in different ways. -Gathering and recording data to help in answering questions.	-Asking simple questions and recognising that they can be answered in different ways. -Observing closely, using simple equipment. -Performing simple tests.	-Identifying and classifying	-Asking simple questions and recognising that they can be answered in different ways. -Observing closely, using simple equipment. -Performing simple tests.	-Asking simple questions and recognising that they can be answered in different ways. -Gathering and recording data to help in answering questions.

-Identifying and classifying. -Using their observations and ideas to suggest answers to questions.		-Identifying and classifying. -Using their observations and ideas to suggest answers to questions. -Gathering and recording data to help in answering questions.		-Identifying and classifying. -Using their observations and ideas to suggest answers to questions.	
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Key stage 1 cycle B					
Lego Legends!	Bright Lights, Big City	The Unsinkable Ship	United Kingdom	Guardians of the Forest	Coast to Coast
Substantive Knowledge <i>The facts about the natural and humanly constructed world</i>					
Materials: Everyday Materials Identifying and naming objects and the materials from which they are made. Pupils compare and group materials based on how they look and feel.	Forces and space: Seasonal changes Reflecting on their own experiences, children learn about the four seasons and the weather associated with each. Pupils explore how seasonal changes affect trees, daylight hours and clothing choices. They plan and carry out their own weather reports, considering the knowledge required for this job.	Materials: Uses of Everyday Materials Building on their knowledge of everyday materials and their properties, pupils recognise that materials are suited to specific purposes and explore how actions such as stretching and bending affect the shape of solid objects. They compare the suitability of materials.	Animals: Sensitive bodies Identifying and naming body parts and conducting practical activities to understand the function of each sense.	Living Things and their Habitats: Microhabitats Children discover that microhabitats provide what minibeasts need to survive and where different minibeasts live in the school grounds. They investigate which conditions woodlice prefer.	Making Connections

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