Science Curriculum

Early Years Foundation Stage

Understanding the world 1					
	Working Scientifically	**Plants and Animals**	**Materials**	**Seasonal Changes**	**Forces**
Birth to 3	Explore and respond to different natural phenomena in their setting and on trips.	Encourage children's exploration, curiosity, appreciation and respect for living things. Encourage children to collect and explore natural materials such as leaves and conkers	Explore materials with different properties.		
3 and 4 year olds	Talk about what they see, using a wide vocabulary. Use basic equipment to support investigations e.g. magnifying glasses	Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal e.g. caterpillars or chicks. Begin to understand the need to respect and care for the natural environment and all living things.	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about the differences between materials and changes they notice, e.g. when baking, or exploring ice melting		Explore how things work, e.g. wind up toys, pulleys Explore and talk about different forces they can feel e.g. exploring how the water pushes up when they try to push a plastic boat under it; how they can stretch elastic, snap a twig, but cannot bend a metal rod; magnetic attraction and repulsion

Children in Reception	Explore the natural world around them. Describe what they see, hear and feel whilst outside.	Name and describe some plants and animals in the local environment. Notice how animals behave differently as the seasons change.	Observe and interact with natural processes, such as ice melting, light travelling through transparent material and an object casting a shadow.	Understand the effect of changing seasons on the natural world around them.	Observe and interact with natural processes, a sound causing a vibration, a magnet attracting an object and a boat floating on water.

Early Learning Goal
The Natural World
Children at the expected level of development will: • Explore the natural world around them, making observations and drawing pictures of animals and plants; • 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; • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Key Stage 1

Purpose of study

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.

Science Year 1				
Year 1	**Working Scientifically** • ask simple questions and recognise that they can be answered in different ways • use simple equipment to observe closely e.g. magnifying glasses and microscopes, magnets and pond dipping equipment • perform simple tests • identify and classify • use his/her observations and ideas to suggest answers to questions • gather and record data to help in answering questions e.g. photos and labelled diagrams Vocabulary: observe, equipment, record, measure			
	Animals Including Humans	**Materials**	**Plants**	**Seasonal Changes**
	• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	• distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials e.g. hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent • compare and group together a variety of everyday materials on the basis of their simple physical properties	• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees using the vocabulary: roots, stem, leaves, petals, bulb, seed, trunk, bark • observe vegetables and plants growing, that the children have grown themselves	• observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies

Science				
Year 2	**Working Scientifically** • ask simple questions and recognise that they can be answered in different ways • use simple equipment to observe closely e.g. thermometers and rain gauges, measuring cylinders and jugs, metre sticks • perform simple tests • identify and classify e.g. in Venn and Carrol diagrams • use his/her observations and ideas to suggest answers to questions • gather and record data to help in answering questions • consider safety when handling tools VOCABULARY: evaluate, predict, measure, results, risk			
	Animals Including Humans	**Materials**	**Plants**	**Living Things and their Habitats**
	• understand that animals, including humans, have offspring which grow into adults and use the vocabulary reproduce • describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food – use the vocabulary: predator, prey, primary, secondary, consumers and producers	• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching • know that squashing, bending, twisting and stretching are examples of forces	• observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy • know and use the vocabulary germination, nutrients, temperature, survival, reproduce	• explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and • describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including micro-habitats