Science

INTENT		
End of EYFS	End of Key Stage 1	End of Key Stage 2
Pupils will be given the opportunity to: • Ask questions of the world around them and know that answers can be found in different ways. • Explore the natural world around them. • Describe what they see, hear and feel outside. • Recognise some environments are different to the one in which they live. • Understand the effects of the changing seasons.	Pupils will be given the opportunity 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. • 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.	Pupils will be given the opportunity to: • Develop a deeper understanding of a wide range of scientific ideas, through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. • Begin recognising that scientific ideas change and develop over time. • Select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. • Draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.
IMPLEMENTATION		
End of EYFS	End of Key Stage 1	End of Key Stage 2

Working Scientifically • Show curiosity and ask questions. • Make observations using their senses and simple equipment. • Make direct comparisons. • Use equipment to measure. • Record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets. • Use their observations to help them to answer their questions. • Talk about what they are doing and have found out. • Identify, sort and group.	Working Scientifically • Asking simple questions and recognising that they can be answered in different ways. • Observing closely, using simple equipment. • Performing simple tests. • Identifying and classifying. • Using their observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions.	Working Scientifically • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs. • Using test results to make predictions to set up further comparative and fair tests. • Using simple models to describe scientific ideas. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations. • Identifying scientific evidence that has been used to support or refute ideas or arguments.

Biology • Use all their senses in hands-on exploration of natural materials. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Talk about what they see, using a wide vocabulary. • Talk about members of their immediate family and community. • Name and describe people who are familiar to them. • Explore the natural world around them including seasons. • Describe what they see, hear and feel whilst outside. • Recognise some environments that are different from the one in which they live. • Understand the effect of changing seasons on the natural world around them.	Biology • Be able to identify a variety of trees, including deciduous and evergreen trees. Learn about the basic structure of common flowering plants including trees. • Observe and describe how seeds and bulbs grow into mature plants and find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. • To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. • To know the different animal groups and begin identifying and naming common animals (fish, amphibians, reptiles, birds and mammals including pets). Name them as carnivores, herbivores and omnivores. • Understand that animals, including humans, have offspring which grow into adults. Know about the basic needs for survival and describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. • To 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, name animals and their habitats, describe how different habitats provide for basic needs of living things and how they depend on each other. • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain.	Biology • Identify and describe the functions of different parts of flowering plants (roots, stem/trunk, leaves and flowers). • Explore the requirements of plants for life and growth and how they vary from plant to plant. • Investigate the way in which water is transported within plants and explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. • Identify that animals, including humans, need the right types and amounts of nutrition and that this comes from what they eat. • Explain which parts of the skeleton provide support and protection and how they allow for movement. • Discover the role of the digestive system in the human body and identify the role of the different types of teeth in humans and their simple functions for carnivores, omnivores and herbivores. • Construct and interpret a variety of food chains, identifying producers, predators and prey. • Describe the changes in humans as they develop from birth to old age. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.

		• Recognise the impact of diet, exercise and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans. • Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. • Give reasons for classifying plants and animals based on specific characteristics • Recognise that environments can change and that this can sometimes pose dangers to living things. • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • Be able to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. • Learn about the different life processes of reproduction in some plants and animals. • Explain the differences between the life cycles of mammals, amphibians, insects and birds.

Chemistry • Explore the natural world around them including seasons and changing states of matter. • Begin to make observations around basic solutions.	Chemistry • Observe changes across the four seasons. • Observe and describe weather associated with the seasons and make observations around basic solutions.	Chemistry • Compare and group materials together, according to whether they are solids, liquids or gases. • Observe that some materials change state when they are heated or cooled and measure or research the temperature at which this happens in °C. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. • Know that some materials dissolve and describe how to recover a substance from a solution. • Decide how to separate mixtures including filtering, sieving and evaporating. • Demonstrate that dissolving, mixing and changes of state are reversible changes, but that some changes form a new material and are irreversible, such as burning.

Physics • Explore how things work. • Explore collections of materials with similar and/or different properties. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice.	Physics • Learn to distinguish between an object and the material it is made out of. Begin to understand and describe physical properties. • Compare and group materials according to their simple physical properties. • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. • Learn about identifying and comparing the suitability of different materials. • Learn how materials can be changed by squashing, bending, twisting and stretching. • Be able to compare how objects move on different surfaces and recognise the difference between contact and non-contact forces. • Observe how magnets attract or repel each other and attract some materials but not others. • Investigate the two poles on the magnet and categorise materials into magnetic and non-magnetic materials.	Physics • Compare and group together everyday materials based on their properties, including hardness, solubility, transparency and conductivity. • Give reasons, based on fair tests, for the uses of everyday materials including metals, woods and plastics. • Recognise that darkness is the absence of light. • Observe that light is reflected from surfaces and can be dangerous. Learn how to protect eyes from the light. • Recognise that shadows are formed when light is blocked and find patterns in the way the sizes of shadows change. • Recognise that light travels in straight lines. Use this idea to explain that objects are seen because they give out or reflect light into the eye and that shadows have the same shape as the object that cast them. • Explain that we see things because light travels from the light source to our eyes. Identify light sources. • Explain that unsupported objects fall towards the Earth due to gravity. • Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. • Identify common appliances that run on electricity. Construct simple series electrical circuits, identifying and naming basic parts. Identify whether or not a lamp will light based on whether it is in a loop, recognise that switches open and close circuits.

		• Recognise some common conductors and insulators. • Describe the sun, Earth and moon as approximately spherical bodies. • Compare and give reasons for variations in how components function, including how the brightness of a lamp or the volume of a buzzer is associated with the number and voltage of cells used in the circuit. Understand the function of fuses. • Be able to use recognised symbols when representing a simple circuit in a diagram. • Compare and group different rocks on appearance and simple physical properties. Describe, in simple terms, how fossils are formed. • Recognise that soils are made from rocks and organic matter. Identify how sounds are made, recognising that these are vibrations that travel through a medium to the ear. • Describe the movement of the Earth and other planets relative to the sun in the solar system. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. • Describe the movement of the moon relative to the Earth.
IMPACT		
Pupil Voice		
Subject Monitoring		