

Whole School Science Map



Big Ideas

- Work and communicate scientifically
- Develop scientific knowledge through the disciplines of chemistry, biology and physics.
- Develop an understanding of nature, processes and methods of science through different scientific enquires that help children to answer scientific questions about the world around them.
- To equip children with the scientific knowledge required to understand the uses and implications of science, today and for the future

Reception- My World Children will know that we have 5 senses. They will know we must look after our teeth and that our bodies are made of different parts. They will be able to discuss that people start as a baby, they grow to a child, adult and then an old person.

Seasons and Celebrations Children will understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Wonderful Weather Children will understand the concepts of melting and freezing. They will explore ice melting and freezing through polar regions small world role play and they will explore waterproof materials when investigating the weather.

Terrific Tale Children will know that some materials are strong and some are not and will investigate which walls will withstand the huff and puff from the Big Bad Wolf.

Watch it Grow The children will plant sunflower seeds and be able to talk about the lifecycle of a sunflower. They will name the different parts of a plant and describe some of their functions. Children will investigate growing plants and identify the requirements for growth, including light.

Year 1/2- Cycle A –Everyday materials

Children will be able to name, describe and classify different materials. They will be able to compare properties and changes of a range of materials and be able to raise and answer questions about them.

Animals including Humans Children will identify, classify and observe a variety of common animals, including fish, amphibians, reptiles, birds and mammals. They will be able to name animals that are carnivores, herbivores and omnivores. They will name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Seasonal Changes Children will observe changes across the four seasons.

Plants Children will identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. They will identify and describe the basic structure of a variety of common flowering plants, including trees.

Living Things and their Habitats

Children will compare the differences between things that are living, dead and things that have never been alive. They will know how different habitats provide for the basic needs of different kinds of animals & plants, & how they depend on each other.

Year 1/2- Cycle B- Materials

Children will group together materials on the basis of their simple physical properties and compare for particular uses. They will investigate how the shape of materials can be changed by squashing, bending, twisting and stretching

Animals including Humans Children will be able to name animals and their offspring and describe the basic needs for survival (water, food and air). They will state the importance for humans of exercise, eating the right amounts of different types of foods and hygiene.

Seasonal Changes Children will observe and record weather typical for the seasons and note how day length varies.

Plants Children will observe and describe how seeds and bulbs grow into mature plants and understand the conditions for health and growth of a plant.

Living Things and their Habitats Children will observe habitats and micro-habitats and will use the idea of simple food chains.

Year 3/4 – Cycle A – Forces and Magnets

Children will compare how things move on different surfaces. They will describe magnets having two poles and observe how magnets attract and repel each other. They will compare and group materials based on whether they are attracted to metal.

Sound Children will know that sounds are caused by vibrations that travel through a medium to the ear. They will investigate patterns in pitch and volume.

Plants Children will be able to identify and describe the functions of the different parts of a plant. They will explore what plants need for life and growth and investigate ways water is transported within plants.

Animals including humans Children will be able to construct a variety of food chains, identifying producers, predators and prey. They will be introduced to food webs.

States of Matter Children will study the water cycle and identify the part played by evaporation and condensation. They will investigate the effect of temperature on the rate of evaporation.

Living Things and their Habitats Children will group living things in a variety of ways using classification keys. They will recognise that environments can change and this can pose dangers to animals

Year 3/4 – Cycle B – Animals including Humans

Children will be able to describe the basic parts and simple functions of the digestive system. They will identify the different types of teeth and their functions.

Light Children will recognise that light is needed to see things and that dark is the absence of light. They will learn how shadows are formed. Children will know that the sun can be dangerous and that there are ways to protect their eyes.

Electricity Children will be able to construct a simple circuit. They will recognise the role a switch plays, and be able to recognise conductors and insulators. They will draw pictorial representations of circuits.

States of Matter Children will compare and group materials according to whether they are solids, liquids and gases based on their properties. They will investigate the temperature at which materials change state.

RoCKs Children will be able to group together different types of rocks on the basis of their appearance. The children will be able to name some types of igneous, sedimentary and metamorphic rocks. They will be able to describe how fossils are formed and recognise that soils are made from rocks and organic matter.

Year 5/6 – Cycle A -Properties and changes of materials

Children will be able to group together materials based on their properties. They will explore how materials conduct or insulate heat.

Light Children will recognise that light travels in straight lines and use this to explain that objects are seen by reflecting light into the eye.

Living things and their habitats Children will be able to describe how living things are classified into broad groups based on observable characteristics. They will be able to describe differences in life cycles and the process of reproduction in some plants and animals.

Evolution and Inheritance Through the study of fossils, children will recognise that things have changed over time. They will recognise that children produce offspring of the same kind but are often vary from their parents. They will identify ways animals and plants have adapted to their environment.

Animals including humans Children will identify the main parts of the circulatory system, and describe the ways in which nutrients and water are transported. They will recognise the impact of diet, exercise, drugs and lifestyle on the ways their bodies function.

Year 5/6 – Cycle B – Properties & changes of materials

Children will know that some materials will dissolve in liquid to form a substance. Children will be able to group together materials based on the electrical conductivity. They will be able to explain reversible and irreversible changes and know that changes can result in the formation of new materials.

Earth and Space Children will be able to describe the movement of the Earth, and other planets relative to the Sun in the solar system. They will describe the movement of the moon relative to the Earth. They will be able to describe them as approximately spherical bodies. They will be able to explain how day and night occurs.

Forces Children will be able to explain that due to gravity unsupported objects fall towards the Earth. They will identify the effects of air resistance, water resistance and friction. They will explore mechanisms such as levers, gears and pulleys.

Animals including humans Children will be able to describe the changes as humans develop to old age.

Electricity Children will build on their knowledge of circuits to compare and give reasons for variations in how components work. They will be able to associate the brightness of a bulb with the number and voltage of cells. They will be able to use recognised symbols when representing a circuit with multiple components.

