Science Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer2
Nursery	**Autumn** End Points: • To observe seasonal changes (UTW). • To understand the key features of trees' life cycle (UTW). **Outdoor** End Points: • To explore the outside classroom (UTW). • To feel and use how things work and explore forces (UTW). **Food** End Points: • To name some fruits and vegetables *(Oliver's Vegetables).* • To know about healthy food choices (PSED).		**Their World** End Points: • To observe and notice detailed features of objects in their environment (UTW). **New Life (Spring)** End Points: • To observe seasonal changes and key features of Spring (UTW). • To look at new life and observe different animals (UTW). • To discuss our families and begin to make sense of the human life cycle (UTW). **Personal Hygiene** End Points: • To display self-care and hygiene skills (PSED). • Understand the need for good personal hygiene (Oral Educator visit). • Make healthy choices at snack time (PSED). **Animals** End Points: • To compare animals and their properties (UTW). • To recognise some animals and recall some facts (Dinosaurs) (UTW). **Space** End Points: • Carry out a simple experiment.		**Growing** End Points: • To observe and learn about fruits and their different properties (UTW). • To plant seeds (UTW). • To begin to understand how to care for living things (UTW). **Minibeasts** End Points: • To explore minibeasts and their different habitats (UTW). • To begin to understand the need to respect and care for the natural environment (UTW). • To understand the life cycle of a caterpillar *(The Very Hungry Caterpillar)* (UTW).	
Reception	**Autumn** End Points: • To talk about and experience effects of Autumn: what they see, hear, smell and feel (UTW). • To go on an autumn talk to explore the environment around them (P/UTW). • To learn about Autumn features e.g. changing leaf colour and falling leaves (UTW). • To observe, draw and name parts of a tree and some seeds e.g. conker, acorn (UTW).	**Bread** End Points: • To learn about the seeds to bread sequence (UTW). • To observe and talk about the changing state of matter e.g. eggs in vinegar, yeast in bread and proving and baking bread (UTW). • To understand where food comes from and where we can buy food such as bread and eggs (UTW). **Winter** End Points: • To talk about and experience effects of Winter: what they see, hear, smell and feel (UTW).	**Materials** End Points: • To observe and describe wood, stone and metal. • To explore magnets. **Ourselves** End Points: • To learn about the growth of ourselves – height, feet and size (UTW). • To understand that exercise, eating, sleeping and hygiene can contribute to good health (PSED). • To understand the need for a variety of foods (PSED).	**Spring** End Points: • To talk about and experience effects of Spring: what they see, hear, smell and feel (UTW). • To learn about Spring features e.g. warmth and new life (UTW). **Growth** End Points: • To observe, draw and name parts of flowers: snow drops and daffodils (UTW). • To observe and learn about the process of growing foods e.g. turnips (UTW). • To explore changes of state through cooking (hard/soft/solid/liquid) (UTW).	**Minibeasts** End Points: • To understand the needs of all living things: basic needs of animals (PSED). • To care for new life (PSED). • To observe, draw and name parts of a worm with accuracy (UTW). • To explore and build wormeries: changes in matter e.g. earth, soil, gravel and sand (UTW). • To learn about minibeasts' habitats: rocks, earth, wood and leaves (UTW). • To observe, draw, name and group rocks (UTW). • To learn facts about lots of different minibeasts (UTW).	**Summer** End Points: • To talk about and experience effects of Summer: what they see, hear, smell and feel (UTW). • To learn about Summer weather e.g. sun and heat (PSED). **Growth** End Points: • To observe and describe what a plant needs for growth (UTW). • Explore how plants drink water (dye) (UTW). • To understand the basic needs of caring for plants (PSED). • Exploring if everything we grow is healthy? (PSED).

		• To learn about Winter weather e.g. snow and ice (UTW). • To sequence the seasons (UTW). • To explore different habitats around the world e.g. the Arctic (UTW).		**Water** End Points: • To learn and talk about the story of Archimedes and his bath (UTW). • To observe and describe parts of boats (UTW). • Observe and describe floating materials (UTW).	• To learn how to sequence the lifecycle of a butterfly and a frog (UTW). • To carry out a simple experiment: jelly worm in vinegar and baking soda. Science Lab Role Play Area	**ELG: The Natural Word** End Points: • Explore the natural world around them, making observations and drawings of animals and plants. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
Year 1	**Materials** End Points: • To be able to 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. • Compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Seasonal Changes** End Points: • Name the four seasons. • Understand changes in the local environment during the four seasons. • Observe changes across the 4 seasons in the local environment - spring, summer, autumn and winter. • Observe and describe weather associated with the seasons and how day length varies.	**Light and Dark** End Points: • To name sources of light. • To understand how shadows are formed. • Identify nocturnal and diurnal animals.	**Crest Stars Experiment (Working Scientifically Focus)** End Points: • To conduct a simple experiment. • To make a prediction. • To record our results. • To observe closely, using simple equipment. • To ask and answer questions.	**Animals (including Humans)** End Points: • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals). • Identify and name a variety of common animals that are carnivores, herbivores and omnivores.	**Plants** End Points: • Identify and name a variety of common plants, including garden plants, wild plants and trees. • Understand the structure of a plant. • Identify different types of trees in our local environment. • Identify some 'deciduous' and 'evergreen' trees.
Year 2	**Living things and habitats** End Points: • 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. • Describe how animals adapt to survive. • Identify and name a variety of plants and animals in their habitats, including microhabitats. • Describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. • Describe how animals obtain their food from plants and other animals. • Construct simple food chains to show how animals obtain their food from plants and other animals.		**Materials** End Points: • Identify the uses of everyday materials. • Compare the suitability of materials. • Find out how the shapes of solid objects made from some materials can be changed.	**Animals Including Humans** End Points: • Understand that animals, including humans, have offspring which grow into adults. • 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.	**Plants** End Points: • 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. • Observe and record the growth of plants through a comparative test.	
Year 3	**Forces and Magnets** End Points: • Understand what forces are. • Describe magnets as having two poles. • Compare and group together a variety of everyday materials	**Rocks** End Points: • Understand fossilisation. • Observe, describe and compare rocks. • Understand the formation of soil.	**Animals, including Humans** End Points: • Understand that animals, including human, need the right types and amount of nutrition.	**Light** End Points: • Recognise that we need light in order to see things, and that dark is the absence of light. • Name sources of light.	**Plants** End Points: • 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. • Investigate the way in which water is transported within plants. • Understand the life cycle of a flowering plant.	

	on the basis of whether they are attracted to a magnet. • Compare how things move on different surfaces.		• Understand that humans and some animals have skeletons and muscles.	• Recognise and identify opaque, transparent and translucent materials. • Describe the relationship between the position of a light source and the size/shape of a shadow.		
Year 4	**States of Matter** End Points: • Identify and describe the three states of matter - solid, liquid, and gas. • 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. • Identify the part played by evaporation and condensation in the water cycle.		**Electricity** End Points: • Identify common appliances that run on electricity. • Construct a simple series electrical circuit. • Identify and name basic parts of a circuit. • Recognise and solve 'errors' in circuits to make them work. • 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.	**Sound** End Points: • Identify how sounds are made • 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.	**Animals, including Humans (Digestive System & Teeth)** End Points: • 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. • Construct and interpret a variety of food chains, identifying producers, predators and prey.	**All Living Things and their Habitats Food Chains** End Points: • Recognise that living things can be grouped in a variety of ways. • Use classification keys to help group, identify and name a variety of living things in their local and wider environment. • Recognise that environments can change and that this can sometimes pose dangers to living things.
Year 5	**Properties and Changes of Materials** K End Points: • Compare and group together everyday materials on the basis of their properties. • Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.		**Space** End Points: • Describe the movement of the Earth, and other plants, relative to the Sun in the solar system. • Describe the movement of the moon relative to the Earth. • Describe the Sun, Earth and Moon as approximately spherical bodies. • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. • Research the life of the first woman in space – Helen Sharman.	**Living Things and their Habitats** End Points: • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Describe the life process of reproduction in some plants and animals. • Research the work of naturalists and animal behaviourists such as David Attenborough and Jane Goodall.	**Animals, including Humans (Living and Growing)** End Points: • Order and compare the stages in the human life cycle. • Understand and describe the changes as humans develop to old age. • Understand why puberty happens. • Compare gestation time in animals. • RSE – Learn about body changes that are a preparation for sexual maturity. • RSE – Understand the ways males and females grow and develop during puberty, physically and emotionally. • RSE – Discuss and ask questions about changing bodily needs. • RSE – Develop ways to deal with feelings towards themselves, family and friends in a positive way. • RSE – Know the names of the main body parts, including internal and external genitalia	**Forces** End Points: • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • 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. • Design and conduct experiments to explore forces in action, such as testing the effect of different surface materials on friction.

				and why it's important to keep them private.	
Year 6	**Animals, including Humans** End Points: • Identify and name the main parts of the human circulatory system. • Describe the functions of the heart, blood vessels and blood. • Recognise the impact that diet, exercise, drugs and lifestyle can have on the body. • Describe the ways in which nutrients and water are transported within animals, including humans.	**Living Things and their Habitats** End Points: • Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. • Give reasons for classifying plants and animals based on specific characteristics.	**Evolution and Inheritance** End Points: • 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. • Understand what is meant by inheritance. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	**Light** End Points: • Recognise that light appears to travel in straight lines. • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	**Electricity** End Points: • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on / off position of switches. • Use recognised symbols when representing a simple circuit in a diagram.