

Science Curriculum Overview 2020-21



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	<p>Throughout nursery the children will cover these objectives:</p> <ul style="list-style-type: none"> Beginning to understand 'why' and 'how' questions. (Communication and Language, Understanding 30-50) Listens and responds to ideas expressed by others in conversation or discussion. (Communication and Language, Understanding 40-60+) Learns new words very rapidly and is able to use them in communicating. (Communication and Language – Speaking 22-36) Uses talk to connect ideas, explain what is happening. (Communication and Language – Speaking 30-50) Questions why things happen and gives explanations. (Communication and Language – Speaking 30-50) Builds up vocabulary that reflects the breadth of their experiences. (Communication and Language – Speaking 30-50) Extends vocabulary, exploring the meaning of new words. (Communication and Language – Speaking 40-60) Notices detailed features of objects in their environment. (Understanding the World, The World 22-36) Comments and asks questions about aspects of their familiar world and the natural world. (Understanding the World, The World 30-50) Can talk about some of the things they have observed such as plants, animals, natural and found objects. (Understanding the World, The World 30-50) Talks about why things happen and how things work. (Understanding the World, The World 30-50) Developing an understanding of growth, decay and changes over time. (Understanding the World, The World 30-50) Shows care and concern for living things and the environment. (Understanding the World, The World 30-50) Looks closely at similarities, differences, patterns and change. (Understanding the World, The World 40-60+) 					
Reception	<ul style="list-style-type: none"> Can talk about some of the things they have observed such as plants, animals, natural and found objects. (Understanding the World, The World 30-50) Talks about why things happen and how things work. (Understanding the World, The World 30-50) Developing an understanding of growth, decay and changes over time. (Understanding the World, The World 30-50) Shows care and concern for living things and the environment. (Understanding the World, The World 30-50) Looks closely at similarities, differences, patterns and change. (Understanding the World, The World 40-60+) <ul style="list-style-type: none"> Extends vocabulary, especially by grouping and naming. (Sp 40-60) Uses talk to organise, sequence and clarify thinking, ideas, feelings and events (Sp 40-60) They develop their own narratives and explanations by connecting ideas or events. (ELG Sp) They answer 'how' and 'why' questions about their experiences or events. (ELG Und) Shows some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health. (HSC 40-60) Looks closely at similarities, differences, patterns and change. (40-60 The world) Children know about similarities and differences in relation to objects, materials and living things. (ELG The World) They make observations of animals and plants and explain why some things occur, and talk about changes. (ELG World) Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy (ELG HSC) 					
Year 1	<p>Catching up Reception objectives missed from the previous years (specific objectives found on the Progression of Skills document)</p>	<p><u>Animals including humans</u></p> <p>Big Question - Name and describe some common animals?</p> <p>During this topic, the children will explore and answer questions about animals in their habitat. They will try to understand how to take care of animals. Pupils will become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets. Pupils will have opportunities to learn</p>	<p><u>Seasonal Changes (Autumn, Winter) –</u></p> <p>Big Question - What season is it now and how do you know?</p> <p>During this topic, pupils will get the chance to observe and talk about changes in the weather and the seasons. The focus of this topic will be autumn and winter.</p>	<p><u>Everyday materials</u></p> <p>Big Question - How are materials used in our school?</p> <p>Pupils will explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties. Pupils should explore and experiment with a wide variety of materials including for example: brick, paper, fabrics, elastic, foil.</p>	<p><u>Plants</u></p> <p>Big Question - Can you draw and label the main parts of a plant?</p> <p>Pupils will use the local environment throughout this topic to explore and answer questions about plants growing in their habitat. Where possible, they will observe the growth of flowers and vegetables that they have planted. They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures.</p>	<p><u>Seasonal Changes (Spring, Summer)</u></p> <p>Big Question - What is your favourite season and why?</p> <p>Building on the topic from earlier in the year, during this topic, pupils will get the chance to observe and talk about changes in the weather and the seasons. This time, focusing on the seasons of spring and summer.</p>

		the names of the main body parts through games, actions, songs and rhymes.				
Year 2	<p>Plants - Unit started previous year and some objectives are to be completed</p> <p><u>Seasonal Changes (Spring, Summer)</u></p> <p>Big Question - What is your favourite season and why?</p> <p>Building on the topic from earlier in the year, during this topic, pupils will get the chance to observe and talk about changes in the weather and the seasons. This time, focusing on the seasons of spring and summer.</p>	<p><u>Uses of everyday materials</u></p> <p>Big Question - How do we choose materials?</p> <p>Pupils will begin to identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing or different materials are used for the same thing. They will think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials.</p>	<p><u>Living things and their habitats</u></p> <p>Big Question - How do you know if something is alive?</p> <p>Pupils will be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. Pupils should be introduced to the terms 'habitat'. They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat.</p>	<p><u>Animals including Humans</u></p> <p>Big Question - What do animals need to stay alive?</p> <p>Pupils will learn about the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They will also be introduced to the processes of reproduction and growth in animals. The focus at this stage will be on questions that help pupils to recognise growth.</p>	<p><u>Plants</u></p> <p>Big Question - Can living things live forever?</p> <p>Building on this unit from Year 1, the pupils will now observe how different plants grow. Pupils will be introduced to the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants.</p>	<p><u>Exploring and Investigating</u></p> <p>Big Question - What new knowledge have you discovered?</p> <p>In this unit, the children will build on some of their Working Scientifically skills as they explore and complete investigations. Using a range of hands on activities they will learn to observe and make scientific discoveries from their enquiry work.</p>
Year 3	<p><u>Animals, including humans</u></p> <p>Big Question - How do living things work?</p> <p>Pupils should continue to learn about the importance of nutrition and should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions.</p> <p>Plants – Unit started previous year and some objectives are to be completed</p>	<p><u>Rocks</u></p> <p>Big Question - Are all rocks the same?</p> <p>In this topic, pupils will explore different kinds of rocks and soils, including those in the local environment, where possible.</p>	<p><u>Forces and Magnets</u></p> <p>Big Question - What is a magnet and what can they do?</p> <p>During this topic, the pupils observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). They will explore the behaviour and everyday uses of different magnets.</p>	<p><u>Plants</u></p> <p>Big Question - What does a plant need to survive?</p> <p>Building on the previous learning with plants in KS1, the pupils will now be introduced to the relationship between structure and function: the idea that every part has a job to do. They will explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.</p>	<p><u>Light</u></p> <p>Big Question - What is the difference between a reflection and a shadow?</p> <p>Pupils will explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. They will also look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.</p>	<p><u>Focused Assessments</u></p> <p>Children will complete focused assessments (using TAPS) in order to revisit and assess their science knowledge and progress. The activities are designed to assess what they can do and what they can remember from this year's learning in science.</p>
Year 4	<p>Plants - Unit started previous year and some objectives are to be completed</p> <p><u>Light</u></p> <p>Big Question - What is the difference between a reflection and a shadow?</p> <p>Pupils will explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. They will also look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.</p>	<p><u>Animals, including humans</u></p> <p>Big Question - What happens to food when it enters our bodies?</p> <p>In this topic, the pupils will build on work from Year 1 on human body parts. This time they will be introduced to the main body parts associated with the digestive system, for example, mouth, tongue, teeth, oesophagus, stomach and small and large intestine and explore questions that help them to understand their special functions.</p>	<p><u>Sound</u></p> <p>Big Question - How do we hear different sounds?</p> <p>During this topic, pupils will get the chance to explore and identify the way sound is made through vibration in a range of different musical instruments from around the world; and find out how the pitch and volume of sounds can be changed in a variety of ways.</p>	<p><u>States of Matter</u></p> <p>Big Question - Is water always wet?</p> <p>Pupils will explore a variety of everyday materials and develop simple descriptions of the states of matter. Pupils will observe water as a solid, a liquid and a gas and will also observe the changes to water when it is heated or cooled.</p>	<p><u>Living things and their habitats</u></p> <p>Big Question - What plants and animals live in our local environments?</p> <p>Pupils will use the local environment to help them to identify and study plants and animals in their habitat. They will identify how the habitat changes throughout the year. Pupils will explore possible ways of grouping a wide selection of living things. Pupils will also explore examples of human impact (both positive and negative) on environments.</p>	<p><u>Electricity</u></p> <p>Big Question - Can we control electricity?</p> <p>Pupils will construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils will draw the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage; these will be introduced in Year 6.</p>

<p>Year 5</p>	<p>Living things and their habitats – Unit started previous year and some objectives to be completed</p> <p><u>Electricity</u></p> <p>Big Question - Can we control electricity?</p> <p>Pupils will construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils will draw the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage; these will be introduced in Year 6.</p>	<p><u>Earth and Space</u></p> <p>Big Question - Sun, Earth and Moon: what is moving?</p> <p>Pupils will be introduced to a model of the Sun and Earth that enables them to explain day and night. Pupils will learn that the Sun is a star at the centre of our solar system and that it has eight planets. They should understand that a moon is a celestial body that orbits a planet. Pupils will also find out about the way that ideas about the solar system have developed.</p>	<p><u>Forces</u></p> <p>Big Question - How do things move?</p> <p>During this topic, pupils can explore falling objects and raise questions about the effects of air resistance. They should experience forces that make things begin to move, get faster or slow down. Pupils should explore the effects of friction on movement and find out how it slows or stops moving objects. Pupils will also explore the effects of levers, pulleys and simple machines on movement.</p>	<p><u>Properties and changes of material</u></p> <p>Big Question - Can we change materials?</p> <p>In this topic, the pupils will build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials. They will explore reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes. They will find out about how chemists create new materials.</p>	<p><u>Living things and their habitats</u></p> <p>Big Question - Do all life cycles look the same?</p> <p>Pupils will study and raise questions about their local environment throughout the year. They will observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. They may find out about the work of naturalists and animal behaviourists.</p>	<p><u>Animals, including humans</u></p> <p>Big Question - How do bodies change as we get older?</p> <p>Pupils will learn about the stages in the growth and development of humans. They will also learn about the changes that humans experience during puberty.</p>
<p>Year 6</p>	<p><u>Animals, including humans</u></p> <p>How do our choices affect how our bodies work?</p> <p>Pupils should build on their learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function. Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.</p>	<p><u>Evolution and inheritance</u></p> <p>Big Question - How do living things change over time and place?</p> <p>Building on what they learned about fossils in the topic on rocks in year 3, pupils will now find out more about how living things on earth have changed over time. They should be introduced to the idea that characteristics are passed from parents to their offspring. They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments.</p>	<p><u>Electricity</u></p> <p>Big Question - Can we vary the effects of electricity?</p> <p>Building on their work in year 4, pupils will construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They should learn how to represent a simple circuit in a diagram using recognised symbols.</p>	<p><u>Light</u></p> <p>Big Question - How do we see?</p> <p>During this topic, pupils will build on the work on light in year 3, exploring the way that light behaves, including light sources, reflection and shadows. They will discuss what happens and make predictions.</p>	<p><u>Living things and their Habitats</u></p> <p>Big Question - What is the same and what is different?</p> <p>Pupils should build on their learning about grouping living things in Year 4 by looking at the classification system in more detail. They will be introduced to groupings and how plants and animals can be subdivided. Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They will discuss reasons why living things are placed in one group and not another.</p>	<p>Living things and their habitats – Unit started previous year and some objectives to be completed</p> <p><u>Animals, including humans</u></p> <p>Big Question - How do bodies change as we get older?</p> <p>Pupils will learn about the stages in the growth and development of humans. They will also learn about the changes that humans experience during puberty.</p>