



Curriculum Overview –2020

Subject: Science



	<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
Bears (Reception)	<p>“All about me” (Human)</p> <ul style="list-style-type: none"> • Sorting humans • Timeline of development <p>Celebrations (Seasons and Materials)</p> <ul style="list-style-type: none"> • Collecting and exploring Autumn treasure on Autumn walk • Firework potions 	<p>Let’s Pretend (Seasons and Plants)</p> <ul style="list-style-type: none"> • Spring walk-make bird feeders • Growing bean plants/ Sequencing growth of beans <p>Animals (and habitats)</p> <p>Sorting animals according to:</p> <ul style="list-style-type: none"> • habitat • features • Food chains 	<p>Pirates (Materials)</p> <ul style="list-style-type: none"> • Experimenting with sinking and floating <p>Sand and Water (Properties and changes of materials)</p> <ul style="list-style-type: none"> • Where does water come from? <i>(Making models of water cycle)</i> • Investigate properties of water (freezing and melting).
Skills Progression Ladder (From ELG)	<p>Planning and predicting</p> <p>Listen to stories, accurately anticipating key events and respond to what they hear with relevant comments, questions or actions.</p> <p>Talk about the features of their own immediate environment and how environments might vary from one to another.</p> <p>They select technology for particular purposes.</p>	<p>Investigating and observing</p> <p>They make observations of animals and plants and explain why some things occur, and talk about changes.</p> <p>They use technology for particular purposes.</p> <p>Children show good control and coordination in large and small movements. They move confidently in a range of ways, safely negotiating space. They handle equipment and tools effectively, including pencils for writing.</p>	<p>Recording, analysing and evaluating</p> <p>Answer ‘how’ and ‘why’ questions about their experiences and in response to stories or events.</p> <p>Use past, present and future forms accurately when talking about events that have happened or are to happen in the future. They develop their own narratives and explanations by connecting ideas or event.</p> <p>They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.</p> <p>Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns.</p>

<p>Lions (Year 1)</p>	<p>Seasonal Changes</p> <ul style="list-style-type: none"> observe changes across the four seasons describe weather associated with them and how day length varies. <p>describe and compare the structure of a variety of common animals</p> <p>Plants</p> <ul style="list-style-type: none"> <i>identify and name a variety of common wild and garden plants</i> <p>Animals including Humans</p> <ul style="list-style-type: none"> 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 	<p>Seasonal Changes</p> <ul style="list-style-type: none"> observe changes across the four seasons <p>observe and describe weather associated with the seasons and how day length varies.</p> <p>Everyday Materials</p> <ul style="list-style-type: none"> difference between object and the material made from name a variety of everyday materials <p>describe the simple physical properties of a variety of everyday materials and group together on the basis of their simple physical properties.</p>	<p>Seasonal Changes</p> <ul style="list-style-type: none"> observe changes across the four seasons describe weather associated with them and how day length varies. describe and compare the structure of a variety of common animals <p>Plants</p> <ul style="list-style-type: none"> <i>identify and describe the basic structure of a variety of common flowering plants, including trees</i> <p>Animals including Humans</p> <ul style="list-style-type: none"> 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 	
<p>Skills Progression Ladder</p>	<p>Planning and predicting Suggest what might happen and ways to test ideas</p>	<p>Investigating and observing Make observations using appropriate senses. Explore using the five senses. Make simple comparisons and groupings.</p>	<p>Recording, analysing and evaluating Communicate findings in simple ways. Collect evidence to try to answer a question.</p>	
<p>Kangaroos (Year 1 / 2)</p>	<p>Seasons Animals Materials</p>	<p>Seasonal Changes Scientific skills Properties of materials Plants</p>	<p>Types of animals Growing and change Season and weather</p>	<p>Living things Plants Materials</p>
<p>Skills Progression Ladder</p>	<p>Planning and predicting <i>See Lions</i> Suggest what might happen and ways to test ideas.</p>	<p>Investigating and observing <i>See Lions</i> Make observations using appropriate senses. Explore using the five senses. Make simple comparisons and groupings.</p>	<p>Recording, analysing and evaluating <i>See Lions</i> Communicate findings in simple ways. Collect evidence to try to answer a question.</p>	

<p>Tigers (Year 2)</p>	<p>Plants</p> <ul style="list-style-type: none"> 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. <p>Everyday Materials</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<p>Working Scientifically (Focus of teacher's choice)</p> <ul style="list-style-type: none"> 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. <p>Living things</p> <ul style="list-style-type: none"> explore and compare the differences between things that are living, dead, and things that have never been alive. 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. 	<p>Animals including Humans</p> <ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults find out about and 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. <p>habitats</p> <ul style="list-style-type: none"> 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
<p>Skills Progression Ladder</p>	<p>Planning and predicting With help, suggest some ideas and questions. Think about how to collect evidence. Suggest what might happen. Think about and discuss whether comparisons and test are fair or unfair.</p>	<p>Investigating and observing Make observations and comparisons using simple equipment, following simple instructions. Use first-hand experience and, with help, simple information sources to answer questions.</p>	<p>Recording, analysing and evaluating Record findings in simple ways including tables, graphs etc. Say whether what happened was what was expected and draw simple conclusions.</p>

<p>Turtles (Year 3)</p>	<p>Animals incl. humans (digestive system, teeth, food chains)</p> <ul style="list-style-type: none"> • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p>Rocks – Compare and group</p> <ul style="list-style-type: none"> • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe in simple terms how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter 	<p>Forces and magnets</p> <ul style="list-style-type: none"> • how things move on different surfaces <p>some forces need contact between two objects, but magnetic forces act at a distance</p> <ul style="list-style-type: none"> • magnets attract or repel each other and some materials • compare and group together a variety of everyday materials on this basis • identify some magnetic materials • magnets have two poles • will magnets attract or repel each other, depending on which poles are facing. <p>Plants</p> <ul style="list-style-type: none"> • functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) vary from plant to plant • investigate water transported within plants • life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	<p>Light</p> <ul style="list-style-type: none"> • need light in order to see things • dark is the absence of light • light is reflected from surfaces • light from the sun can be dangerous, ways to protect their eyes • shadows are formed when the light is blocked by an opaque object • find patterns in the way that the size of shadows change. <p>Extra Space focus with RHS equipment – the Sun is a source of light, moon reflects sun’s light)</p>
<p>Skills Progression Ladder</p>	<p>Planning and predicting Respond to suggestions. With help, put forward ideas about testing. Make predictions. With help, consider what constitutes a fair test. With help, carry out a fair test.</p>	<p>Investigating and observing Make observations and comparisons. Measure length, volume of liquid and time in standard measures using simple measuring equipment. Use first-hand experience and simple information sources to answer questions.</p>	<p>Recording, analysing and evaluating Communicate findings in a variety of ways. Say whether what happened was what was expected. With help, identify simple patterns and suggest explanations.</p>

<p>Dolphins (Year 4)</p>	<p>Living things and habitats</p> <ul style="list-style-type: none"> recognise that living things can be grouped in a variety of ways explore and 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. <p>Electricity</p> <ul style="list-style-type: none"> identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery 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, and associate metals with being good conductors. 	<p>Sound – Vibrations, ears</p> <ul style="list-style-type: none"> identify how sounds are made, associating some of them with something vibrating 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. 	<p>Animals incl. humans</p> <ul style="list-style-type: none"> 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. <p>States of matter</p> <ul style="list-style-type: none"> 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 degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
<p>Skills Progression Ladder</p>	<p>Planning and predicting Recognise why it is important to collect data to answer questions. Suggest questions that can be tested. Put forward ideas about testing and make predictions. With help, consider what constitutes a fair test.</p>	<p>Investigating and observing Make relevant observations and comparisons. Make measurements of temperature, time and force as well as measurements of length. Begin to think about why measurements of length should be repeated. With help, carry out a fair test recognising and explaining why it is fair.</p>	<p>Recording, analysing and evaluating Explain what the evidence shows in a scientific way and whether it supports predictions. Suggest improvements in their work.</p>

<p>Penguins (Year 5)</p>	<p>Animals including humans</p> <ul style="list-style-type: none"> describe the changes as humans develop to old age. <p>Forces</p> <ul style="list-style-type: none"> gravity between the Earth and falling object identify 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. 	<p>Earth and Space</p> <ul style="list-style-type: none"> describe the movement of the Earth, and other planets, 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. <p>Properties and change of materials</p> <ul style="list-style-type: none"> compare and group together materials based on properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets solutions - how to recover a substance from solids, liquids and gases -how mixtures might be separated reasons for uses of everyday materials, inc. metals, wood and plastic reversible changes the formation of new materials is not usually reversible 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> 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.
<p>Skills Progression Ladder</p>	<p>Planning and predicting Recognise that scientific ideas are based on evidence and creative thinking. Make predictions based on scientific knowledge. Suggest methods of testing including a fair test. Suggest how to collect evidence. Select suitable equipment.</p>	<p>Investigating and observing Carry out a fair test explaining why it is fair. Understand why observations and measurements need to be repeated. Select information from provided sources.</p>	<p>Recording, analysing and evaluating Communicate findings in a variety of ways. Identify simple trends and patterns. Communicate finding in tables, bar charts and line graphs, whilst making appropriate use of ICT. Identify trends and patterns and offer explanations for these. To draw conclusions and communicate them in appropriate scientific language. Suggest improvements in their work giving reasons.</p>

<p>Sharks (Year 6)</p>	<p>Electricity and Forces</p> <ul style="list-style-type: none"> • number and voltage of cells used in the circuit • reasons for variations in how components function, • use recognised symbols for simple circuit diagram. <p>Light</p> <ul style="list-style-type: none"> • light travels in straight lines • we see things because light travels from light sources to objects and then to our eyes • shadows have the same shape as the objects that cast them. <p>Living things and their habitats</p> <ul style="list-style-type: none"> • 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. <p>Mock Science SATS</p>	<p>Animals including humans</p> <ul style="list-style-type: none"> • 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, drugs and lifestyle on the way their bodies function • describe nutrients and water transported within animals, including humans. <p>Evolution and Inheritance/ Revision</p> <ul style="list-style-type: none"> • 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 • how adaptation may lead to evolution. <p>Mock Science SATS</p>	<p>SATS REVISION</p> <p>High School Preparation Science Focus</p> <p>Discussed with RHS (transition holes)</p>
<p>Skills Progression Ladder</p>	<p>Planning and predicting Consider how scientists have combined evidence from observation and measurement with creative thinking to suggest new ideas and explanations for phenomena. Make predictions based on scientific knowledge and understanding. Suggest methods of testing, including a fair test, and how to collect evidence, ensuring it is sufficient and appropriate.</p>	<p>Investigating and observing Carry out a fair test identifying key factors to be considered. Make a variety of relevant observations and measurement using simple apparatus correctly. Decide when observations and measurements need to be checked, by repeating, to give more reliable data. Select information from a range of sources.</p>	<p>Recording, analysing and evaluating Communicate finding in tables, bar charts and line graphs, whilst making appropriate use of ICT. Identify trends and patterns and results that do not appear to fit the pattern. Provide explanations for differences in observations and measurements. Draw conclusions and communicate them in appropriate scientific language. Make practical suggestions for improving methods in their work giving reasons.</p>