

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer2
<p><b>INTENT</b> – Luddenden CE school is committed to providing an environment which nurtures innovation, curiosity, excellence and a love of learning. Our Science curriculum aims to ensure that all pupils:</p> <ul style="list-style-type: none"> <li>• develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics</li> <li>• develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them</li> <li>• are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future</li> </ul> <p>We recognise the importance of science in every aspect of daily life. We therefore make links to real life situations, celebrate diverse and influential scientists, and provide exciting opportunities for children to investigate and learn from first-hand experiences. Our core values in science are endurance, respect, and courage.</p> <p><b>IMPLEMENTATION</b> - Scientific knowledge, understanding and enquiry skills are embedded in each topic the children study. These topics are revisited and developed throughout their time at school. We ensure all children develop an understanding of the world around them, whilst acquiring specific skills and knowledge, to help them think scientifically.</p> <p><b>IMPACT</b> – Children demonstrate sound scientific knowledge, skills and understanding of the concepts studied. They are inquisitive and articulate, and can apply their scientific knowledge to describe and understand the world and processes around them. Pupils use their investigative skills to ask and answer scientific questions and consolidate/expand their learning.</p>						
Early Years	<p><b>Covered throughout the year by exploring events and through following children's interests.</b></p> <ul style="list-style-type: none"> <li>• Explore the natural world, making observations and drawing pictures of animals and plants</li> <li>• Know some similarities and differences between the natural world around them and contrasting environments</li> <li>• Understand some important processes and changes in the natural world, including the seasons and changing states of matter</li> <li>• Safely use and explore a variety of materials</li> </ul>					
Year 1	<p><b>Theme = OUR BODIES</b> Animals , including humans</p> <ul style="list-style-type: none"> <li>• identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul> <p><b>Key Scientific Skills:</b> Identifying and classifying Asking simple questions</p>	<p><b>Theme = CELEBRATIONS – Light &amp; Dark</b> Seasonal Changes Dark and Cold</p> <ul style="list-style-type: none"> <li>• observe changes across the four seasons</li> <li>• observe and describe weather associated with the seasons and how day length varies</li> </ul> <p><b>Key Scientific Skills:</b> Asking simple questions Gathering and recording data to help in answering questions</p>	<p><b>Theme = PAWS, CLAWS &amp; WHISKERS</b> Animals , including humans</p> <ul style="list-style-type: none"> <li>• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>• identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>• describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> </ul> <p><b>Key Scientific Skills:</b> Identifying and classifying Asking simple questions</p>	<p><b>Theme = SUPERHEROS</b> Seasonal Changes Light and Warmth</p> <ul style="list-style-type: none"> <li>• observe changes across the four seasons</li> <li>• observe and describe weather associated with the seasons and how day length varies</li> </ul> <p><b>Key Scientific Skills:</b> Asking simple questions Gathering and recording data to help in answering questions</p>	<p><b>Theme = TOYS</b> Plants</p> <ul style="list-style-type: none"> <li>• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>• identify and describe the basic structure of a variety of common flowering plants, including trees</li> </ul> <p><b>Key Scientific Skills:</b> Observing closely Gathering and recording data to help in answering questions</p>	<p><b>Theme = AROUND THE WORLD</b> Everyday materials</p> <ul style="list-style-type: none"> <li>• distinguish between an object and the material from which it is made</li> <li>• identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>• describe the simple physical properties of a variety of everyday materials</li> <li>• compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul> <p><b>Key Scientific Skills:</b> Identifying and classifying Performing simple tests Using their observations and ideas to answer simple questions</p>
Year 2	<p><b>Theme = HEALTHY ME!</b> Animals , including humans</p> <ul style="list-style-type: none"> <li>• notice that animals, including humans, have offspring which grow into adults</li> <li>• find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul> <p><b>Key Scientific Skills:</b> Asking simple questions Observing closely using simple equipment Identifying and classifying</p>	<p><b>Theme = MATERIALS MONSTER</b> Uses of everyday materials</p> <ul style="list-style-type: none"> <li>• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> </ul> <p><b>Key Scientific Skills:</b> Identifying and classifying Observing closely Performing simple tests Gathering and recording data to help in answering questions</p>	<p><b>Theme = MOVE IT</b> Uses of everyday materials</p> <ul style="list-style-type: none"> <li>• find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul> <p><b>Key Scientific Skills:</b> Identifying and classifying Observing closely Performing simple tests Gathering and recording data to help in answering questions</p>	<p><b>Theme = YOUNG GARDENERS</b> Plants</p> <ul style="list-style-type: none"> <li>• observe and describe how seeds and bulbs grow into mature plants</li> <li>• find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul> <p><b>Key Scientific Skills:</b> Asking simple questions Observing closely using simple equipment Performing simple tests</p>	<p><b>Theme = MINI WORLDS</b> Living things and their habitats</p> <ul style="list-style-type: none"> <li>• explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>• 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</li> <li>• identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>• 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</li> </ul> <p><b>Key Scientific Skills:</b> Asking simple questions Observing closely using simple equipment Identifying and classifying Gathering and recording data to help in answering questions</p>	<p><b>Theme = YOUNG MASTERCHEFS</b></p> <ul style="list-style-type: none"> <li>• Linked to Animals including humans objectives</li> <li>• Identify &amp; name different sources of food</li> </ul> <p><b>Key Scientific Skills:</b> Asking simple questions Observing closely using simple equipment Identifying and classifying</p>
Year 3	<p><b>Theme = FOOD &amp; OUR BODIES</b> Animals , including humans</p> <ul style="list-style-type: none"> <li>• identify that animals, including humans, need the right types and amount of nutrition, and that</li> </ul>	<p><b>Theme = OPPOSITE ATTRACT</b> Forces &amp; Magnets</p> <ul style="list-style-type: none"> <li>• compare how things move on different surfaces</li> </ul>	<p><b>Theme = EARTH ROCKS</b> Rocks</p> <ul style="list-style-type: none"> <li>• compare and group together different kinds of rocks on the basis of their appearance and</li> </ul>	<p><b>Theme = MIRROR, MIRROR</b> Light</p> <ul style="list-style-type: none"> <li>• recognise that they need light in order to see things and that</li> </ul>	<p><b>Theme = HOW DOES YOUR GARDEN GROW</b> Plants</p> <ul style="list-style-type: none"> <li>• identify and describe the functions of</li> </ul>	<p><b>Light</b></p> <ul style="list-style-type: none"> <li>• recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>• find patterns in the way that the size of</li> </ul>

	<p>they cannot make their own food; they get nutrition from what they eat</p> <ul style="list-style-type: none"> <li>identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul> <p><b>Key Scientific Skills:</b> Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<ul style="list-style-type: none"> <li>notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>observe how magnets attract or repel each other and attract some materials and not others</li> <li>compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>describe magnets as having two poles</li> <li>predict whether two magnets will attract or repel each other, depending on which poles are facing</li> </ul> <p><b>Key Scientific Skills:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Asking relevant questions and using different types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests</p>	<p>simple physical properties</p> <ul style="list-style-type: none"> <li>describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>recognise that soils are made from rocks and organic matter</li> </ul> <p><b>Key Scientific Skills:</b> Asking relevant questions and using different types of scientific enquiries to answer them Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Asking relevant questions and using different types of scientific enquiries to answer them</p>	<p>dark is the absence of light</p> <ul style="list-style-type: none"> <li>notice that light is reflected from surfaces</li> <li>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> </ul> <p><b>Key Scientific Skills:</b> Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment Using straightforward scientific evidence to answer questions or to support their findings</p>	<p>different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <ul style="list-style-type: none"> <li>explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>investigate the way in which water is transported within plants</li> <li>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul> <p><b>Key Scientific Skills:</b> Making systematic and careful observations Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>shadows change</p> <p><b>Key Scientific Skills:</b> Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment Using straightforward scientific evidence to answer questions or to support their findings</p>
<b>Year 4</b>	<p><b>Theme = WHAT'S THAT SOUND</b> <b>Sound</b></p> <ul style="list-style-type: none"> <li>identify how sounds are made, associating some of them with something vibrating</li> <li>recognise that vibrations from sounds travel through a medium to the ear</li> <li>find patterns between the pitch of a sound and features of the object that produced it</li> <li>find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>recognise that sounds get fainter as the distance from the sound source increases</li> </ul> <p><b>Key Scientific Skills:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p><b>Theme = IT'S ALIVE</b> <b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul> <p><b>Key Scientific Skills:</b> Asking relevant questions and using different types of scientific enquiries to answer them Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p><b>Theme = WHAT A STATE</b> <b>States of Matter</b></p> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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)</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul> <p><b>Key Scientific Skills:</b> Setting up simple practical enquiries, comparative and fair tests Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	<p><b>Theme = EAT IT</b> <b>Animals , including humans</b></p> <ul style="list-style-type: none"> <li>describe the simple functions of the basic parts of the digestive system in humans</li> <li>identify the different types of teeth in humans and their simple functions</li> <li>construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul> <p><b>Key Scientific Skills:</b> Asking relevant questions and using different types of scientific enquiries to answer them Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p><b>Theme = ELECTRICITY</b> <b>Electricity</b></p> <ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>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</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul> <p><b>Key Scientific Skills:</b> Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<p><b>Theme = BUBBLES</b> <b>States of Matter</b></p> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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)</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul> <p><b>Key Scientific Skills:</b> Setting up simple practical enquiries, comparative and fair tests Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>
<b>Year 5</b>	<p><b>Theme = OUT OF THIS WORLD</b> <b>Earth &amp; Space</b></p> <ul style="list-style-type: none"> <li>describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>describe the movement of the Moon relative to the Earth</li> <li>describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li> </ul> <p><b>Key Scientific Skills:</b> Planning different types of scientific enquiries to</p>	<p><b>Theme = CIRCLE OF LIFE</b> <b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>describe the life process of reproduction in some plants and animals</li> </ul> <p><b>Key Scientific Skills:</b> Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Planning different types of scientific enquiries to answer questions, including</p>	<p><b>Theme = GROWING UP &amp; GROWING OLD</b> <b>Animals , including humans</b></p> <ul style="list-style-type: none"> <li>describe the changes as humans develop to old age</li> </ul> <p><b>Key Scientific Skills:</b> Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p>	<p><b>Theme = MATERIAL WORLD</b> <b>Properties &amp; changes of materials</b></p> <ul style="list-style-type: none"> <li>compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</li> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the</li> </ul>	<p><b>Theme = LET'S GET MOVING</b> <b>Forces</b></p> <ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</li> </ul> <p><b>Key Scientific Skills:</b> Planning different types of scientific enquiries to answer questions, including recognising and</p>	

	<p>answer questions, including recognising and controlling variables where necessary</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p>	<p>recognising and controlling variables where necessary</p>		<p>action of acid on bicarbonate of soda</p> <p><b>Key Scientific Skills:</b> Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p>	<p>controlling variables where necessary</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p>
<b>Year 6</b>	<p><b>Theme = CLASSIFYING CRITTERS</b></p> <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>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</li> <li>give reasons for classifying plants and animals based on specific characteristics</li> </ul> <p><b>Key Scientific Skills:</b> Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p>	<p><b>Theme = ELECTRICITY</b></p> <p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>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</li> <li>use recognised symbols when representing a simple circuit in a diagram</li> </ul> <p><b>Key Scientific Skills:</b> Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Using test results to make predictions to set up further comparative and fair tests</p>	<p><b>Theme = HEALTHY BODIES</b></p> <p><b>Animals , including humans</b></p> <ul style="list-style-type: none"> <li>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>describe the ways in which nutrients and water are transported within animals, including humans</li> </ul> <p><b>Key Scientific Skills:</b> Identifying scientific evidence that has been used to support or refute ideas or arguments</p> <p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Using test results to make predictions to set up further comparative and fair tests</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p>	<p><b>Theme = DINOSAURS</b></p> <p><b>Evolution and inheritance</b></p> <ul style="list-style-type: none"> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul> <p><b>Key Scientific Skills:</b> Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	<p><b>Theme = LET THERE BE LIGHT</b></p> <p><b>Light</b></p> <ul style="list-style-type: none"> <li>recognise that light appears to travel in straight lines</li> <li>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</li> <li>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</li> <li>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul> <p><b>Key Scientific Skills:</b> Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p>