

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working scientifically	<ul style="list-style-type: none"> ☐ To talk about features of their own environment. ☐ To make observations of materials, their environment and the animals/plants in it. To talk about changes and explain why some things occur 	<ul style="list-style-type: none"> • To ask and answer simple questions about the knowledge being taught • To make observations, including using instruments • To perform simple tests • To classify and identify • To record data/information • To begin suggesting reasons for results in tests <p><i>*Not every aspect of the Working Scientifically requirements is expected in every area of study, but opportunities will be used when appropriate and often.</i></p>		<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To ask more relevant questions about the content being taught • To answer questions using comparative and fair tests • To be aware of variables and the need to control them • To make systematic observation and measurement, using measuring equipment and standard units • To present collected data to inform • Use charts and diagrams to explain concepts • To report findings from investigations • To draw conclusions from results, using scientific knowledge and vocabulary • To identify differences, similarities and changes to scientific ideas. <p><i>*Not every aspect of the Working Scientifically requirements is expected in every area of study, but opportunities will be used when appropriate and often.</i></p>		<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To plan their investigations and scientific enquiries • To increase the accuracy of measurement in investigations • To recognise and control variables independently • To use graphs, charts, flow diagrams, classification keys, tables and scatter graphs to represent information • To make predictions using test data and set up further comparative tests • To make conclusions, explaining causal relationships and comment on the reliability of a test's accuracy • To identify scientific evidence that has been used to support or refute ideas. <p><i>*Not every aspect of the Working Scientifically requirements is expected in every area of study, but opportunities will be used when appropriate and often.</i></p>	
Animals, including humans	<ul style="list-style-type: none"> ☐ To discern between plants and animals; naming some examples and suggesting differences. To know that all living things produce smaller versions of themselves and name some (eg: cat & kitten). ☐ To understand that living things grow and will die ☐ To know that living things and their environment need care 	<ul style="list-style-type: none"> • To identify and name a variety of common animals found in the conservation area • To identify and classify fish, amphibians, reptiles, birds and mammals. • To know what a carnivore/herbivore is and identify examples. • To describe the bodies of different animal classes (incl. pets) • To label basic parts of the human body and their function in relation to the senses. 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To know that animals need water, nutrition, shelter and oxygen to survive. • To know about how humans (and other animals) have offspring that grow to adults ad to describe the journey. • To know the importance of exercise, healthy diets and hygiene for humans. 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To know that animals cannot make their own food: they must find it themselves. • To begin to understand the structure and role of skeletons and muscles. 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To describe the function and structure of the human digestive system • To identify different types of teeth in humans and their function • To look at the dentition of other animals to deduce their diets (carnivore / herbivore) • Identify <i>producers, predators</i> and <i>prey</i> in a variety of food chains 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> ☐ To describe the processes of ageing in humans from infant to adult to old age 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To describe the structures and function of the human circulatory system, including: <i>heart, arteries, veins, blood vessels</i> and <i>blood</i> • To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • To describe the way that nutrients and water are transported within animals (including humans)
Living things and their habitats	<ul style="list-style-type: none"> ☐ To know the importance of good health ☐ To understand about healthy eating and exercise. ☐ To know about personal hygiene: teeth cleaning, toileting, dressing and knowing about washing hands. 		<ul style="list-style-type: none"> • To explore, classify and compare the differences between things that are living, dead, and things that have never been alive • To know why living things live in their particular habitats they are suited to and require • To understand that animals and plants in a habitat depend on each other in different ways. • To identify and name a some plants and animals in their habitats, including micro-habitats around Coleham • To understand and describe food relationships and 4step foodchains. 		<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To classify living things from the conservation area in different ways • To make classification keys for living things in the conservation area, as well as examples given from the wider world • To understand describe changes to environments that can harm or pose dangers to living things (Geography links with water conservation) 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To describe the life cycles of a mammal, amphibian, insect and a bird. • To show the life cycle of creatures found in the Coleham pond. • To describe reproduction in the trees found in the school grounds, humans, and another animal. 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> ☐ Understand about taxonomic classification of plants and animals in terms of observable characteristics and give reasons living things are grouped in that way

Plants		<ul style="list-style-type: none"> To identify common plants in the nature area To know the names and function of the structures of flowering plants (stem, petal, 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> To know about how and to observe plants growing from seeds and bulbs into mature plants. 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> To know and describe the functions of roots, stems/trunks, leaves and flowers 			
		<p>stamen, anther, pollen, trunk, roots, fruit, leaves)</p>	<ul style="list-style-type: none"> To explore the need for plants to have water, sunlight and suitable temperature to grow To begin to know about seed dispersal To know about photosynthesis 	<ul style="list-style-type: none"> To test the requirements of plants to have soil, light, water, and room to grow. To know about and test how water is transported in plants. To know about the lifecycle of plant in our conservation area: observe the ash trees. To understand the role of flowers, pollen, seeds and the processes they are involved in (pollination, germination, seed dispersal) 			
Materials	<ul style="list-style-type: none"> To identify some simple materials in their environment To discuss some physical properties/qualities of those materials. To know that some materials can be changed, describing the action and the change produced 	<ul style="list-style-type: none"> To distinguish between an object and the material from which it is made To compare and group a variety of everyday materials based their simple physical properties To describe some physical properties of a variety of everyday materials To identify and compare the uses of a variety of everyday materials, including <i>wood, metal, plastic, glass, brick, rock, paper and cardboard</i> for particular uses 	<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> To investigate the suitability of materials to perform a task, eg: paper for an umbrella. To explore how shapes of solid objects can be changed by quashing, twisting and bending. 			<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> To classify and compare a range of everyday materials based on the properties of: <i>conductivity (thermal and electrical), transparency, solubility and hardness.</i> To describe the process of dissolving and how to recover a dissolved substance. To understand the terms solution, soluble, dissolve, residue, evaporation, emulsion, mixture To use knowledge of the states of matter to explain how mixture of different materials may be separated To demonstrate that dissolving and mixing are reversible changes To know that some changes in materials form <i>new</i> materials and that is usually irreversible: <i>burning, acid+bicarb</i> 	

Forces and magnets				<ul style="list-style-type: none"> <input type="checkbox"/> To compare how different surfaces affect the movement of objects across them <input type="checkbox"/> To know that magnets don't need to touch to demonstrate their force To observe the properties and behaviour of magnet: repelling, attracting, magnetic/non-magnetic surfaces. <input type="checkbox"/> To know about magnetic polarity. 		<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To describe gravity as an invisible force that attracts mass towards the centre of the Earth • To identify the effects of <i>friction, air resistance</i> and <i>water resistance</i> on travelling objects. • To know the relationship between <i>surface area</i> and the size of the friction, air/water resistance force. • To know and demonstrate that lever and pulley systems can amplify or reduce a force 	
Light				<ul style="list-style-type: none"> <input type="checkbox"/> To know that light is visible energy. <input type="checkbox"/> To know about light sources (fire, electricity, the sun) To know that light is reflected of surfaces 			<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To know that light travels in straight lines • To understand the mechanics of how we see, including the
				<ul style="list-style-type: none"> <input type="checkbox"/> To understand how shadows are formed and how they change through the day To know about the dangers of light sources: the sun, lasers etc 			<p>anatomy of the human eye</p> <ul style="list-style-type: none"> • To know that visible light reflects of surfaces, allowing us to see them • To use their understanding of how light travels to explain why shadow have the same shape as the opaque object that causes them
Electricity					<ul style="list-style-type: none"> <input type="checkbox"/> To identify common appliances that run on electricity <input type="checkbox"/> To construct a simple series electrical circuit, identifying and naming its basic parts, including <i>cells, wires, bulbs, switches</i> and <i>buzzers</i> <input type="checkbox"/> To identify whether or not a circuit with missing parts will work and explain why <input type="checkbox"/> To recognise and demonstrate that a switch opens and closes a circuit <input type="checkbox"/> To recognise some common <i>conductors</i> and <i>insulators</i>, and associate metals with being good conductors. <input type="checkbox"/> To know about and to understand issues of safety around electricity: in the home/school, railways, sub-stations etc. 		<p><i>As previous years, and:</i></p> <ul style="list-style-type: none"> • To know that an increase in voltage or number of cells will affect a bulb's brightness / buzzer's volume • To compare and give reasons for variation in how component in a circuit function • To use recognised symbols when drawing circuit diagrams <p><i>LINKS TO D&T</i></p>
Earth and space						<ul style="list-style-type: none"> <input type="checkbox"/> To know the structure and basic mechanics of the Solar System <input type="checkbox"/> To know that the Sun and planets are roughly spherical <input type="checkbox"/> To know the planets in order <input type="checkbox"/> To know the relative sizes of Earth, Moon and Sun and the relative distances between them and other planets. 	

						<ul style="list-style-type: none"> <input type="checkbox"/> To describe the movement of the Earth, Sun and Moon relative to each other <input type="checkbox"/> To describe day / night and seasons in terms of the Earth's spin and axial tilt <input type="checkbox"/> To relate the Earth's lines of latitude and relative position with the Sun to explain climate zones on Earth (GEOGRAPHY) 	
Evolution and inheritance							<ul style="list-style-type: none"> • To recognise that living things have changed over long periods of time and that fossils provide evidence about living things of the past • To recognise that living things produce offspring of the same kind, but re individually different from their parents • To recognise, identify and describe how animals and
							<p>plants in the local environment and globally are suited to their environment</p> <ul style="list-style-type: none"> <input type="checkbox"/> To understand that adaptation leads to evolution over millions of years
Seasonal changes		<ul style="list-style-type: none"> <input type="checkbox"/> To know the four seasons and their order <input type="checkbox"/> To know the characteristics of the four seasons in the local environment <input type="checkbox"/> To observe and record the changes over the year 					
Rocks				<ul style="list-style-type: none"> <input type="checkbox"/> To classify rocks based on simple properties (eg: appearance) <input type="checkbox"/> To explore how the sandstone in the school building has weathered and suggest reasons for it <input type="checkbox"/> To know how fossils are formed and describe what they are <input type="checkbox"/> To know that soil is made from rock and organic matter. 			
States of matter					<ul style="list-style-type: none"> <input type="checkbox"/> To know about and identify solids, liquids and gasses <input type="checkbox"/> To understand the basic mechanics and physics of the three main states of matter 		

					<ul style="list-style-type: none"> <input type="checkbox"/> To observe that some materials can change their state after heating / cooling and know the terms: <i>melt, freeze, evaporate, condense</i> <input type="checkbox"/> To relate condensation and evaporation to the Water Cycle and link the rates to temperature (geography links) 		
Sound					<ul style="list-style-type: none"> <input type="checkbox"/> To identify how sounds are made and relate to vibration of atoms <input type="checkbox"/> To know that vibrations from sounds travel through a medium to the ear and that some materials transmit sounds better than others <input type="checkbox"/> To find patterns between pitch of sound and the features of the object making it <input type="checkbox"/> To find patterns between to volume of a sound and the vibrations' strength <input type="checkbox"/> To recognise that sounds grow fainter with distance from the source <input type="checkbox"/> To observe that sound travels slower than light 		