Coleham Primary School SCIENCE progression.

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working scientifically	• 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	• 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 **Not every aspect of the Working Scientifically requirements is expected in every area of study, but opportunities will be used when appropriate and often.*		*As previous years, and:* • 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. **Not every aspect of the Working Scientifically requirements is expected in every area of study, but opportunities will be used when appropriate and often.*		*As previous years, and:* • 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. **Not very aspect of the Working Scientifically requirements is expected in every area of study, but opportunities will be used when appropriate and often.*	
Animals, including humans	• 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 • 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.	• 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.	*As previous years, and:* • 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.	*As previous years, and:* • 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.	*As previous years, and:* • 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 *producers, predators* and *prey* in a variety of food chains	*As previous years, and:* • To describe the processes of ageing in humans from infant to adult to old age	*As previous years, and:* • To describe the structures and function of the human circulatory system, including: *heart, arteries, veins, blood vessels* and *blood* • 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			• 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 4-step foodchains.		*As previous years, and:* • 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)	*As previous years, and:* • 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.	*As previous years, and:* • Understand about taxonomic classification of plants and animals in terms of observable characteristics and give reasons living things are grouped in that way
Plants		• To identify common plants in the nature area • To know the names and function of the structures of flowering plants (stem, petal,	*As previous years, and:* • To know about how and to observe plants growing from seeds and bulbs into mature plants.	*As previous years, and:* • To know and describe the functions of roots, stems/trunks, leaves and flowers			

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		stamen, anther, pollen, trunk, roots, fruit, leaves)	• 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	• 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	• 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	• 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 *wood, metal, plastic, glass, brick, rock, paper* and *cardboard* for particular uses	*As previous years, and:* • 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.			*As previous years, and:* • To classify and compare a range of everyday materials based on the properties of: *conductivity (thermal and electrical), transparency, solubility* and *hardness.* • 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 *new* materials and that is usually irreversible: *burning, acid+bicarb*	
Forces and magnets				• To compare how different surfaces affect the movement of objects across them • 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. • To know about magnetic polarity.		*As previous years, and:* • To describe gravity as an invisible force that attracts mass towards the centre of the Earth • To identify the effects of *friction, air resistance* and *water resistance* on travelling objects. • To know the relationship between *surface area* 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				• To know that light is visible energy. • To know about light sources (fire, electricity, the sun) • To know that light is reflected of surfaces			*As previous years, and:* • To know that light travels in straight lines • To understand the mechanics of how we see, including the

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				• 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			anatomy of the human eye • 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					• To identify common appliances that run on electricity • To construct a simple series electrical circuit, identifying and naming its basic parts, including *cells, wires, bulbs, switches* and *buzzers* • To identify whether or not a circuit with missing parts will work and explain why • To recognise and demonstrate that a switch opens and closes a circuit • To recognise some common *conductors* and *insulators*, and associate metals with being good conductors. • To know about and to understand issues of safety around electricity: in the home/school, railways, sub-stations etc.		*As previous years, and:* • 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 *LINKS TO D&T*
Earth and space						• To know the structure and basic mechanics of the Solar System • To know that the Sun and planets are roughly spherical • To know the planets in order • To know the relative sizes of Earth, Moon and Sun and the relative distances between them and other planets. • To describe the movement of the Earth, Sun and Moon relative to each other • To describe day / night and seasons in terms of the Earth's spin and axial tilt • To relate the Earth's lines of latitude and relative position with the Sun to explain climate zones on Earth (GEOGRAPHY)	
Evolution and inheritance							• 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

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							• plants in the local environment and globally are suited to their environment • To understand that adaptation leads to evolution over millions of years
Seasonal changes		• To know the four seasons and their order • To know the characteristics of the four seasons in the local environment • To observe and record the changes over the year					
Rocks				• To classify rocks based on simple properties (eg: appearance) • To explore how the sandstone in the school building has weathered and suggest reasons for it • To know how fossils are formed and describe what they are • To know that soil is made from rock and organic matter.			
States of matter					• To know about and identify solids, liquids and gasses • To understand the basic mechanics and physics of the three main states of matter • To observe that some materials can change their state after heating / cooling and know the terms: *melt, freeze, evaporate, condense* • To relate condensation and evaporation to the Water Cycle and link the rates to temperature (geography links)		
Sound					• To identify how sounds are made and relate to vibration of atoms • To know that vibrations from sounds travel through a medium to the ear and that some materials transmit sounds better than others • To find patterns between pitch of sound and the features of the object making it • To find patterns between to volume of a sound and the vibrations' strength • To recognise that sounds grow fainter with distance from the source • To observe that sound travels slower than light		