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	Year 3	Year 4	Year 5	Year 6
	Plants			
Big Qs	***Why do plants have flowers?***			
Programme of Study	• *identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 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* • *investigate the way in which water is transported within plants* *explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.*			
Enquiry Types **Which will you do????**	***Classifying*** *• Classify flowers based on the children's own criteria. (This does not meet the curriculum objectives for this topic, but it is a good opening activity to assess prior knowledge.)* ***Observing over time*** *• Observe celery (with roots and leaves) in coloured water. • Observe white carnations (freshly cut) in coloured water. • Gather seeds and photographic evidence of blossoms/flowers and berries on a particular trail throughout the year.* ***Pattern seeking*** *• Investigate what*			

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	happens when conditions are changed e.g. more/less light/water, change in temperature, nutrients (Baby Bio vs other brands). ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Research the functions of the parts of flowering plants. • Research different methods of seed dispersal. • Research different methods of pollination.*			
Working Scientifically	• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions*		•	•
Animals Inc humans				
Big Qs	***Why do animals have skeletons?*** ***Why is a healthy diet so important?***	***What do our bodies do with food and water?***	***How do our bodies change?***	***How do the choices I make affect how my body works?*** ***Why does my heart beat?***

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Programme of Study	• *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.*	• *: 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.*	• *describe the changes as humans develop to old age.*	• *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 the ways in which nutrients and water are transported within animals, including humans.*
Enquiry Types **Which will you do????**	***Classifying*** *• Based on the children's own criteria: ▪ classify food items (leading to sorting by nutrients) ▪ classify animals (leading to sorting by whether or not they have skeletons).* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Children generate questions for investigation into objective 1 such as: ▪ Do 'healthy' drinks have less sugar? ▪ Does brown bread have more fibre? • Children generate questions for investigation into objective 2 such as: ▪ Do people with long arms throw further? ▪ Can people with short legs jump higher? ▪ Can people with longer legs run faster? ▪ Can people with bigger hands catch a ball more easily?* ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Look at food packaging to identify the amount of nutrients in different food items. • Research which types of food contain which nutrients. • Generate questions to research about the human skeleton.*	***Classifying*** *• Compare and contrast different types of teeth (linking to simple functions). • Classify jaw bones/teeth to aid with making food chains e.g. recognise what eats plants and what eats animals by looking at their teeth.* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Research the different parts of the digestive system. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.) • Research what different animals eat within a specific environment, e.g. coral, polar, African grasslands, in order to construct food chains.*	***Classifying*** *• Not relevant* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Develop questions to ask an expert e.g. a health visitor, doctor or nurse. (Questions will need to be filtered by the teacher.)*	***Classifying*** *• Not relevant* ***Observing over time*** *• Observe pulse rates before, during and after exercise.* ***Pattern seeking*** *• Children generate questions for investigation such as: ▪ Do older people have lower pulse rates? ▪ Do boys have higher pulse rates?* ***Comparative/Fair testing*** *• Complete different activities to compare the impact on their own heart rate.* ***Researching*** *• Generate questions to research about the human circulatory system. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.)*

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Working Scientifically	• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions*	• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions* • *(In addition in Year 4) I can identify differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.*	• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support*	• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support*
Light				
Big Qs	***What is a shadow?***			***Why does my shadow change during the day?***

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Programme of Study	• *recognise that they need light in order to see things and that dark is the absence of light* • *notice that light is reflected from surfaces* • *recognise that light from the sun can be dangerous and that there are ways to protect their eyes* • *recognise that shadows are formed when the light from a light source is blocked by an opaque object* • • *find patterns in the way that the size of shadows change.*			• *recognise that light appears to travel in straight lines* • *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* • *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* • *use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them*
Enquiry Types **Which will you do????**	***Classifying*** *• Based on the children's own criteria: ▪ classify light sources (leading to man-made/natural) ▪ classify materials (leading to reflective/non-reflective, transparent/translucent/opaque).* ***Observing over time*** *• Not relevant (NB Do not look at how shadows in the playground change throughout the day.)* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Test materials for reflectiveness. • Test materials for transparency. • Investigate shadows (size of shadows, shape of shadows).* ***Researching*** *• Not relevant*			***Classifying*** *• Not relevant* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Investigate the shape of shadows and link this to light travelling in straight lines.* ***Researching*** *• Not relevant*
Working Scientifically	• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams,*			• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific*

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	keys, bar charts, and tables . • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions*			*diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support*
Forces and Magnets				
Big QS	***How can we move magnets?***		***How and why do objects move?***	
Programme of Study	• *compare how things move on different surfaces* • *notice that some forces need contact between two objects, but magnetic forces can act at a distance* • *observe how magnets attract or repel each other and attract some materials and not others* • *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* • *describe magnets as having two poles* • *predict whether two magnets will attract or repel each other, depending on which poles are facing.*	•	• *explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object* • *identify the 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.*	

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Enquiry Types **Which will you do????**	***Classifying*** *• Based on the children's own criteria: ▪ sort materials (leading towards metal/non-metal and magnetic/not magnetic) ▪ sort toys (leading to what makes them move e.g. push/pull).* ***Observing over time*** *• Not relevant* ***Pattern seeking • Not relevant*** ***Comparative/Fair testing*** *• Test how objects move on different surfaces e.g. cars, spinning tops, wind-up/clockwork toys. • Test the strength of different magnets.* ***Researching*** *• Find out how magnets are used in everyday life*		***Classifying*** *• Not relevant* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Compare friction e.g. trainers or weighted matchbox pulled with force meter, balloon rockets, CD hovercraft, balloon cars. • Compare water resistance e.g. boats in a gutter of water, plasticine in a cylinder of liquid (easier with a more viscous liquid e.g. bubble bath). • Compare air resistance e.g. spinners, parachutes, sailing boats, straw rockets. • Compare levers, pulleys and gears – see illustrations below.* ***Research*** *--Heath Robinson and Rube Goldberg machines. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc. This could be cross-curricular with D&T and English biography writing.)*	
Working Scientifically	• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions*		• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair tests .* • *I can report and present findings from enquiries, including conclusions,*	

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			causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support	
Materials				
			How can we separate a mixture of water, iron filings, salt and sand? ***How can we change materials reversibly and irreversibly?***	
Programme of Study		*See States of Matter objectives for progression as closely linked to Properties of Materials*	• *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* • *know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution* • *use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating* • *give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic* • *demonstrate that dissolving, mixing and changes of state are*	

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			reversible changes • *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 action of acid on bicarbonate of soda.*	
Enquiry Types **Which will you do????**			***Classifying*** *• Based on the children's own criteria: ▪ classify the materials themselves e.g. samples of wood, metal, plastic, etc. ▪ after observing what happens when solids are added to liquids, classify materials based on the outcomes.* ***Observing over time*** *• Observe rusting with uncoated nails in different liquids. (This can be achieved by removing coating with sandpaper.)* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Which material would be good for a tent? • Which material would be good to make a tea bag from? • Which materials keep things warm/cold? • Which material would be good for a bag for different purposes?Test solids for solubility. • Compare rates of solubility. • Burn different materials (not plastic or toxic substances).* ***Researching*** *• Not relevant*	
Working Scientifically			• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels,*	

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			• *classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support*	
Living Things and Their habitats				
Big QS		***Are living things in danger?***	***Do plants and animals reproduce in the same way?***	***How can we sort living things?***
Programme of Study		• *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.*	• *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.*	• *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.*

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Enquiry Types **Which will you do????**		***Classifying*** *• Based on the children's own criteria: ▪ classify a number of living things in their local environment (plants and animals) ▪ classify a number of living things in the wider environment (plants and animals) after completing research ▪ introduce branching databases/dichotomous keys.* ***Observing over time*** *• Observe living things in their local environment at different times of the year.* ***Pattern seeking*** *• Do animals with …. have ….? • Do plants with …. have ….?* ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Research and be able to name plants and animals in the wider environment e.g. polar, desert, jungle, etc. • Research global environmental issues and their impact on living things.*	***Classifying*** *• Classify animals according to their life cycle* ***Observing over time*** *• Grow from cuttings and observe whether they grow roots/stem/ leaf/flower. • Grow from, and harvest, bulbs through the year. (Can be done in conjunction with Year 2.) • Observe strawberry/spider plants through the year.* ***Pattern seeking*** *• Children generate questions such as: ▪ Do larger mammals have longer gestation periods? ▪ Do larger animals live longer? ▪ Do smaller animals lay more eggs?* ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Generate questions to research the life cycle of a chosen animal: mammal, amphibian, insect, bird e.g. dragon fly, cuckoo, salmon, worm, owl. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.) • Research how gardeners asexually reproduce plants.*	***Classifying*** *• Classify animals according to Carl Linnaeus' system. • Classify plants into flowering, mosses, ferns and conifers, based on specific characteristics. • Create a branching database/dichotomous key to classify a set of living things.* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Research the characteristics of a vertebrate/invertebrate group. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.) • Research the characteristics of flowering plants, mosses, ferns and conifers. • Research the difference between bacteria, virus and fungi to give reasons why these are not plants or animals. • Research how microorganisms can be helpful or harmful. • Research unusual animals e.g. axolotl, platypus, kangaroos etc.*
Working Scientifically		• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results*	• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair*	• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair*

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		and conclusions • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions* • *(In addition in Year 4) I can identify differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.*	*tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support*	*tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support*
Sound				
Big Qs		***How can we make different sounds?***		
Programme of Study	•	• *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*		

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Enquiry Types **Which will you do????**		***Classifying*** *• Based on the children's own criteria, sort musical instruments.* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Measure volume from different instruments. • Measure how volume changes away from a source. • Investigate string telephones. • Explore pitch e.g. through a carousel of activities using milk bottles, straw pipes, rulers, elastic band guitars.* ***Researching*** *• Research, make and play their own instruments based on what they learned about pitch and volume.*		
Working Scientifically		• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions* • *(In addition in Year 4) I can identify differences, similarities or changes related to simple scientific*		

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		ideas and processes using straightforward scientific evidence to answer questions or to support their findings.		
Electricity				
Big Qs		***What can we do with Electricity?***		***Can we vary the effects of electricity?***
Programme of Study		• *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.*		• *: associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit* • *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* • *use recognised symbols when representing a simple circuit in a diagram.*
Enquiry Types **Which will you do????**		***Classifying*** *• Based on the children's own criteria, classify household appliances and/or toys (leading to electrical/not electrical, batteries/mains). • Test materials to classify into insulators and conductors.* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Not relevant*		***Classifying*** *• Not relevant* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Investigate the effect of adding more bulbs to a circuit. • Investigate the effect of adding more cells to a circuit. • Investigate the effect of adding more buzzers to a circuit. • Investigate the*

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		Comparative/Fair testing • *Not relevant* ***Researching*** • *Not relevant*		*effect of adding more motors to a circuit.* ***Researching*** • *Not relevant*
Working Scientifically		• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions* • *(In addition in Year 4) I can identify differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.*	•	• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support*
Earth and Space				
Big Qs			***What is moving in space and how does it affect us?***	

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Programme of Study			• *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.*	
Enquiry Types **Which will you do????**			***Classifying*** *• Not relevant* ***Observing over time*** *• Measure shadows throughout the day.* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Generate questions to research about the Earth and space. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.)*	
Working Scientifically			• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to*	

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			• *make predictions to set up further comparative and fair tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support*	
Rocks				
Big QS	***Are there different types of rocks and soil?***			
Programme of Study	• *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*			
Enquiry Types **Which will you do????**	***Classifying*** *• Based on the children's own criteria, classify rocks. (At the beginning of the topic, this will most likely focus on appearance, leading to physical properties at the end of the unit.)• Look at different soils and discuss how they are similar/different.* ***Observing over time*** *• Observe how soil separates into different layers in water –* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• Test the hardness of different rocks. • Test what happens when rocks are put in water. • Test how quickly water runs through different types of soil.*			

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	Researching *• Research how fossils are formed*			
Working Scientifically	• *I can ask relevant questions and use different types of scientific enquiries to answer them .* • *I can set up simple practical enquiries, comparative and fair tests.* • *I can gather, record, classify and present data in a variety of ways to help in answering questions.* • *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* • *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions*			
States of Matter				
		Where do ice cubes go when they disappear? ***Why does it rain and hail?***		
Programme of Study		• *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*	*Progression Links - Properties of Material Unit*	

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		degrees Celsius (°C) ● *identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.*		
Enquiry Types **Which will you do????**		***Classifying*** *• Based on the children's own criteria: ▪ classify solids (including grains, crystals, powders: physical properties) ▪ classify liquids.* ***Observing over time*** *• Watch ice melt (ice hands). • Watch handprints dry e.g. water hand prints on coloured paper towels. • Watch frozen liquids melt.* ***Pattern seeking*** *• Not relevant* ***Comparative/Fair testing*** *• What affects the melting rate of chocolate (size of pieces, temperature of water, type of chocolate)? • What affects the rate an 'ice pole' melts? • What affects the rate of evaporation? • Test the 'runniness' of liquids.* ***Researching*** *• Research the melting point of metals. • Research the water cycle. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.)*		
Working Scientifically		● *I can ask relevant questions and use different types of scientific enquiries to answer them .* ● *I can set up simple practical enquiries, comparative and fair tests.* ● *I can gather, record, classify and present data in a variety of ways to help in answering questions.* ● *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .*		

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		• *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* • *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions* • *(In addition in Year 4) I can identify differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.*		
Evolution				
Big QS				***What is evolution, how does it happen and how do scientists know?***
Programme of Study				• *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* • *identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.*

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Enquiry Types **Which will you do????**				***Classifying*** *• To show variation in a species: ▪ Classify a species of animal e.g. cats, dogs ▪ classify a species of plant e.g. daffodils, tulips, lilies.* ***Observing over time*** *• Not relevant* ***Pattern seeking*** *• Use different pieces of equipment, e.g. chopsticks, toothpicks, cutlery, to look for patterns linking the suitability of bird beaks for the available food e.g. rice, grapes, raisins.* ***Comparative/Fair testing*** *• Not relevant* ***Researching*** *• Research different types of a species and their characteristics making them suitable for different habitats e.g. penguins.*
Working Scientifically				• *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* • *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* • *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* • *I can use test results to make predictions to set up further comparative and fair tests .* • *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying*

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				scientific evidence that has been used to support
Working Scientifically (We need to see which topics these will be covered in so that we are ensuring coverage. Year groups will need to decide on this as we don't follow a scheme)	*These opportunities for working scientifically should be provided across years 3 and 4 so that the expectations in the programme of study can be met by the end of year 4. Pupils are not expected to cover each aspect for every area of study.* *National Curriculum:* *asking relevant questions and using different types of scientific enquiries to answer them 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 gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.* *https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study* *SKILLS:* *I can ask relevant questions and use different types of scientific enquiries to answer them .* *I can set up simple practical enquiries, comparative and fair tests.* *I can gather, record, classify and present data in a variety of ways to help in answering questions.* *I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables .* *I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions* *I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions* *(In addition in Year 4) I can identify differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.*		*These opportunities for working scientifically should be provided across years 5 and 6 so that the expectations in the programme of study can be met by the end of year 6. Pupils are not expected to cover each aspect for every area of study.* *National Curriculum:* *planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests 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 identifying scientific evidence that has been used to support or refute ideas or arguments.* *SKILLS:* *I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary .* *I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate .* *I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs .* *I can use test results to make predictions to set up further comparative and fair tests .* *I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments*	