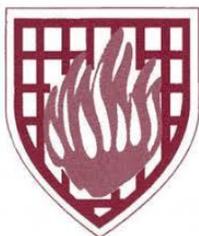




EYFS	Understanding the World	3 to 4 year olds	Communication and Language	Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
			Physical Development	Make healthy choices about food, drink, activity and tooth brushing.
			Understanding the World	<ul style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family's history. • Explore how things work. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice.
	Reception		Communication and Language	<ul style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to work out problems and organise thinking and activities. Explain how things work and why they might happen. • Use new vocabulary in different contexts.
			Physical Development	<ul style="list-style-type: none"> • Know and talk about the different factors that support their overall health and wellbeing: <ul style="list-style-type: none"> - regular physical activity - healthy eating - tooth brushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian
			Understanding the World	<ul style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel while they are outside.



2 Year Science Curriculum: Overview

	Cycle A 1	Cycle A 2	Cycle A 3	Cycle B 1	Cycle B 2	Cycle B 3
Year 1/2	Animals inc humans	Living things and habitats Pt1 Plants - identification	Everyday Materials	Animals inc humans	Plants -seeds and bulbs. Living things and habitats. Prt 2	What materials are used for
	Weather and Seasons - Spring and Summer			Weather and Seasons - Autumn and Winter		
Year 3/4	Rocks and Soils Forces	Light Why are humans animals too?	Plants	Living things and their habitats Digestive System	Sound	States of Matter Electricity.
Year 5/6	Earth and Space	LIVING THINGS AND THEIR HABITATS - FOCUS Life cycles and reproduction Y5 & Y5 ANIMALS INCLUDING HUMANS (1 OBJECTIVE)	Materials Forces	Classification (living things and habitat Y6) and Evolution &heritance	Electricity Light	Animals including humans

	2-Year cycle	Autumn Term	Spring Term	Summer Term
	Working Scientific ally	<ul style="list-style-type: none"> • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions. 		
Year 1/2	Cycle A	<p>All about me Animals including humans</p> <ul style="list-style-type: none"> • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense 	<p>Sensational Safari Living things and their habitats</p> <ul style="list-style-type: none"> • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including microhabitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. <p>Plants - identification</p> <ul style="list-style-type: none"> • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees 	<p>Rescuers and Explorers Everyday materials</p> <ul style="list-style-type: none"> • distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties

	<p>Seasonal Changes</p> <ul style="list-style-type: none"> observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies 		
<p>Cycle B</p>	<p>The Big Build Animals including humans</p> <ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene 	<p>Travel and Transport Plants - seeds and bulbs</p> <ul style="list-style-type: none"> observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and stay healthy <p>Living things and habitats</p> <ul style="list-style-type: none"> explore and compare the differences between things that are living, dead, and things that have never been alive identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plants and animals in their habitats, including microhabitats describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food 	<p>Under the Sea What materials are used for</p> <ul style="list-style-type: none"> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
	<p>Seasonal Changes</p> <ul style="list-style-type: none"> observe changes across the 4 seasons 		

		<ul style="list-style-type: none"> observe and describe weather associated with the seasons and how day length varies 		
Year 3/4	Working scientifically	<ul style="list-style-type: none"> 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. 		
	Cycle A	<p>Prehistoric Britain</p> <p>Rocks and soils</p> <ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock recognise that soils are made from rocks and organic matter. <p>Forces</p> <ul style="list-style-type: none"> 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 	<p>Around the world in 80 days</p> <p>Light</p> <ul style="list-style-type: none"> 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 <p>Why are humans animals too?</p> <ul style="list-style-type: none"> identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat identify that humans and some other animals have skeletons and muscles for support, protection and movement. 	<p>Look what they left behind</p> <p>Plants</p> <ul style="list-style-type: none"> 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.

		<ul style="list-style-type: none"> • predict whether two magnets will attract or repel each other, depending on which poles are facing. 		
	Cycle B	<p>A place for everything Living things and their habitats.</p> <ul style="list-style-type: none"> • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things. <p>Digestive system.</p> <ul style="list-style-type: none"> • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey. 	<p>Terrible Tudors Sound</p> <ul style="list-style-type: none"> • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases. 	<p>Amazing Amazon States of matter</p> <ul style="list-style-type: none"> • compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. <p>Electricity</p> <ul style="list-style-type: none"> • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit

				<ul style="list-style-type: none"> recognise some common conductors and insulators, and associate metals with being good conductors.
Year 5/6	Working Scientific ally	<ul style="list-style-type: none"> 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. 		
	Cycle A	Greeks and Stars Earth and Space <ul style="list-style-type: none"> describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth describe the Sun, Earth and Moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky 	Mountain and Rivers Living things and their habitats <ul style="list-style-type: none"> describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals describe the changes as humans develop to old age 	The Victorians Materials <ul style="list-style-type: none"> 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 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

				<p>with burning and the action of acid on bicarbonate of soda</p> <p>Forces</p> <ul style="list-style-type: none"> • 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.
	<p>Cycle B</p>	<p>War and Conflict Classification</p> <ul style="list-style-type: none"> • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics <p>Evolution</p> <ul style="list-style-type: none"> • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution 	<p>Angry Earth Electricity</p> <ul style="list-style-type: none"> • 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. <p>Light</p> <ul style="list-style-type: none"> • 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 	<p>Who's your Mummy Animals including humans</p> <ul style="list-style-type: none"> • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • describe the ways in which nutrients and water are transported within animals, including humans

			shadows have the same shape as the objects that cast them.	
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	Early years	Year 1 and 2	Year 3 and 4	Year 5 and 6
Animals Including Humans	<p>Explore the natural world around them.</p> <p>I can observe plants and animals</p> <p>Describe what they see, hear and feel whilst outside</p> <p>I can name and describe some plants and animals</p>	<p>I can identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates</p> <p>I can identify name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets) and describe how they are suited to their environment</p> <p>identify, name, draw and label the basic parts of the human body</p> <p>say which part of the body is associated with each sense.</p> <p>explain that animals including humans have offspring which grow into adults</p> <p>explain the basic needs of animals, including humans, for survival (which are water, food and air)</p> <p>describe the importance for humans of exercise and eating the right amounts of different types of food.</p>	<p>explain 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</p> <p>describe the ways in which nutrients, water and oxygen are transported within animals, including humans</p> <p>identify that humans and some animals have skeletons and muscles for support and movement.</p> <p>identify and name the basic parts of the digestive system in humans</p> <p>identify the simple functions of the teeth and different types of teeth in humans</p>	<p>Identify and name the basic parts and organs of the human circulatory and gaseous exchange systems, and explain their functions, including: - human circulatory system - the heart, blood vessels, blood, blood pressure and clotting - gaseous exchange system - lungs, nose, throat, bronchi, bronchial tubes, diaphragm, ribs and breathing.</p>

<p>Plants</p>	<p>Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things.</p>	<p>I can name a variety of common wild and garden plants. I can name the petals, stem, leaf and root of a plant. I can name the roots, trunk, branches and leaves of a tree. I can identify things that are living, dead and never lived. I can describe how a specific habitat provides for the basic needs of things living there (plants and animals). I can identify and name plants in a range of habitats. I can describe how seeds and bulbs grow into plants. I can describe what plants need in order to grow and stay healthy (water, light & suitable temperature).</p>	<p>I can describe the function of different parts of flowering plants and trees. I can explore and describe the needs of different plants for survival. I can explore and describe how water is transported within plants. I can describe the plant life cycle, especially the importance of flowers.</p>	<p>I can describe the process of reproduction in plants.</p>
<p>Materials</p>	<p>Talk about the differences between materials and changes they notice</p>	<p>I can distinguish between an object and the material it is made from. I can explain the materials that an object is made from. I can name wood, plastic, glass, metal, water and rock. I can describe the properties of everyday materials. I can group objects based on the materials they are made from. I can identify and name a range of materials including wood, metal, plastic, glass, brick, rock, paper and cardboard. I can suggest why a material might or might not be used for a specific job. I can explore how shapes can be changed by squashing, bending, twisting and stretching.</p>	<p>I can group materials based on their state of matter (solid, liquid, gas). I can describe how some materials can change state. I can explore how materials change state. I can measure the temperature at which materials change state. I can describe the water cycle. I can explain the part played by evaporation and condensation in the water cycle.</p>	<p>I can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets). I can describe how a material dissolves to form a solution; explaining the process of dissolving. I can describe and show how to recover a substance from a solution. I can describe how some materials can be separated. I can demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating). I know and can demonstrate that some changes are reversible and some are not. I can explain how some changes result in the formation of a new</p>

				<p>material and that this is usually irreversible.</p> <p>I can discuss reversible and irreversible changes.</p> <p>I can give evidenced reasons why materials should be used for specific purposes.</p>
Forces	Explore and talk about different forces they can feel.		<p>I can explore and describe how objects move on different surfaces.</p> <p>I can explain how some forces require contact and some do not, giving examples.</p> <p>I can explore and explain how objects attract and repel in relation to objects and other magnets.</p> <p>I can predict whether objects will be magnetic and carry out an enquiry to test this out.</p> <p>I can describe how magnets work.</p> <p>I can predict whether magnets will attract or repel and give a reason.</p>	<p>I can explain what gravity is and its impact on our lives.</p> <p>I can identify and explain the effect of air resistance.</p> <p>I can identify and explain the effect of water resistance.</p> <p>I can identify and explain the effect of friction.</p> <p>I can explain how levers, pulleys and gears allow a smaller force to have a greater effect.</p>
Electricity			<p>I can identify and name appliances that require electricity to function.</p> <p>I can construct a series circuit.</p> <p>I can identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers).</p> <p>I can draw a circuit diagram.</p> <p>I can predict and test whether a lamp will light within a circuit.</p> <p>I can describe the function of a switch in a circuit.</p> <p>I can describe the difference between a conductor and insulators; giving examples of each.</p>	<p>I can explain how the number & voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.</p> <p>I can compare and give reasons for why components work and do not work in a circuit.</p> <p>I can draw circuit diagrams using correct symbols.</p>
Light	<p>I know the difference between light and dark.</p> <p>Diwali link.</p> <p>I know that it's light in the day and dark at night.</p>		<p>I can describe what dark is (the absence of light).</p> <p>I can explain that light is needed in order to see.</p> <p>I can explain that light is reflected from a surface.</p>	<p>I can explain how light travels.</p> <p>I can explain and demonstrate how we see objects.</p> <p>I can explain why shadows have the same shape as the object that casts them.</p>

			<p>I can explain and demonstrate how a shadow is formed.</p> <p>I can explore shadow size and explain why shadows are sometimes bigger at different times of the day.</p> <p>I can explain the danger of direct sunlight and describe how to keep protected.</p>	<p>I can explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</p>
Seasons	<p>Understand the effect of changing seasons on the natural world around them.</p>	<p>I can name the seasons and suggest the type of weather in each season.</p> <p>I can observe and comment on changes in the seasons.</p>		
Rocks			<p>I can compare and group rocks based on their appearance and physical properties, giving a reason.</p> <p>I can describe how fossils are formed.</p> <p>I can describe how soil is made.</p> <p>I can describe and explain the difference between sedimentary and igneous rock.</p>	
Sound			<p>I can describe how sound is made.</p> <p>I can explain how sound travels from a source to our ears.</p> <p>I can explain the place of vibration in hearing.</p> <p>I can explore the correlation between pitch and the object producing a sound.</p> <p>I can explore the correlation between the volume of a sound and the strength of the vibrations that produced it.</p> <p>I can describe what happens to a sound as it travels away from its source.</p>	
Earth and space	<p>Awareness of day and night.</p> <p>I know the vocabulary of Earth, Sun and Moon.</p> <p>I know that some special people go to Space.</p>			<p>I can describe and explain the movement of the Earth and other planets relative to the Sun.</p> <p>I can describe and explain the movement of the Moon relative to the Earth.</p> <p>I can explain and demonstrate how night and day are created.</p>

				I can describe the Sun, Earth and Moon (using the term spherical).
Evolution and inheritance				<p>I can describe how the earth and living things have changed over time.</p> <p>I can explain how fossils can be used to find out about the past.</p> <p>I can explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents).</p> <p>I can explain how animals and plants are adapted to suit their environment.</p> <p>I can link adaptation over time to evolution.</p> <p>I can explain evolution.</p>

	Early Years	Year 1 and 2	Year 3 and 4	Year 5 and 6
Enquiry	I can understand and ask 'how' or 'why' questions.	<p>I can ask simple scientific questions.</p> <p>What jobs use this knowledge?</p>	<p>I can ask <u>relevant</u> scientific questions.</p> <p>Based on what I already know, what question am I going to ask?</p> <p>Where might I see this in the real world?</p> <p>How will I find out the answer to this?</p>	<p>I can ask relevant scientific questions based on the outcome of a test.</p> <p>Based on what I have found out, what might I ask now?</p> <p>Why would a scientist want to know this?</p> <p>How could this be useful in the real world?</p> <p>What is the best methodology to find the answer to this question?</p>
Prediction	I can say what I think will happen.	<p>I can say what I think will happen and can sometimes give a reason.</p> <p>What do you think will happen?</p>	<p>I can make a prediction <u>with</u> a reason.</p> <p>What do you think will happen?</p> <p>What knowledge do you have that makes you think this?</p>	I can use the outcome of an inquiry to make predictions for other tests (and can conduct these).

			<p>If these are my results so far, what might my next result be?</p>	<p>Based on what you already know, what do you think the outcomes will be? Do we always need to predict when we want to find something out? Can predictions impact the validity of the investigation? What influences a scientist's predictions?</p>
Methodology	<p>I can observe changes over a period of time.</p>	<p>I can use simple equipment to make observations e.g. magnifying glass.</p> <p>I can carry out simple tests (set up by the teacher).</p> <p>Why do I write my method down? Why do I need to keep this the same?</p>	<p>I can <u>set up a simple enquiry</u> (any type) to explore a scientific question. I can set up a fair test to compare two things. I can set up a fair test and explain why it is fair. I can make careful and accurate observations, including the use of standard units. Why does my method need to be accurately recorded? What do we need to do to make this test fair? What do we need to keep the same? What do we need to change?</p>	<p>I can <u>plan different types</u> of scientific enquiry. I can control variables in an enquiry and explain why these need to be controlled. Can I follow someone else's methodology to repeat the enquiry? What are the control variables? Why do I need to control them? What is the dependent variable? What is the independent variable? How many things can we change?</p>
Measuring	<p>I can notice simple patterns. I can compare using the language 'more' or 'less'</p>	<p>I can notice and talk about simple patterns and changes over time. Y1- cm and m Y2- cm/m, g/kg, °C, litres/ml. What are we measuring?</p>	<p>I can <u>use equipment</u>, including thermometers and data loggers to make measurements. I can make careful and accurate observations, including the use of <u>standard units</u>.</p>	<p>I can measure <u>accurately and precisely</u> using a range of equipment. Y5 and 6- m/cm/mm, kg/g and l/ml. Also to convert between metric and imperial</p>

		<p>What equipment will we use?</p> <p>Should I measure in cm or m?</p>	<p>Y3 and 4 m/cm/mm, kg/g and l/ml.</p> <p>What are we measuring?</p> <p>What is the best equipment to measure it?</p>	<p>units (including inches, pounds and pints).</p> <p>What is the most appropriate unit of measure?</p> <p>How can I ensure that my measurements are accurate?</p> <p>Can you repeat your measurements to check that they are accurate?</p> <p>Why to scientists repeat measurements?</p>
Classification	I can make groups.	<p>I can identify and classify things in different ways.</p> <p>How can you group these?</p> <p>Can you group these based on this property?</p>	<p>I can classify in different ways to answer scientific questions.</p> <p>Can you group these based on an observable property?</p> <p>Can you justify my groupings?</p> <p>How many different ways can I group these?</p> <p>Can you design a simple classification key to group these?</p> <p>What questions can you ask on your classification key?</p> <p>How would this key be useful to people?</p> <p>Who might use this key?</p>	<p>I can use and create classification keys based on my understanding.</p> <p>Can you design a classification key to group these based on their properties?</p> <p>Can you test your classification key?</p> <p>Can you evaluate the usefulness of your key?</p> <p>How can you adapt your key?</p> <p>How would this key be useful to scientists?</p> <p>How could these measurements be useful in the wider world?</p>
Presenting results	<p>I can show my results in pictures.</p> <p>I can verbalise my results.</p>	<p>I can show my results in pictures and words as well as verbalising them.</p> <p>Can you draw a picture to show your results?</p>	<p>I can present data in different ways to answer scientific questions.</p> <p>I can use diagrams, keys, bar charts and tables; using</p>	<p>I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>

		<p>Should we use a bar graph, pictogram or a tally chart to show our results? Why?</p>	<p>scientific language to present my results. I can use findings to report in different ways, including oral and written explanations and presentations. What is the best type of graph or table to show your results? Why?</p>	<p>I can report findings from enquiries in a range of ways. Is this discrete or continuous data? What is the best type of graph or table to show your results? Why? Are your results similar or dissimilar to other groups? How can you check whose results are likely to be correct?</p>
<p>Conclusions (analysing what results tell us)</p>	<p>I can attempt to explain why something happens. I can identify changes that I have observed.</p>	<p>I can suggest what I have found out. I can use simple data to answer questions I can notice and talk about simple patterns and changes over time. I can use my observations and ideas to suggest if I have answered the question or not. Can you explain what your results suggest? What might you do as a result of this? (Give children different scenarios and give advice to others e.g. where should the giant keep his beanstalk?)</p>	<p>I can use observations and knowledge to answer scientific questions. I can draw conclusions and suggest improvements. I can identify differences, similarities and changes related to an enquiry. What do the results suggest? How would this conclusion help in science or the wider world? How might people use these conclusions in their lives?</p>	<p>I can explain a conclusion from an enquiry. I can explain causal relationships in an enquiry. I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory. Are there any anomalies? Why might these anomalies have occurred? How might these outcomes be useful? How might these outcomes influence what people do in the future (scientists/other jobs)? What further investigations could you plan to test your conclusions? Is there a cause and effect link?</p>

				<p>Is this the reason that this happened? Does any scientific knowledge/research support/refute your conclusion?</p>
<p>Validity linked to methodology and conclusions</p>		<p>I can use my observations and ideas to suggest if I have answered the question or not. Has this answered your question?</p>	<p>I can suggest how an enquiry could have been improved with some understanding of reliability and validity shown. Have you measured what you wanted to measure? Have you measured accurately? Would you get the same results if you did it again or if someone else did it? What needs to stay the same? Why? If you did it again, what would you keep the same? Why? How could you make this investigation ever more accurate?</p>	<p>I can discuss ways in which my enquiry may have lacked reliability and/or validity and can suggest ways in which it could have been improved. I can repeat enquires to assess the reliability and validity of my enquiry. I can identify and suggest reasons for anomalies when I have evaluated my results. What variables do you need to control? How can you identify anomalies? What could have caused anomalies? Have you measured the independent variable? Have you measured the effect of the dependent variable? Why do we repeat measurements? What would make our results less/more valid? With the resources we had, what was difficult to control? With the resources we had, what was difficult to control?</p>

				<p>What would we need to make measurements more accurate?</p> <p>Are your results similar or dissimilar to other groups? What might this suggest?</p> <p>How can you check whose results are likely to be correct?</p>
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5 types of scientific enquiry and when to use them

- 1) **Pattern seeking** (all years but particularly EYFS and KS1)
Observing things that naturally happen, carrying out surveys or collecting data from secondary sources. You will need to identify patterns.
- 2) **Researching** (all years, particularly in topics where you can't conduct tests)
Gathering existing scientific research. This can include looking at how scientific understanding has changed e.g. our understanding of the universe.
- 3) **Fair testing** (all years but particularly KS2)
Measuring or observing the effect of changing one variable while controlling others.
- 4) **Observing over time** (all years but particularly EYFS and KS1)
Watching and recording how something changes over time.
- 5) **Identifying and classifying** (all year groups)
Identifying features that allow for things to be organised into select groups and giving those groupings names.