



Curriculum Map for Science

Biology

Chemistry

Physics

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Children know about similarities and differences in relation to places, objects , materials and living things . They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.					
EYFS - Nursery	Why do you love me so much? -Can the children talk about what they see in the mirror? -Do they look closely at similarities and differences between themselves and others? Why do leaves go crisp? -Do the children show an interest in observing changes over time? -Can they describe what they see happening?	Where does snow go? -Can the children talk about what happens as the ice melts? -Do they notice similarities and differences between the objects?	Do Dragons Exist?	Are eggs alive? -Do the children show an interest in aspects of the weather? -Can they use appropriate vocabulary to describe their observations?	Why can't I have Chocolate for Breakfast? -Do the children notice the different smells? -Can they talk about the similarities and differences between the smells?	How High Can I Jump? -Can the children talk about what happens when the balls are put in the water? -Do they notice similarities and differences between the balls?
	Visit - Snowdome		Visit - Wildside		Visitor - Asda	
	Typical Behaviours -Do they notice detailed features of objects in the environment? -Do the children talk about things they have observed eg. plants, animals natural and found objects? -Do the children talk about some of the things they have observed? -Do the children look closely at similarities & differences; patterns & changes? -Are the children developing an understanding of growth, decay & Changes over time? -Do children show concern for living things and the environment? -Do the children comment & ask questions about aspects of their familiar world, such as the place where they live or the natural world? -Do the children talk about why things happen or how things work?					

EYFS - Reception	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.					
	<p>Do you want to be friends?</p> <p>-Do the children know what the objects are?</p> <p>-Can the children say how the objects are the same or different?</p> <p>-Can the children explain how to use the objects?</p> <p>Why do squirrels hide their nuts?</p> <p>-Do the children look carefully at the acorns and leaves?</p> <p>-Do they know which tree they come from?</p> <p>-Can the children notice any similarities or differences between the size, shape or textures of the acorns and leaves?</p> <p>-Can the children name the different types of food?</p> <p>-Can they compare the foods and identify any similarities or differences?</p> <p>-Do the children take an interest in the route map?</p> <p>-Can they explain what is happening?</p> <p>-Can the children use the map's icons correctly?</p>	<p>Will you read me a story?</p>	<p>What happens when I fall to sleep?</p> <p>-Do the children know the names of the animals?</p> <p>-Can the children explain what 'nocturnal' means?</p> <p>-Can the children describe similarities and differences between the animals?</p> <p>-Can the children describe what happens when they look through the telescope or binoculars?</p> <p>-Can they use a turn wheel or similar to focus?</p> <p>-Do the children show an interest in using the toys?</p>	<p>Who lives in a rock pool?</p> <p>-Can the children name the objects?</p> <p>-Do the children sort things in different ways according to appropriate criteria?</p> <p>-Do the children explore the objects using their senses of touch and smell?</p> <p>-What are the children's reactions to the seafood?</p> <p>-Do they notice any similarities or differences?</p> <p>-Can the children name common features, such as eyes, mouth, shell, fins, scales and tail?</p> <p>-Do the children use their senses to explore the seaweed?</p> <p>-Can they describe what they can see, touch and smell?</p> <p>-Can the children describe how the samples of seaweed are the same or different?</p>	<p>Why do ladybirds have spots?</p> <p>-Are the children interested in the snails?</p> <p>-Do they ask questions about them?</p> <p>-Can they name the snail's body parts such as shell and tentacles?</p> <p>-Do the children show an interest in the worms' behaviour?</p> <p>-Do they handle the worms with care?</p> <p>-Can the children name different parts of the flowers?</p> <p>-Can they describe similarities or differences between the flowers?</p> <p>-Do the children experiment with the effects of magnification?</p> <p>-Are the children curious about what might happen?</p> <p>-Are they interested in the video footage?</p> <p>-Do the children comment on changes they see happening over time?</p>	<p>Are We There Yet?</p> <p>-Do the children show an interest in a particular type of vehicle?</p> <p>-Are they interested in how it works?</p> <p>-Can they say how the vehicles are the same or different?</p>
	Visit - Walk to West Park - Sense & Seasons			Visitor - Planetarium Visit - Sea Life Centre		Visitor - Animal Man- Mini Beasts
	<p>Typical Behaviours</p> <p>-Do the children talk about some of the things they have observed?</p> <p>-Do the children look closely at similarities & differences; patterns & changes?</p> <p>-Are the children developing an understanding of growth, decay & changes over time?</p> <p>-Do children show care and concern for living things and the environment?</p> <p>-Do the children comment & ask questions about aspects of their familiar world?</p> <p>-Do the children talk about why things happen or how things work?</p> <p>-Do children say how living things are the same and different?</p> <p>-Are children familiar with basic scientific concepts?</p> <p>-Do the children make observations about animals and plants?</p> <p>-Do the children talk about changes?</p> <p>-Do children explain why things happen?</p> <p>-Do children say how materials are the same and different?</p> <p>-Do children know the properties of some materials and can suggest some of the purposes they are used for?</p> <p>-Do children talk about features of their immediate environment?</p>					

	Focus Investigation Observing over time Working Scientifically I. Observing over time O. Observe, Identify, Classify & Group C. Compare, Explain, Use Scientific Vocab	➤ Visit – Wild Zoo	➤ Visit – Wildside	C Use Scientific Vocab	
KS1 – Year 2	Use of Everyday Materials "Materials Monster" (Muck, Mess & Mixtures) -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. Focus Investigation Fair Testing Working Scientifically I. Comparative Fair Test P. Simple predictions O. Identify, Classify & Group R. Presenting Data C. Analysis, Use Scientific Vocab	Animals Inc Humans "Healthy Me" -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. Focus Investigation Survey -Pattern Seeking, Working Scientifically I. Pattern Seeking, Collecting Data, Research O. Identify, Classify & Group R. Presenting Data C. Analysis, Use Scientific Vocab	Living Things & Their Habitats "Mini Worlds" (Wriggle & Crawl) -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 micro-habitats. -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. Focus Investigation Pattern Seeking, Classifying & Grouping Working Scientifically I. Pattern Seeking, Classifying & Grouping, Collecting Data, Research O. Identify, Classify & Group R. Presenting Data C. Pattern Seeking, Analysis, Use Scientific Vocab ➤ Visit – Baggeridge	Plants "The Apprentice Gardener" -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. Focus Investigation Fair Testing, Observation over time Working Scientifically I. Fair Testing, Observation over time, Collecting Data O. Accurate Observations over time R. Presenting Data C, Analysis, Use Scientific Vocab	

Biology		Chemistry		Physics	
Q. Asking Questions	I. Investigate & Research	P. Predict	O. Observe & Measure (inc. planning & resources)	R. Recording (inc. graphs)	C. Conclusion (inc patterns & analysis)

KS2 - Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
National Curriculum - KS2 The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions (P) . They should ask their own questions (Q) about what they observe (O) and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information (I) . They should draw simple conclusions and use some scientific language (C) , first, to talk about and, later, to write about what they have found out (R).						
	Light "Mirror Mirror" -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. Focus Investigation Pattern Seeking Working Scientifically I. Pattern Seeking, Collecting Data, Research	Rocks "Earth Rocks" (Tremors) -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. Focus Investigation Classifying & Grouping Working Scientifically Q. Suggest how to investigate an idea I. Classifying & Grouping, Pattern Seeking O. Make & record observations using	Forces & Magnets "Opposites Attract" (Mighty Metals) -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. Focus Investigation Fair Testing Working Scientifically Q. Suggest ideas for	Animals Inc Humans "Amazing Bodies" -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...balanced diet -Identify that humans and some animals have skeletons and muscles for support, protection and movement. Focus Investigation Pattern Seeking Working Scientifically I. Pattern Seeking, Research, Collecting data R. Labelled diagrams, charts & tables C. Compare, Conclude, Use Scientific Vocab	Plants "How does your Garden grow" -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. Focus Investigation Observation over Time Working Scientifically Q. Suggest how to investigate an idea I. Observation over Time, Collecting Data, Research O. Observing over time with explanations C. Use Scientific Vocab > Visit - Wildside Centre - Plants	

	<p>O. Identify, Classify & Group</p> <p>R. Present data</p> <p>C. Analysis of data for patterns, Use Scientific Vocab</p>	<p>appropriate equipment, Identify, Classify & Group</p> <p>R. Present data</p> <p>C. Compare, Use Scientific Vocab</p>	<p>testing</p> <p>I. Fair Testing</p> <p>P. Writing predictions</p> <p>O. Identify, Classify & Group, Observe</p> <p>R. Presenting Data in a table</p> <p>C. Compare, Conclude, Use Scientific Vocab</p>	<p>➤ Visitor – Animal Man – Predators</p>	
KS2 – Year 4	<p>Electricity "Power it Up"</p> <p>-Identify common appliances that run on electricity.</p> <p>-Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>-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.</p> <p>-Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>-Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Focus Investigation Pattern Seeking, Working Scientifically I. Pattern Seeking,</p>	<p>States of Matter "In a State" (Potions)</p> <p>-Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>-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)</p> <p>-Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Focus Investigation Pattern Seeking, Classifying & Grouping Working Scientifically Q. Questions to be fair tested I. Pattern Seeking, Classifying & Grouping Fair Testing, Research, Collecting Data O. Observe, Measure, Choose Equipment</p>	<p>Sound "Good Vibrations"</p> <p>-Identify how sounds are made, associating some of them with something vibrating</p> <p>-Recognise that vibrations from sounds travel through a medium to the ear</p> <p>-Find patterns between the pitch of a sound and features of the object that produced it</p> <p>-Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>-Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>Focus Investigation Observation over Time, Fair Testing Working Scientifically I. Observation over Time, Fair Testing, Research O. Observations over time R. Present data C. Analysis, Conclude, Use Scientific Vocab</p>	<p>Animals Inc Humans "Gnashers and Nosh" (Burps, Bottoms & Bile)</p> <p>-To describe the simple functions of the basic parts of the digestive system in humans.</p> <p>-To identify the different types of teeth in humans and their simple functions.</p> <p>-To construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>Focus Investigation Observation over Time, Fair Testing Working Scientifically I. Observation over Time, Fair Testing, Research O. Observations over time R. Present data C. Analysis, Conclude, Use Scientific Vocab</p>	<p>Living Things & Their Habitats "Human Impact" (Blue Abyss/Misty Mountain Sierra)</p> <p>-Recognise that living things can be grouped in a variety of ways.</p> <p>-Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>-Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Focus Investigation Grouping & Classifying, Survey Working Scientifically I. Grouping & Classifying, Pattern Seeking – Survey, Research, Collecting Data P. Writing predictions O. Observations over time R. Present data C. Analysis, Use Scientific Vocab</p> <p>➤ Visit – Wildside Centre – Living Things & their Habitat</p>

	Research, Collecting Data P. Making predictions O. Patterns from Observation, Identify, Classify Group R. Present data C. Analysis, Conclude, Use Scientific Vocab	R. Present data C. Analysis, Conclude, Use Scientific Vocab			
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Biology		Chemistry		Physics	
Q. Asking Questions	I. Investigate & Research	P. Predict	O. Observe & Measure (inc. planning & resources)	R. Recording (inc. graphs)	C. Conclusion (inc patterns & analysis)

KS2 - Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
National Curriculum - KS2 The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions (Q) about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict (P) how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources (I) of information. Pupils should draw conclusions (C) , based on their data and observations (O) , use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings (R) .						
	Earth & Space "Out of this World" (Stargazers) -To describe the movement of the Earth and other planets relative to the sun in the solar system. -To describe the movement of the moon relative to the Earth. -To describe the sun, Earth and moon as approximately spherical bodies. -To use the idea of the Earth's rotation to	Properties & Changes of Materials "Material World" -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	Living Things & Their Habitats "Circle of Life" (Frozen Kingdom) -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. Focus Investigation Pattern Seeking , Working Scientifically I. Pattern Seeking, Research	Forces "Let's Get Moving" (Scream Machine) -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. Focus Investigation Pattern Seeking Working Scientifically I. Pattern Seeking Research, Collecting Data		

	<p>explain day and night and the apparent movement of the sun across the sky.</p> <p>Focus Investigation</p> <p>Pattern Seeking ,</p> <p>Observing over Time</p> <p>Working Scientifically</p> <p>I. Pattern Seeking, Observing over Time</p> <p>Research, Collecting Data</p> <p>O. Observations over time</p> <p>R. Present data & Information</p> <p>C. Pattern Seeking, ,Analysis,</p> <p>➤ <i>Visitor - Planetarium</i></p>	<p>-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.</p> <p>Focus Investigation</p> <p>Fair Testing, Grouping & Classifying</p> <p>Working Scientifically</p> <p>I. Fair Testing, Grouping & Classifying</p> <p>Research, Collecting Data</p> <p>P. Make predictions for the investigation</p> <p>O. Identify, Classify & Group, Measure using appropriate equipment. Make repeated measurements</p> <p>R. Present data inc Bar Line Graphs</p> <p>C. Analysis, Conclusion, Use Scientific Vocab</p>	<p>R. Present Information</p> <p>C. Compare, Use Scientific Vocabulary</p>	<p>C. Pattern Seeking to Compare, Analysis, Use test results to draw conclusions, Use Scientific Vocab</p> <p>➤ <i>Visit - Drayton Manor Park - Forces</i></p> <p>Animals Inc Humans</p> <p>"Growing Pains"</p> <p>Describe the changes as humans develop to old age.</p> <p>Focus Investigation</p> <p>Pattern Seeking , Observing over Time</p> <p>Working Scientifically</p> <p>I. Pattern Seeking, Observing over Time</p> <p>Research, Collecting Data</p> <p>O. Observations over time</p> <p>R. Present data</p> <p>C. Pattern Seeking, Analysis,</p>	
KS2 - Year 6	<p>Living Things & Their Habitats</p> <p>"Classifying Critters"</p> <p>-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.</p> <p>-Give reasons for classifying plants and animals based on specific characteristics.</p> <p>Focus Investigation</p> <p>Grouping & Classifying</p> <p>Working Scientifically</p> <p>I. Pattern Seeking</p> <p>Research, Collecting Data</p>	<p>Electricity</p> <p>"Electrifying"</p> <p>-Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>-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.</p> <p>-Use recognised symbols when representing a simple circuit in a diagram.</p> <p>Focus Investigation</p> <p>Fair Testing</p> <p>Working Scientifically</p> <p>I. Fair Testing</p> <p>Research, Collecting Data</p>	<p>Light</p> <p>"Let it Shine"</p> <p>-Recognise that light appears to travel in straight lines</p> <p>-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</p> <p>-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</p> <p>-Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p>Focus Investigation</p> <p>Pattern Seeking</p>	<p>Animals Including Humans</p> <p>"Staying Alive"</p> <p>-Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood</p> <p>-Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>-Describe the ways in which nutrients and water are transported within animals, including humans.</p> <p>Focus Investigation</p> <p>Pattern Seeking</p> <p>Working Scientifically</p> <p>I. Pattern Seeking</p> <p>Research, Collecting Data</p>	<p>Evolution & Inheritance</p> <p>"We're Evolving"</p> <p>-Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago</p> <p>-Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>-Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>Focus Investigation</p> <p>Research</p> <p>Working Scientifically</p> <p>I. Pattern Seeking</p> <p>Research, Collecting Data</p> <p>O. Identify, Classify & Group</p> <p>R. Present data</p> <p>C. Pattern Seeking, Analysis, Use Scientific Vocab</p>

Covered in RSE

	<p>O. Identify, Classify & Group</p> <p>R. Present information</p> <p>C. Pattern Seeking, Analysis, Use Scientific Vocab</p>	<p>R. Present data</p> <p>C. Analysis, Use Scientific Vocab</p>	<p>Working Scientifically</p> <p>I. Pattern Seeking Research, Collecting Data</p> <p>O. Identify, Classify & Group, Observation over time</p> <p>R. Present data</p> <p>C. Pattern Seeking, Analysis, Use Scientific Vocab</p>	<p>O. Collecting data from observations</p> <p>R. Present data</p> <p>C. Pattern Seeking, Analysis, Use Scientific Vocab</p>	
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