



Highfield Primary School Progression Map 2023 - 2024

Subject: Science

Intent

At Highfield, our Science curriculum is designed to inspire pupils with a curiosity and fascination about the world around them. It will develop their scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. It will develop their scientific vocabulary which will enable children to talk about their methods and explain their findings and conclusions. The curriculum will motivate them to become effective communicators of scientific ideas, facts and data whilst enhancing their practical skills of scientific enquiry.

Implementation

Progression of Knowledge

	EYFS		KS1		KS2			
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Nursery children will be taught to/about:	In addition to knowledge taught in the Nursery, Reception children will be taught to/about:	In addition to EYFS knowledge, Year 1 children will be taught to/about:	In addition to EYFS and Year 1 knowledge, Year 2 children will be taught to/about:	In addition to KS1 knowledge, Year 3 children will be taught to/about:	In addition to KS1 and Year 3 knowledge, Year 4 children will be taught to/about:	In addition to KS1 and Lower KS2 knowledge, Year 5 children will be taught to/about:	In addition to KS1, Lower KS2 and Year 5 knowledge, Year 6 children will be taught to/about:
Scientific Enquiry	begin to talk about what they see, using a developing vocabulary begin to understand 'why' questions explore how things work	talk about what they see, using a wide vocabulary understand 'why' questions explore how things work and begin to discuss their findings	ask simple questions and recognise that they can be answered in different ways use simple equipment to observe closely perform simple tests	ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum use simple equipment to observe closely	Year 3 children will begin to: ask relevant questions and use different types of scientific enquiries to answer them set up simple practical enquiries,	Year 4 children will securely: ask relevant questions and use different types of scientific enquiries to answer them set up simple practical enquiries,	Year 5 children will begin to: plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary take measurements, using a range of	Year 6 children will securely: plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling

	<p>begin to ask questions to find out more and to check what has been said to them</p> <p>develop their ideas and thoughts into sentences</p> <p>begin to describe events in some detail</p> <p>begin to use talk to work out problems and organise thinking and activities</p> <p>begin to explain how things work and why they might happen</p> <p>begin to use new vocabulary in different contexts</p> <p>begin to make comments about what they have heard and ask questions to clarify their understanding</p>	<p>ask questions to find out more and to check what has been told to them</p> <p>begin to articulate their ideas and thoughts in well-formed sentences</p> <p>describe events with growing detail</p> <p>use talk to work out problems and organise thinking and activities</p> <p>explain how things work and why they might happen</p> <p>use new vocabulary in different contexts</p> <p>make comments about what they have heard and ask questions to clarify their understanding</p>	<p>identify and classify</p> <p>use observations and ideas to suggest answers to questions</p> <p>gather and record data to help in answering questions</p>	<p>including changes over time</p> <p>perform simple comparative tests</p> <p>identify, group and classify</p> <p>use observations and ideas to suggest answers to questions noticing similarities, differences and patterns</p> <p>gather and record data to help in answering questions including from secondary sources of information</p>	<p>comparative and fair tests</p> <p>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p> <p>gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>use results to draw simple conclusions, make predictions for</p>	<p>comparative and fair tests</p> <p>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p> <p>gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <p>use results to draw simple conclusions,</p>	<p>scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>use test results to make predictions to set up further comparative and fair tests</p> <p>report and present 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</p> <p>identify scientific evidence that has been used to support or refute ideas or arguments</p>	<p>variables where necessary</p> <p>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>use test results to make predictions to set up further comparative and fair tests</p> <p>report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and</p>
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					<p>new values, suggest improvements and raise further questions</p> <p>identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>use straightforward scientific evidence to answer questions or to support findings</p>	<p>make predictions for new values, suggest improvements and raise further questions</p> <p>identify differences, similarities or changes related to simple scientific ideas and processes</p> <p>use straightforward scientific evidence to answer questions or to support findings</p>		<p>written forms such as displays and other presentations</p> <p>describe and evaluate their own and other people's scientific ideas related to units in the National Curriculum (including ideas that have changed over time), using evidence from a range of sources</p> <p>group and classify things and recognise patterns</p>
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Animals including Humans (Biology)	<p>understand basic human needs and characteristics</p> <p>learn simple differences between animals and humans</p> <p>identify and role-play different adult and young human and animal characters</p> <p>recognise basic body parts and their uses</p> <p>understand basic hygiene practices</p>	<p>understand human body parts and their functions</p> <p>use books, pictures or real life observation to distinguish between different animals based on characteristics and habitats</p> <p>understand the importance of personal hygiene and healthy habits</p>	<p>identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>identify and 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 (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>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>	<p>notice that animals, including humans, have offspring which grow into adults</p> <p>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>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</p> <p>identify that humans and some other animals have skeletons and muscles for support, protection and movement</p>	<p>describe the simple functions of the basic parts of the digestive system in humans</p> <p>identify the different types of teeth in humans and their simple functions</p> <p>construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p>describe the changes as humans develop to old age</p>	<p>identify and name the main parts of the human circulatory system, and describe 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>

Plants (Biology)	<p>participate in simple activities like simple counting activities when planting seeds and caring for plants</p> <p>identify basic parts of a plant</p>	<p>identify the key features of the life cycle of plants and the need for water, light, and nutrients in plant growth</p>	<p>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>identify and describe the basic structure of a variety of common flowering plants, including trees</p>	<p>observe and describe how seeds and bulbs grow into mature plants</p> <p>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p>	<p>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>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</p> <p>investigate the way in which water is transported within plants</p> <p>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p>			
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<p>Living Things and their Habitats (Biology)</p>	<p>learn what a habitat is and experience diverse natural phenomena</p> <p>recognise that different animals live in different places</p>	<p>understand how different habitats meet the needs of the animals or plants living there</p> <p>identify changes in habitats across seasons</p>		<p>explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>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</p> <p>identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>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>		<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>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>describe the life process of reproduction in some plants and animals</p>	<p>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</p> <p>give reasons for classifying plants and animals based on specific characteristics</p>
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Evolution and Inheritance (Biology)								<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>
Seasonal Changes (Physics)	notice changes in the weather and seasons, experience different types of weather	<p>identify the cycle of seasons and how it affects the world around them</p> <p>describe different types of weather and how it changes</p>	<p>observe changes across the 4 seasons</p> <p>observe and describe weather associated with the seasons and how day length varies</p>					

Forces (Physics)	experience and observe simple forces e.g. pushing and pulling objects, playing with building blocks	explore the impact of different forces on objects e.g. floating and sinking, introduction to magnetism through play			<p>compare how things move on different surfaces</p> <p>notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</p> <p>observe how magnets attract or repel each other and attract some materials and not others</p> <p>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</p> <p>describe magnets as having 2 poles</p> <p>predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p>		<p>explain that unsupported objects fall towards the earth because of the force of gravity acting between the earth and the falling object</p> <p>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p>	
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<p>Light (Physics)</p>	<p>recognise the difference between light and dark</p> <p>notice light sources such as torches, light up toys and room lights</p> <p>notice shadows</p>	<p>understand how light interacts with different surfaces and explore the concept of shadows</p>			<p>recognise that they need light in order to see things and that dark is the absence of light</p> <p>notice that light is reflected from surfaces</p> <p>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>find patterns in the way that the size of shadows change</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>
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Sound (Physics)	<p>enjoy making sounds with their voice and different objects</p> <p>recognise loud and soft sounds</p> <p>pitch matching</p>	<p>understand how sounds can be changed and match sounds to their sources</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>		
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Earth and Space (Physics)							<p>describe the movement of the Earth and other planets relative to the Sun in the solar system</p> <p>describe the movement of the Moon relative to the Earth</p> <p>describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky</p>	
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Electricity (Physics)	problem solve, interact with and explore simple electrical toys	understand the safety aspects of using electricity know that batteries or electricity can make some toys and appliances work				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
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Materials (Chemistry)	sensory play to explore different materials and notice basic differences	<p>understand and describe the properties of different materials</p> <p>recognise changes in materials under different conditions</p> <p>select materials based on their properties</p> <p>observe simple changes of state e.g., ice melting</p>	<p>distinguish between an object and the material from which it is made</p> <p>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>describe the simple physical properties of a variety of everyday materials</p> <p>compare and group together a variety of everyday materials on the basis of their simple physical properties</p>	<p>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>recognise that soils are made from rocks and organic matter</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>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</p> <p>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>demonstrate that</p>	
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							<p>dissolving, mixing and changes of state are reversible changes</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>	
Scientists and Inventors			famous scientists and inventors linked to the Year 1 Science curriculum – focus on Mae Jemison, first African American woman to go into space	famous scientists and inventors linked to the Year 2 Science curriculum - focus on Tim Smit & Nicholas Grimshaw (Eden Project), Plants Unit	famous scientists and inventors linked to the Year 3 Science curriculum - Marie Curie and the use of X-rays	famous scientists and inventors linked to the Year 4 Science curriculum - Alexander Graham Bell, links to History (Victorians)	famous scientists and inventors linked to the Year 5 Science curriculum - Margaret Hamilton, Space Unit,	famous scientists and inventors linked to the Year 6 Science curriculum - Dr Daniel Hale Williams first successful heart surgeon and Marie Maynard Daly, first African American woman to receive a PHD in chemistry in the U.S.A, Animals including Humans (circulatory system)

Impact (End points)								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
By end of the Summer Term	Children in Nursery will be able to:	Children in Reception will be able to:	Children in Year 1 will be able to begin to:	Children in Year 2 will be able to:	Children in Year 3 will be able to begin to:	Children in Year 4 will be able to:	Children in Year 5 will be able to begin to:	Children in Year 6 will be able to:
	<ul style="list-style-type: none"> > understand 'why' questions > make healthy choices about food, drink, activity and tooth brushing > 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 	<ul style="list-style-type: none"> > 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 help work out problems and organise thinking and activities, and to explain how things work and why they might happen/ use new vocabulary in different contexts ELG: > make comments about what they have heard and ask questions to clarify their understanding > know and talk about the different factors that support their overall health and wellbeing (regular physical activity, healthy eating, tooth brushing, sensible amounts of 'screen 	<ul style="list-style-type: none"> > ask simple scientific questions/ use simple equipment to make observations/carry out simple tests/ identify and classify things/suggest what they have found out/ use simple data to answer questions > name a variety of common wild and garden plants/name the petals, stem, leaf and root of a plant/name the roots, trunk, branches and leaves of a tree > name a variety of animals including fish, amphibians, reptiles birds and mammals/classify and name animals by what they eat (carnivore, herbivore and omnivore)/sort 	<ul style="list-style-type: none"> > ask simple scientific questions/use simple equipment to make observations/carry out simple tests/ identify and classify things/suggest what they have found out/ use simple data to answer questions > identify things that are living, dead and never lived/describe how a specific habitat provides for the basic needs of things living there (plants and animals)/ identify and name plants and animals in a range of habitats/ match living things to their habit/describe how animals find their food, name some different sources of food for animals/explain a simple food chain 	<ul style="list-style-type: none"> > ask relevant scientific questions/ use observations and knowledge to answer scientific questions/set up a simple enquiry to explore a scientific question/set up a test to compare two things/ set up a fair test and explain why it is fair/ make careful and accurate observations, including the use of standard units/use equipment, including thermometers and data loggers to make measurements/ gather, record, classify and present data in different ways to answer scientific questions/ use diagrams, keys, bar charts and tables; using scientific language/use findings to report in different ways, 	<ul style="list-style-type: none"> > ask relevant scientific questions/ use observations and knowledge to answer scientific questions/ set up a simple enquiry to explore a scientific question/set up a test to compare two things/ set up a fair test and explain why it is fair/ make careful and accurate observations, including the use of standard units/use equipment, including thermometers and data loggers to make measurements/ gather, record, classify and present data in different ways to answer scientific questions/use diagrams, keys, bar charts and tables; using scientific language/use findings to report in different ways, 	<ul style="list-style-type: none"> > plan different types of scientific enquiry/ control variables in an enquiry/ measure accurate and precisely using a range of equipment/ record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs/use the outcome of test results to make predictions and set up a further comparative fair test/ report findings from enquiries in a range of ways/ explain a conclusion from an enquiry/ explain causal relationships in an enquiry/ relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or 	<ul style="list-style-type: none"> > plan different types of scientific enquiry/ control variables in an enquiry/ measure accurate and precisely using a range of equipment/ record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs/ use the outcome of test results to make predictions and set up a further comparative fair test/ report findings from enquiries in a range of ways/ explain a conclusion from an enquiry/ explain causal relationships in an enquiry/ relate the outcome from an enquiry to scientific

	<p>cycle of a plant and an animal</p> <p>> begin to understand the need to respect and care for the natural environment and all living things</p> <p>> explore and talk about different forces they can feel</p> <p>> talk about the differences between materials and changes they notice</p>	<p>time', having a good sleep routine, being a safe pedestrian)</p> <p>E.L.G.:</p> <p>> manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices</p> <p>> explore the natural world around them/ describe what they see, hear and feel while they are outside/ recognise some environments that are different to the one in which they live/ understand the effect of changing seasons on the natural world around them</p> <p>E.L.G.:</p> <p>> explore the natural world around them, making observations and drawing pictures of animals and plants</p> <p>> know some similarities and differences between the natural world</p>	<p>animals into categories (including fish, amphibians, reptiles, birds and mammals)/sort living and non-living things/name the parts of the human body that they can see/link the correct part of the human body to each sense</p> <p>> distinguish between an object and the material it is made from/explain the materials that an object is made from/name wood, plastic, glass, metal, water and rock describe the properties of everyday materials/ group objects based on the materials they are made from</p> <p>> observe and comment on changes in the seasons/name the seasons and suggest the type of weather in each season</p>	<p>> describe how seeds and bulbs grow into plants/ describe what plants need in order to grow and stay healthy (water, light & suitable temperature)</p> <p>> explain the basic stages in a life cycle for animals, including humans/describe what animals and humans need to survive/describe why exercise, a balanced diet and good hygiene are important for humans</p> <p>> identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard/ suggest why a material might or might not be used for a specific job/ explore how shapes can be changed by squashing, bending, twisting and stretching</p>	<p>including oral and written explanations, presentation/ draw conclusions and suggest improvements/make a prediction with a reason/ identify differences, similarities and changes related to an enquiry</p> <p>> describe the function of different parts of flowering plants and trees/ explore and describe the needs of different plants for survival/ explore and describe how water is transported within plants/ describe the plant life cycle, especially the importance of flowers</p> <p>> explain the importance of a protected nutritious, balanced diet/ explain how nutrients, water and oxygen are transported within animals and humans/ describe and explain the skeletal system</p>	<p>including oral and written explanations, presentation/ draw conclusions and suggest improvements/ make a prediction with a reason/ identify differences, similarities and changes related to an enquiry</p> <p>> group living things in different ways/ use classification keys to group, identify and name living things/ create classification keys to group, identify and name living things (for others to use)/ describe how changes to an environment could endanger living things</p> <p>> identify and name parts of the human digestive system/ describe the functions of the organs in the human digestive system/ identify and describe the different types of teeth in humans/</p>	<p>refutes an argument or theory/ read, spell and pronounce scientific vocabulary accurately</p> <p>> describe the life cycle of different living things, e.g. mammal, amphibian, insect bird/ describe the differences between different life cycles/ describe the process of reproduction in plants/ describe the process of reproduction in animals</p> <p>> create a timeline to indicate stages of growth in humans</p> <p>> can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets)/ describe how a material dissolves to form a solution; explaining the process of</p>	<p>knowledge in order to state whether evidence supports or refutes an argument or theory/ read, spell and pronounce scientific vocabulary accurately</p> <p>> classify living things into broad groups according to observable characteristics and based on similarities & differences/ describe how living things have been classified/ give reasons for classifying plants and animals in a specific way</p> <p>> identify and name the main parts of the human circulatory system/ describe the function of the heart, blood vessels and blood/ discuss the impact of diet, exercise, drugs and life style on health/ describe the ways in which</p>
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		<p>around them and contrasting environments, drawing on their experiences and what has been read in class</p> <p>> understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</p>	<p>> to discuss the scientific contributions and the impact that Mae Jemison has had on modern day science, in terms of both historical and cultural contexts</p>	<p>> to discuss the scientific contributions and the impact that Tim Smit and Nicholas Grimshaw have had on modern day science, in terms of both historical and cultural contexts</p>	<p>of a human/ describe and explain the muscular system of a human/ describe the purpose of the skeleton in humans and animals</p> <p>> compare and group rocks based on their appearance and physical properties, giving a reason/ describe how fossils are formed/ describe how soil is made/ describe and explain the difference between sedimentary and igneous rock</p> <p>> describe what dark is (the absence of light)/ explain that light is needed in order to see/ explain that light is reflected from a surface/ explain and demonstrate how a shadow is formed/ explore shadow size/ explain the danger of direct sunlight and describe how to keep protected</p>	<p>describe the functions of the different human teeth/use food chains to identify producers, predators and prey/construct food chains to identify producers, predators and prey</p> <p>> group materials based on their state of matter (solid, liquid, gas)/describe how some materials change state/ explore how materials change state/describe the water cycle/explain the part played by evaporation and condensation in the water cycle</p> <p>> describe how sound is made/ explain how sound travels from a source to our ears/ explain the place of vibration in hearing/ explore the correlation between pitch and the object producing a sound/ explore the correlation between the volume of a</p>	<p>dissolving / describe and show how to recover a substance from a solution/ describe how some materials can be separated/ demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating)/ know and can demonstrate that some changes are reversible and some are not/ explain how some changes result in the formation of a new material and that this is usually irreversible/discuss reversible and irreversible changes/ give evidenced reasons why materials should be used for specific purposes</p> <p>> describe and explain the movement of the Earth and other planets relative to the Sun/ describe and explain the movement of the Moon relative to the</p>	<p>nutrients and water are transported in animals, including humans</p> <p>> describe how the earth and living things have changed over time/ explain how fossils can be used to find out about the past/ explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents)/ explain how animals and plants are adapted to suit their environment/ link adaptation over time to evolution/ explain evolution</p> <p>> explain how light travels/ explain and demonstrate how we see objects/ explain why shadows have the same shape as the object that casts them/ explain how simple optical instruments work,</p>
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					<p>> explore and describe how objects move on different surfaces/ explain how some forces require contact and some do not, giving examples/ explore and explain how objects attract and repel in relation to objects and other magnets/ predict whether objects will be magnetic and carry out an enquiry to test this out/ describe how magnets work/ predict whether magnets will attract or repel and give a reason</p> <p>> to discuss the scientific contributions and the impact that Marie Curie has had on modern day science, in terms of both historical and cultural contexts</p>	<p>sound and the strength of the vibrations that produced it/ describe what happens to a sound as it travels away from its source</p> <p>> identify and name appliances that require electricity to function/ construct a series circuit/ identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers)/ draw a circuit diagram/ predict and test whether a lamp will light within a circuit/ describe the function of a switch in a circuit/ describe the difference between a conductor and insulators; giving examples of each</p>	<p>Earth/ explain and demonstrate how night and day are created/ describe the Sun, Earth and Moon (using the term spherical)</p> <p>> explain what gravity is and its impact on our lives/ identify and explain the effect of air resistance/ identify and explain the effect of water resistance/ identify and explain the effect of friction/ explain how levers, pulleys and gears allow a smaller force to have a greater effect</p> <p>> to discuss the scientific contributions and the impact that Margaret Hamilton has had on modern day science, in terms of both historical and cultural contexts</p>	<p>e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</p> <p>> explain how the number & voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer/ compare and give reasons for why components work and do not work in a circuit/ draw circuit diagrams using correct symbols</p> <p>> to discuss the scientific contributions and the impact that Dr. Daniel Hale and Marie Maynard Daly have had on modern day science, in terms of both historical and cultural contexts</p>
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