



Y5 Science overview 2022-23

Science Activity	Building Skills and Disciplinary Knowledge	Approaches to Developing Skills and Disciplinary Knowledge	Building Substantive Knowledge and Understanding	Approaches to Developing Substantive Knowledge and Understanding	Curricula Materials	Assessed through (T1 T2 T3)		
						Scientific Enquiry Planning & Presenting Critically Observing/ Classifying/ Evaluating Scientific Knowledge		
Scientific Enquiry	<ul style="list-style-type: none"> Can explore and talk about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically Can draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. 	<ul style="list-style-type: none"> Create a topic Mind Map: evidence recall of prior knowledge and skills; evidence short-term recall of learnt skills; evidence questions to explore Introduce and model practical activities involving skills of investigating, contrasting, analysing, recording Make observations Review of investigations against criteria Out of the classroom learning experiences to support enquiry 	<ul style="list-style-type: none"> Can describe the movement of the Earth, and other planets, relative to the sun in the solar system Can describe the Sun, Earth and Moon as approximately spherical bodies Can use the Earth's rotation to explain day and night and the apparent movement across the sky Children should learn that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune Can explain that unsupported objects fall towards the Earth because the force of gravity acting between the Earth and the falling object Can identify the effects of air resistance, water resistance and friction, that act between moving surfaces Can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have greater effect Can test and group materials based on scientific evidence (hardness, solubility, transparency, conductivity, insulation, magnesium) Can explain the process of dissolving Can recover a substance from a solution Can decide how a mixture would be best separated(filtering, sieving, evaporating) Can give reasons for the use of everyday materials based on scientific evidence Can use their knowledge to classify (solids, liquids, gasses) Can describe changes using scientific words (evaporation, condensation) Can use terms 'reversible' and 'irreversible' Can describe and compare the life cycles of a range of animals, including humans, amphibians, insects and birds Can describe the life cycles of common plants Can describe and explain the process of respiration in humans and plants Learn about the work of naturalists and animal behaviourist such as David Attenborough and Jane Goodall Can create a time line to indicate stages of growth in humans Can explain what puberty is 	<ul style="list-style-type: none"> Teacher led presentations Opportunities for research modelled by Teacher Opportunities for children to act upon their own curiosity and research their own questions and ideas Opportunities for group work and collaboration to research and investigate Research opportunities through home/school learning projects Planned opportunities for use of and access to varied resources School visits to places and organisations related to topic and learning Exploration opportunities for pupils to discover the methods that scientists use to answer questions; the different apparatus and techniques, including measurement that scientists use; the different data analysis used by scientists; and how science uses evidence to develop explanations 	<p>TERM1: Earth and Space Force</p>	<p>Most children will be able to... (working at)</p>	<p>Some children will not yet be able to... (working towards)</p>	<p>Some children are confidently able to... (exceeding)</p>
Planning and Presenting	<ul style="list-style-type: none"> Can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Can 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 Can identifying scientific evidence that has been used to support or refute ideas or arguments Can use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences 	<ul style="list-style-type: none"> Teacher led lessons demonstrating skills of investigating, recording, analysing Modelling use of scientific vocabulary in comparisons, contrasts, investigations Planned expectation for use of relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences Planned practical activities to engage children in above activities 	<ul style="list-style-type: none"> Observing changes over time Investigating habitats and environments Learning to compare and contrast Talking about what they have learnt and observed Recording data using a variety of formats 	<ul style="list-style-type: none"> Research opportunities through home/school learning projects Planned opportunities for use of and access to varied resources School visits to places and organisations related to topic and learning Exploration opportunities for pupils to discover the methods that scientists use to answer questions; the different apparatus and techniques, including measurement that scientists use; the different data analysis used by scientists; and how science uses evidence to develop explanations 	<p>TERM2: Properties of Materials Change of Materials</p>			
Critically Observing/ Classification/ Evaluating	<ul style="list-style-type: none"> Can take measurements using a range of scientific equipment with increasing accuracy Can record more complex data and results using scientific diagrams, classifications keys, tables, bar charts, line graphs and models Can decide which units of measurement they need Can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs 	<ul style="list-style-type: none"> Planned opportunities to observe, investigate and comment using scientific vocabulary based on topics and experiences Planned opportunities for children research their own line of enquiry through research and investigations Teach when and how secondary sources might help them to answer questions that cannot be answered through practical investigations 	<ul style="list-style-type: none"> Planned opportunities depending on topic such as deciding how to present findings via tally counting, graphs, and data analysis or measures 	<ul style="list-style-type: none"> Planned opportunities for use of and access to varied resources School visits to places and organisations related to topic and learning Exploration opportunities for pupils to discover the methods that scientists use to answer questions; the different apparatus and techniques, including measurement that scientists use; the different data analysis used by scientists; and how science uses evidence to develop explanations 	<p>TERM3: Animals including Humans Living things and their Habitats</p>			
Scientific Knowledge	<ul style="list-style-type: none"> Can read, spell and pronounce scientific vocabulary correctly. Can recognise that scientific ideas change and develop over time. can use test results to make predictions to set up further comparative and fair tests Can identifying scientific evidence that has been used to support or refute ideas or arguments 	<ul style="list-style-type: none"> Planned opportunities to observe, investigate and comment using scientific vocabulary based on topics and experiences Planned opportunities for children research their own line of enquiry through research and investigations Teach when and how secondary sources might help them to answer questions that cannot be answered through practical investigations 	<ul style="list-style-type: none"> Planned opportunities depending on topic such as deciding how to present findings via tally counting, graphs, and data analysis or measures 	<ul style="list-style-type: none"> Planned opportunities for use of and access to varied resources School visits to places and organisations related to topic and learning Exploration opportunities for pupils to discover the methods that scientists use to answer questions; the different apparatus and techniques, including measurement that scientists use; the different data analysis used by scientists; and how science uses evidence to develop explanations 	<p>TERM3: Animals including Humans Living things and their Habitats</p>			
Maths links	<ul style="list-style-type: none"> Can take accurate measurements using standard units, using a range of equipment , including thermometers Can accurately interpret these measurements Can Compare objects and size Can record more complex data and results using scientific diagrams, classifications keys, tables, bar charts, line graphs and models 	<ul style="list-style-type: none"> Planned opportunities depending on topic such as deciding how to present findings via tally counting, graphs, and data analysis or measures 	<ul style="list-style-type: none"> Planned opportunities depending on topic such as deciding how to present findings via tally counting, graphs, and data analysis or measures 	<ul style="list-style-type: none"> Planned opportunities for use of and access to varied resources School visits to places and organisations related to topic and learning Exploration opportunities for pupils to discover the methods that scientists use to answer questions; the different apparatus and techniques, including measurement that scientists use; the different data analysis used by scientists; and how science uses evidence to develop explanations 	<p>TERM3: Animals including Humans Living things and their Habitats</p>			
SMSC	<ul style="list-style-type: none"> Can work with others of different religious, ethnic and socioeconomic backgrounds, according to given briefs wider knowledge of Y5 science curriculum Can resolve conflicts and differing opinions should these arise Can reflect on choices Can investigate and offer views on ethical issues in topics studied Can show willingness to explore and understand scientific beliefs from a variety of cultural backgrounds <p>Can study science, and investigate with a team knowledge of the wider world, including interviewing with older people, archaeologists, and museum and exhibition personnel</p>	<ul style="list-style-type: none"> Plan visits, opportunities to investigate with a group or partner Plan visits in the local environment Visit Parks, Museums, laboratories 	<ul style="list-style-type: none"> Plan visits, opportunities to investigate with a group or partner Plan visits in the local environment Visit Parks, Museums, laboratories 	<ul style="list-style-type: none"> Planned opportunities for use of and access to varied resources School visits to places and organisations related to topic and learning Exploration opportunities for pupils to discover the methods that scientists use to answer questions; the different apparatus and techniques, including measurement that scientists use; the different data analysis used by scientists; and how science uses evidence to develop explanations 	<p>TERM3: Animals including Humans Living things and their Habitats</p>			