

Curriculum Progression of Skills – Science (Grid 1)

Skill domains:	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>EXPLORING / OBSERVING</p> <p><i>UKS2 - Developing a deeper understanding of a wide range of scientific ideas and encountering more abstract ideas.</i> <i>LKS2 - Developing their own ideas and their understanding of the world around them.</i> <i>KS1 - Observing closely Using their observations and ideas to suggest answers to questions.</i></p>	<ul style="list-style-type: none"> • <u>Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed.</u> • Use observations to make suggestions and/or ask questions. • <u>Look / observe closely and communicate changes over time.</u> • <u>Look / observe closely and communicate the features or properties of things in the real world.</u> • <u>Observe closely using their senses.</u> 	<ul style="list-style-type: none"> • <u>Use simple scientific language from the Y2 PoS to talk about / record what they have noticed.</u> • Use observations to make suggestions and/or ask questions. • <u>Observe and describe simple processes/cycles/changes with several steps (e.g. growth cycle, simple food chain, saying how living things depend on one another).</u> • <u>Observe closely and communicate with increasing accuracy</u> the features or properties of things in the real world. 	<ul style="list-style-type: none"> • <u>Observe and record relationships between structure and function (linked to Y3 PoS).</u> • Observe and record changes /stages over time (linked to Y3 PoS). • Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see ‘Communicating’ section also re links to vocabulary. 	<ul style="list-style-type: none"> • Suggest their own ideas on a concept and compare these with what they observe / find out. • Use observations to suggest what to do next. • <u>Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary</u> (from Y4 PoS). • <u>Observe and record relationships between structure and function or between different parts of a processes</u>(linked to Y4 PoS). • <u>Observe and record changes /stages over time</u> (linked to Y4 PoS). 	<ul style="list-style-type: none"> • Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstract ideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). • <u>Evaluate their observations and suggest a further test, offer another question or make a prediction.</u> • <u>Observe (including changes over time) and suggest a reason for what they notice.</u> 	<ul style="list-style-type: none"> • <u>Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS).</u> • <u>Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world.</u> • Explore more abstract systems / functions /changes / behaviours and record their understanding of these (e.g. the relationship between diet, exercise, drugs, lifestyle and health; evolutionary changes; how light travels).
<p>GROUPING AND CLASSIFYING</p> <p><i>UKS2 - Compare and contrast a variety of examples linked to UKS2 PoS.</i> <i>LKS2 - Compare and contrast a variety of examples linked to LKS2 PoS.</i> <i>KS1 - Compare and contrast a variety of examples linked to KS1 PoS.</i></p>	<ul style="list-style-type: none"> • <u>Name/identify common examples and some common features.</u> • With help, decide how to sort and group objects, materials or living things. • <u>Name basic features</u> of objects, materials and living things. • <u>Say how things are similar or different.</u> • <u>Compare and contrast simple observable features / characteristics</u> of objects, materials and living things. 	<ul style="list-style-type: none"> • <u>Name / identify common examples, some common features or different uses.</u> • <u>Sort and group objects, materials or living things by observable and/or behavioural features.</u> • <u>Compare and contrast...</u> a variety of things [objects, materials or living things] - focusing on the similarities as well as the differences. 	<ul style="list-style-type: none"> • <u>Decide ways and give reasons for sorting, grouping, classifying, identifying things/objects, living things, processes or events based on specific characteristics.</u> • <u>Compare and contrast and begin to consider the relationships between different things</u> • (e.g. structures of plants, functions of plant parts, diets, skeletons of humans and other animals, changes over time, etc.). • Record similarities as well as differences (e.g. what do all skeletons have? as well as the differences between skeletons). 	<ul style="list-style-type: none"> • <u>Make a simple guide to local living things.</u> • <u>Use guides or simple keys to classify / identify [animals, flowering plants and non-flowering plants].</u> • Use their observations to identify and classify. • <u>Begin to give reasons for these similarities and differences.</u> • Record similarities as well as differences and/or changes related to simple scientific ideas or processes or more complex groups of objects/living things/events (e.g. evaporation and condensation, different food chains, different electrical circuits). 	<ul style="list-style-type: none"> • <u>Suggest reasons for similarities and differences.</u> • Compare and contrast things beyond their locality and use these similarities and differences to help to classify (e.g. features of animals, life cycles of different living things, melting compared with dissolving, etc). • Use secondary sources of information to identify and classify. • <u>Decide which sources of information (and/or equipment and/or test) to help identify and classify.</u> 	<ul style="list-style-type: none"> • Recognise the importance of classification to the scientific world and form a conclusion from their sorting and classifying. • Compare and contrast more complex processes, systems, functions (e.g. sexual and asexual reproduction). • <u>Construct a classification key / branching database using more than two items.</u> • <u>Compare and contrast things beyond their locality and discuss advantages/disadvantages, pros/cons of the similarities and differences.</u> • Use <i>research</i> *to identify and classify things. • Use classification systems, keys and other information records [databases] to help classify or identify things.

Curriculum Progression of Skills – Science (Grid 1)

<p>QUESTIONING</p> <p><i>UKS2 - Asking their own questions about scientific phenomena. LKS2 - Asking relevant questions. KS1 - Asking simple questions.</i></p>	<ul style="list-style-type: none"> • <u>Ask simple questions about what they notice about the world around them.</u> • <u>Demonstrate curiosity by the questions they ask.</u> 	<ul style="list-style-type: none"> • <u>Raise their own logical questions based on or linked to things they have observed.</u> • With help / scaffolds, begin to ask questions such as ‘What will happen if...?’ 	<ul style="list-style-type: none"> • Explore their own ideas about ‘what if...?’ scenarios e.g. humans did not have skeletons. • Ask questions such as ‘What if we tried...?’ or ‘What if we changed...?’ • <u>Begin to understand that some questions can be tested in the classroom and some cannot.</u> • Within a group suggest questions that can be explored, observed, tested or investigated further. • <u>Within a group suggest relevant questions</u> about what they observe and about the world around them. 	<ul style="list-style-type: none"> • <u>Ask/raise their own relevant questions with increasing confidence and independence that can be explored, observed, tested or investigated further.</u> • Ask questions such as ‘What will happen if...?’ or ‘What if we changed...?’ (linked with Y4 PoS). • <u>Choose/select a relevant question that can be answered [by research or experiment / test].</u> 	<ul style="list-style-type: none"> • Recognise scientific questions that do not yet have definitive answers (linked to Y5 PoS). • Refine a scientific question so that it can be tested e.g. ‘What would happen to... if we changed...?’ • Decide whether their questions can be answered by researching or by testing. • <u>Independently ask their own scientific questions taking some ownership for finding out the answers.</u> 	<ul style="list-style-type: none"> • <u>Recognise scientific questions that do not yet have definitive answers</u> (linked to Y6 PoS). • <u>Refine a scientific question to make it testable</u> • i.e. ask a testable question which includes the change and measure variables, e.g. <i>what would happen to...if we changed...?</i> • e.g. <i>What effect would we have on ... if we...?</i> • e.g. <i>How would exercise affect the pulse rate?</i> • Use observations to suggest a further (testable or research) question. • <u>Independently ask a variety of scientific questions and decide the type of enquiry needed to answer them.</u>
<p>RESEARCH</p> <p><i>UKS2 – Summarise research from a wide variety of sources and recognising that scientific ideas change and develop over time. LKS2 - Finding things out using a wide range of secondary sources of information. KS1 - Finding things out using secondary sources of information.</i></p>	<ul style="list-style-type: none"> • Ask people questions (e.g. an expert or hot-seating). • <u>Use simple primary and secondary sources</u> (such as objects, books and photographs) to find things out. 	<ul style="list-style-type: none"> • Talk about how useful the information source was and express opinion about findings. • Make suggestions about who to ask or where to look for information. • Ask people questions to help them answer their questions. • <u>Use simple and appropriate secondary sources (such as books, photographs, videos and other technology) to find things out / find answers.</u> 	<ul style="list-style-type: none"> • <u>Find things out using a range of secondary sources of information</u>(e.g. books, photographs, videos and other technology). 	<ul style="list-style-type: none"> • <u>Make decisions about which information to use from a wide range of sources and make decisions about how to present their research.</u> • Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. 	<ul style="list-style-type: none"> • <u>Find out how scientific ideas have changed/developed over time</u> (linked to Y5 PoS). • <u>Articulate and explain findings from their research using scientific knowledge and understanding.</u> • Make decisions about which information to use from a wide range of sources. 	<ul style="list-style-type: none"> • <u>Research how scientific ideas have developed over time and had an impact on our lives.</u> • Use evidence from a variety of sources to justify their ideas • Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. • Interview people to find out information
<p>MODELLING</p> <p><i>Non Statutory Using dance, drama or a visual aid to represent science in the real world.</i></p>	<ul style="list-style-type: none"> • With help, follow movements (dance / drama) to act out their science. 	<ul style="list-style-type: none"> • Act out something to represent something else about the world around us (e.g. a life cycle). 	<ul style="list-style-type: none"> • Act out or make a model of something to represent something in the real world using appropriate scientific vocabulary verbally. 	<ul style="list-style-type: none"> • Make a visual representation or a model of something to represent something they have seen or a process that is difficult to see. • Suggest their own ideas on a concept and compare these with models or images. 	<ul style="list-style-type: none"> • Perform / create simple models to exemplify scientific ideas using scientific terminology where appropriate (e.g. spheres to represent movements of the Sun and Earth, solar system models, shadow clocks, a simple lever or mechanism). 	<ul style="list-style-type: none"> • Make / perform and use their own versions of simple models to describe and explain scientific ideas (e.g. circulatory system drama, periscopes to explain how light travels, burglar alarm to explain components in a circuit).

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<p>COLLABORATING</p> <p><i>Non Statutory Interacting effectively as part of a group.</i></p>	<ul style="list-style-type: none"> • Share ideas in a group and listen to the ideas of others. • Work with others on a science task. 	<ul style="list-style-type: none"> • Share ideas in a group and listen to the ideas of others. • Work cooperatively with others on a science task making some choices. 	<ul style="list-style-type: none"> • Begin to make some decisions about an idea within a group from a list of choices • (e.g. <i>let's put them all in a pile first OR I think we should try...</i>). • With help; support, listen to and acknowledge others in the group • (e.g. <i>Yes. I prefer that one too</i>). • Build on / add to someone else's idea. (e.g. <i>we could use x as well as y</i>). • Begin to understand that it is okay to disagree with their peers and offer a reason for their opinion. 	<ul style="list-style-type: none"> • Make some decisions about an idea within a group (e.g. <i>I think we should find out by testing...</i>) • Increasingly support, listen to and acknowledge others in the group. • Build on / add to someone else's idea to improve a plan. • Understand that it is okay to disagree with their peers and offer reasons for their opinion. 	<ul style="list-style-type: none"> • Propose their own ideas and make decisions with agreement in a group. • Support, listen to and acknowledge others in the group e.g. <i>Yes. I prefer that one too</i>. • Check the clarity of each other's suggestions e.g. <i>are you saying you think this one is a herbivore?</i> • Build on / add to someone else's idea to improve a plan or suggestion. • Understand that it is okay to disagree with their peers and offer a reasons for their opinion. 	<ul style="list-style-type: none"> • Propose their own ideas and make decisions with agreement in a group. • Support, listen to and acknowledge others in the group. • Check the clarity of each other's suggestions. • Build on / add to someone else's idea to improve a plan or suggestion. • Understand that it is okay to disagree with their peers and offer reasons for their opinion.
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