Science Year 5	
Working Scientifically	• Plan different types of scientific enquiries to answer questions, inc. 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, inc. conclusions, casual 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
Light	• 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 shadows have the same shape as the objects that cast them
Properties and change of materials	• Compare and group together everyday materials on the basis of their properties inc. 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, inc. through filtering, sieving and evaporating • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, inc. wood, metals and plastics • Demonstrate that dissolving, mixing and changing 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, inc. changes associated with burning and the acid on bicarbonate of soda

Earth and Space	• 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
Forces	• Explain that unsupported objects fall towards the Earth because of the force of gravity 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, inc. levers, pulleys and gears, allow a smaller force to have a greater effect
Scientific Vocabulary	Related Vocabulary
Greater Depth:	• CT2 – Children are able to set up comparative fair tests to be open to alternative perspectives, **they can explain different ways to settle matters with scepticism until critical examination is complete.** • CO 3- Pupils independently critique within a group to shape next steps in the collaborative activities, starting to justify ideas • **C3- Pupils (in collaborative groups) critically examine varied scientific viewpoints before formulating a group response** • CT 4 - C1 & C2 - Children are able to make connections **using non-examples giving detailed explanations and justifications** (with multi-disciplinary links). Pupils **infer and make deductions to begin to unpick the 'create' and 'evaluate' thought process criteria in BLOOMS (teacher supported)** • **CT 3 – Pupils are able to rank/prioritise scientific ideas in terms of importance/significance and this enables them to prioritise actions** • CT 5 - Children use a **wide** range of evidence to critically reflect on research/ given information. They collaborate with peers/ small group to formulate next steps/ break down tasks into parts and adapt/change work with a critical eye, potentially changing the direction of learning if required (teacher modelled)

	• CO 2 - Pupils are independently (**in larger groups)** using internalised modelled peer tutoring methods **to shape collaborative work** (pupil reciprocal teaching) • CO 3 - Pupils are further developing the ability to critique themselves as a scientific learner, in **a group** using an internalised format **to shape next steps in collaborative work** • **CO 5 – Collaborative group starting to set succinct goals before they commence 5 TEAM ROLE allocated workload, taking account of all viewpoints and collaborator's needs** • CO 6 - Children feedback their scientific learning and understanding in a variety of group roles within a 'jigsaw classroom' format. **They critique their performance as a collective and collaboratively allocate their group roles** • CT1 – Children further develop their ability to summarise their learning in a succinct way (**independently** mapped thought process) • C6 – Children connect learning linking to wider global issues (equitable, sustainable and inclusion topics) **and formulate new ideas/solutions to tackle these global issues** • C4 – Starting to connect patterns and scientific characteristics to build their own new well-developed ideas, **using these connections to independently solve problems and find solutions** • C6 – Children are able to apply connected learning ideas to equitable/sustainability topics, with peer/group support. **They note limitations and scepticisms in responses** • CO4 – Developing perseverance noting scientific mistakes as learning opportunities not jumping to a quick solution and starting to justify their thoughts on this. Pupils like to learn from mistakes and have self-belief even if all information is not clear. **They understand how this is shaping the learning/end goal** • CO5 – Pupils set goals for scientific enquires/investigations using stem sentences **in a group setting** and summarise these with **the group in a joint succinct response** • CT1 – Pupils summarise scientific observations and suggest answers to scientific questions, creating their own mapped thought process to support their own learning. **This is starting to draw on multi-disciplines**
Topic/Novel Link:	

Defined End Point
- Start to take accurate measurements during investigations which demonstrate increased precision, taking repeat readings when appropriate - Begin to identify scientific evidence that has been used to support or refute ideas or arguments