Skills Progression for Science

	Year 5	Year 6
KPI's: Working Scientifically	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (Year 5 focus) • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Year 5 focus) • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (Year 5 focus) • Use test results to make predictions to set up further comparative and fair tests (Year 5 focus) • 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 (Year 5 focus) • Identify scientific evidence that has been used to support or refute ideas or arguments (Year 5 focus) https://www.outstandingscience.co.uk/ https://www.stem.org.uk/primary-science	• Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary (Year 6 focus) • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (Year 6 focus) • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (Year 6 focus) • Use test results to make predictions to set up further comparative and fair tests (Year 6 focus) • 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 (Year 6 focus) • 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 (Year 6 focus) • Describe and evaluate their own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources • Group and classify things and recognise patterns https://www.outstandingscience.co.uk/ https://www.stem.org.uk/primary-science

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Living Things & Their	• **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** https://www.stem.org.uk/resources/community/collection/12775/year-5-living-things-and-their-habitats One of the Crowd Reproduction and Life Cycles Life Cycle Activity Pack	• **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** • **Give reasons for classifying plants and animals based on specific characteristics** https://www.stem.org.uk/resources/community/collection/12740/year-6-all-living-things The Linean Society Fera Resources
Animals including humans	• **Describe the changes as humans develop to old age** https://www.stem.org.uk/resources/community/collection/13293/year-5-animals-including-humans Animal Gestation The Human Life Cycle	• **Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood** • **Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function** • **Describe the ways in which nutrients and water are transported within animals, including humans** https://www.stem.org.uk/resources/community/collection/13109/year-6-animals-including-humans Heart Beaters Human Body The Circulation Game

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Electricity		• **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** https://www.stem.org.uk/resources/community/collection/12390/year-6-electricity Electricity Circuits Changing circuits Super Sucker
Forces & Magnets		• **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** https://www.stem.org.uk/resources/community/collection/12696/year-5-forces May the forces be with you Aircraft forces Popular mechanics

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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** https://www.stem.org.uk/resources/community/collection/12741/year-6-light Crime lab investigation Down to earth
States of matter	• **Compare and group materials together, according to whether they are solids, liquids or gases** • **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)** • **Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature** https://www.stem.org.uk/resources/community/collection/14764/year-5-changes-state Plastic from milk Properties and changes of the materials Selenia in Homeward Bound	

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Sound	• **Identify how sounds are made, associating some of them with something vibrating** • **Recognise that vibrations from sounds travel through a medium to the ear** • **Find patterns between the pitch of a sound and features of the object that produced it** • **Find patterns between the volume of a sound and the strength of the vibrations that produced it** • **Recognise that sounds get fainter as the distance from the sound source increases** https://www.stem.org.uk/resources/community/collection/12746/year-4-sound Straw oboes Listen up Data logging in the environment	

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Materials	• **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** • **Recognise 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** • **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** https://www.stem.org.uk/resources/community/collection/12742/year-5-properties-materials The Chemedian How can we clean our dirty water	

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Evolution & Inheritance	• **Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago** • **Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents** • **Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution** https://www.stem.org.uk/resources/community/collection/12648/year-6-evolution-and-inheritance Evolution Mega Lab Primary Evolution	