



Year 5: Living Things and Their Habitats, Animals Including Humans, Properties and Changes of Materials, Earth and Space, Forces; Working Scientifically; (Exploring/observing, grouping & classifying, questioning, research, modelling, collaborating, planning & testing, using equipment & measures, communicating, describing results/looking at patterns, explaining results, trusting results)

Autumn Term 1	Autumn Term 2	Spring Term	Summer Term
<p>To Infinity and Beyond Earth and Space</p> <ul style="list-style-type: none"> 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. <p>Working Scientifically Skills</p> <ul style="list-style-type: none"> Use secondary sources of information to identify and classify. Recognise scientific questions that do not yet have definitive answers (linked to Y5 PoS). Decide whether their questions can be answered by researching or by testing. Find out how scientific ideas have changed / developed over time (linked to Y5 PoS). Make decisions about which information to use from a wide range of sources. Use their developing scientific knowledge and understanding and relevant scientific language and terminology to communicate more abstract concepts (linked to Y5 PoS). 	<p>The Smashing Saxons Forces</p> <ul style="list-style-type: none"> 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 <p>Working Scientifically Skills</p> <ul style="list-style-type: none"> Evaluate their observations and suggest a further test, offer another question or make a prediction. Refine a scientific question so that it can be tested e.g. 'What would happen to... if we changed...?' Independently ask their own scientific questions taking some ownership for finding out the answers. 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). Propose their own ideas and make decisions with agreement in a group. Check the clarity of each other's suggestions Carry out fair tests and other investigations with increasing independence. Make decisions about which variables to change, measure and keep the same (linked to the appropriate units in the Y5 PoS). Make their own decisions about what observations to make or measurements to use and how long to take them for (recognising the need for repeat readings on some occasions). Take measurements using a range of scientific equipment with increasing accuracy and using more complex scales/units. Record data and results of increasing complexity using different formats e.g. tables, annotated scientific diagrams, classification keys, graphs and models. Look for / notice relationships between things and begin to describe these. Comment on the results and whether they support the initial prediction. Draw a valid conclusion (explain why it happened) based on their data and observations (from Y5 PoS). Compare results with others and comment on how reliable they are. 	<p>Groovy Greeks Properties and Changes of Materials</p> <ul style="list-style-type: none"> 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 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, 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 change 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>Working Scientifically Skills</p> <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/space, reversible/ irreversible changes). Observe (including changes over time) and suggest a reason for what they notice. 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). Decide which sources of information (and / or equipment and /or test) to help identify and classify. Independently ask their own scientific questions taking some ownership for finding out the answers. Support, listen to and acknowledge others in the group e.g. Yes. I prefer that one too. 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. Suggest more than one possible prediction and begin to suggest which is the most likely. Justify their reason with some knowledge and understanding of the scientific concept. Make most of the planning decisions for an investigation. Recognise when it is appropriate to carry out a fair test. Identify possible risks to themselves and others and suggest ways of reducing these. Choose the most appropriate equipment and make accurate measurements. Make decisions about the most appropriate way of recording data. Describe straightforward patterns in results linking cause and effect e.g. using er or the word 'more' (e.g. the longer, thinner shapes move through the water more quickly OR the larger the wings, the longer it takes the spinner to fall). Use their scientific knowledge and understanding and appropriate scientific language and terminology (linked to Y5 PoS) to explain their findings and data and answer their initial question. Begin to recognise how repeated readings improve the reliability of results. 	<p>The Amazing Americas Living Things and their habitats</p> <ul style="list-style-type: none"> 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. <p>Animals, including humans</p> <ul style="list-style-type: none"> describe the changes as humans develop to old age. <p>Working Scientifically Skills</p> <ul style="list-style-type: none"> Suggest reasons for similarities and differences. 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. Decide whether their questions can be answered by researching or by testing. Articulate and explain findings from their research using scientific knowledge and understanding. Present and explain their findings through talk, in written forms or in other ways (e.g. using technology) for a range of audiences / purposes.

Key Vocabulary

Living Things and Their Habitats	Animals Inc Humans	Properties and Changes of Materials	Earth and Space	Forces
<ul style="list-style-type: none"> Life-cycle, mammal, amphibian, insect, bird, life processes, reproduction, life cycle, plants, animals, species, process, function, stages, growth, reproduction, reproduce, germinate, germination, pollinate, pollination, fertilise, fertilisation Dispersal, disperse, flower, fruit, seed, stamen, style, stigma, sepal, petal, ovary, pollen, sexual/asexual reproduction, 	<ul style="list-style-type: none"> Growth, development, puberty, gestation, infancy/infant, youth, teenager, stage, change, develop, elderly, age, death, hormones, 	<ul style="list-style-type: none"> Properties, hardness, soluble, transparent, flexible, durable, conductive (electrical/thermal) magnetic, dissolvable, solution, evaporation, apparatus, equipment, undissolved, separate, powder, solids, liquids, gases, reversible; melting, evaporating, dissolving, sieving, filtering, irreversible, burning, acid, rusting, chemical reactions, polymers, 	<ul style="list-style-type: none"> Earth, planets, (Name all 8-Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune) moon(s) celestial, NB: Pluto renamed as a 'dwarf planet' in 2006 Spherical, movement, rotation, spin, axis, orbit, daytime, night-time, gravity, solar, star, lunar, satellite, crescent, day, month, year, sunrise, sunset, shadow, sky, equator, poles, hemisphere, solar system, geocentric model, heliocentric model, astronomy 	<ul style="list-style-type: none"> Apply, direction, forces, levers, lift, machines, move, movement, pivot, pull, pulleys, push, work, gravity, air resistance, upthrust, water resistances, friction, motion, stationary, weight, direction, newton, forcemeter, surface

