



Year 5 Science

Science Unit	Substantive Knowledge	Vocabulary	Disciplinary Knowledge: Working scientifically
Earth and Space <u>Key scientists</u> Catherine Jenkinson Carol Jemison	<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>Mae Carol Jemison: astronaut Katherine Johnson: Nasa mathematician instrumental in guiding the first American flight in space, and the return to Earth after the moon landing. See film "Hidden figures" which highlights the discrimination which she and other faced.</p>	Earth, Solar system, orbit, astronomical, planet names, rotation, spherical, crescent moon, gibbous moon, eclipse, lunar, celestial body	<ul style="list-style-type: none"> (WS) Identifying scientific evidence that has been used to support or refute ideas or arguments. (WS) Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (WS) Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (WS) Using test results to make predictions to set up further comparative and fair tests
Properties and changes of materials <u>Key Scientists</u> Spencer Silver, Arthur Fry and Alan Amron (Post-It Notes) Ruth Benerito (Wrinkle-Free Cotton)	<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 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 	rigid, hard, soft, stretchy, flexible, waterproof, absorbent, electrical/thermal conductivity, melting, thermal evaporation, dissolve, solution, insoluble, solute, solvent, particle, mixture, filtering, sieving, residue, reversible/non reversible changes, burning, rusting, filtering, bicarbonate of soda	<ul style="list-style-type: none"> (WS) Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (WS) Reporting and presenting 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 (WS) Identifying scientific evidence that has been used to support or refute ideas or arguments. (WS) Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (WS) Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (WS) Using test results to make predictions to set up further comparative and fair tests
Living things and their habitats <u>Key Scientists</u> David Attenborough James Brodie of Brodie (Reproduction of Plants by Spores)	<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 	Life cycle, birth, growth reproduction, death, sexual, asexual, germination, pollination, seed formation, seed dispersal, pollen, stamen, stigma, plantlets, runners, mammal, amphibian, insect, bird, fish, reptile, eggs, live young, metamorphosis, puberty, gestation, teenager, toddler	<ul style="list-style-type: none"> (WS) Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (WS) Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (WS) Using test results to make predictions to set up further comparative and fair tests (WS) Reporting and presenting 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 (WS) Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (WS) Identifying scientific evidence that has been used to support or refute ideas or arguments.
Animals including humans	<ul style="list-style-type: none"> describe the changes as humans develop to old age 		<ul style="list-style-type: none"> (WS) Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (WS) Using test results to make predictions to set up further comparative and fair tests
Forces Key Scientists Galileo Galilei (Gravity and Acceleration) Isaac Newton (Gravitation) Archimedes of Syracuse (Levers)	<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 	Fall, Earth, gravity, weight, mass, air resistance, water resistance, friction, moving surfaces, mechanisms, levers, pulleys,	<ul style="list-style-type: none"> (WS) Identifying scientific evidence that has been used to support or refute ideas or arguments. (WS) Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (WS) Reporting and presenting 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

		gears, force, transfers	<ul style="list-style-type: none">• (WS) Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary• (WS) Using test results to make predictions to set up further comparative and fair tests• (WS) Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graph.
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