



Ready,
Respectful,
Safe

Science Overview

Cathcart Street Primary School 2023-2024

Science – Year 5	Autumn	Spring	Summer
	Year 5 NC Objectives	Year 5 NC Objectives	Year 5 NC Objectives
	<p>Forces Pupils should be taught to:</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>Properties of Materials Pupils should be taught to:</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 give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 	<p>Changes of Materials Pupils should be taught to:</p> <ul style="list-style-type: none"> know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use Learning of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 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. <p>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. Scientist Jane Goodall 	<p>Animals including Humans</p> <ul style="list-style-type: none"> describe the changes as humans develop to old age <p>Earth and Space Pupils should be taught to:</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>NB Link to Spanish</p>
	Year 5 Key Learning	Year 5 Key Learning	Year 5 Key Learning
	<p>Forces - Physics</p> <ul style="list-style-type: none"> To be able to explain that a force causes an object to start moving, stop moving, speed up, slow down or change direction. To explain that unsupported objects fall towards the Earth because the force of gravity acting between the Earth and the falling object. To be able to explain air resistance, water resistance and friction are contact forces that act between moving surfaces and give 	<p>Properties and Changes of Materials - Chemistry</p> <ul style="list-style-type: none"> To be able to explain dissolving and identify some materials which are soluble and insoluble. To be able to separate mixtures using filtering, sieving and evaporation. To demonstrate that dissolving, mixing and changes of state are reversible changes. To 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>Earth and Space - Physics (Prior learning from KS1: observe changes across the four seasons, observe and describe weather associated with the seasons and how day length varies.)</p> <ul style="list-style-type: none"> To know that the sun is a star at the centre of our solar system. To be able to name the eight planets and the order in relation to their distance from the sun. To know that the planets orbit to sun and Earth takes 365 1/4 days to complete its orbit around the sun.

	<p>examples of friction, water resistance and air resistance.</p> <ul style="list-style-type: none"> To be able to identify when it is beneficial to have high or low friction, water resistance and air resistance. To be able to explain how pulleys, levers and gears allow a smaller force to have a greater effect (mechanisms). <p>Properties and Changes of Materials- Chemistry</p> <ul style="list-style-type: none"> To 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. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. To be able to identify materials with different uses depending on their properties and state (liquid, solid, gas) 	<p>Living things and their habitats - Biology</p> <ul style="list-style-type: none"> To know that in some animals the offspring will be born live and in other animals there may be eggs laid that hatch which then grow to adults. To know that others undergo a further change before becoming adults e.g. caterpillars to butterflies and know that this is called a metamorphosis. To know the process of reproduction in plants, including knowing that plants reproduce both sexually and asexually. To be able to name the male and female parts of the plant and their role in the life cycle. 	<ul style="list-style-type: none"> To know that the earth rotates (spins) on its axis. To be able to use the idea of the Earth's rotation to explain day and night. To know that the moon orbits the earth and takes about 28 days to complete its orbit. To know that the sun, earth and moon are approximately spherical. <p>Animals including Humans (To be taught alongside PSHE objectives) - Biology</p> <ul style="list-style-type: none"> To be able to explain the stages of growth in humans. To know the changes that takes place in boys and girls during puberty.
Working Scientifically	<p>Forces</p> <ul style="list-style-type: none"> To select measuring equipment to give the most precise results e.g. newton meter, timer. To record observations e.g. using annotated photographs, labelled diagrams, observational drawings, labelled scientific diagrams or writing. To record measurements using tables and line graphs. <p>Properties of Materials</p> <ul style="list-style-type: none"> To make predictions they can investigate using comparative and fair tests. 	<p>Changes of Materials</p> <ul style="list-style-type: none"> To select measuring equipment to give the most precise results e.g. thermometer, ruler. To evaluate their choice of method used, the control of variables, the precision and accuracy of measurements. To identify any limitations that reduce the trust they have in their data. <p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> To begin to choose a type of enquiry to carry out and justify their choice. (Given a wide range of resources) To decide for themselves how to gather evidence to answer a scientific question. 	<p>Animals inc. Humans</p> <ul style="list-style-type: none"> To independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their developed understanding following an enquiry. To communicate their findings to an audience using relevant scientific language and illustrations. <p>Earth and Space</p> <ul style="list-style-type: none"> To identify causal relationships and patterns in the natural world from their evidence e.g. shadows throughout the day. To discuss whether other evidence e.g. from other groups, secondary sources and their scientific understanding, supports or refutes their answer. To talk about how their scientific ideas change due to new evidence.
Vocabulary	<p>Key Vocabulary (Forces)</p> <p>gravity, Newton, weight, mass, gravitational pull, streamline, buoyancy, air resistance, water resistance, friction, mechanisms, levers, pulleys, gears.</p>	<p>Vocabulary (Changes of Materials)</p> <p>mixture, dissolve, solution, soluble, insoluble, separation reversible/irreversible change, burning, rusting, new material, substance.</p>	<p>Key Vocabulary (Animals inc Humans)</p> <p>Foetus, Embryo, Womb, Gestation, growth, development, Puberty, adolescence, life expectancy, adulthood</p>

	Vocabulary (Properties of Materials) mixture, dissolve, solution, soluble, insoluble, separation reversible/irreversible change, burning, rusting, new material, substance.	Key Vocabulary (Living things and their habitat) Life cycle, reproduction, gestation, metamorphosis, plantlets, runners, cuttings, fertilisation, Stamen, anther, filament, style, stigma, carpel, ovary, ovule, sepal, characteristic.	Key Vocabulary (Earth and Space) Earth, Sun, Moon, planets, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Spherical, Solar system, rotate, orbit, axis, satellite
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