

# SCIENCE CURRICULUM - YEAR 1 OBJECTIVES TO BE TAUGHT

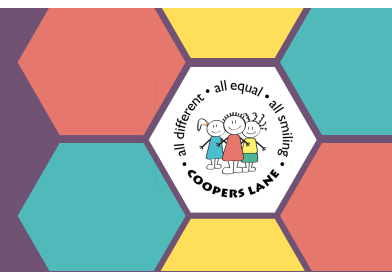
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	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
ONGOING - WHOLE ACADEMIC YEAR	<p><u>Seasonal Changes</u></p> <p>Observation; Pattern Seeking</p>	<ul style="list-style-type: none"> <li>- observe changes across the four seasons</li> <li>- observe and describe weather associated with the seasons and how day length varies; observe and talk about changes in the weather and the seasons</li> <li>- <b>that it is not safe to look directly at the Sun, even when wearing dark glasses</b></li> </ul>	Reception - Forest School	<p><b>Switched on Science</b> (through LGfL log in) - Year 1 - Polar Adventurers; Holiday - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 1)</p>
AUTUMN	<p><u>Animals, including Humans</u></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p> <p><b>Key Scientists:</b> Sir David Attenborough, Jaques Cousteau</p>	<ul style="list-style-type: none"> <li>- to identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals; the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets</li> <li>- to identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>- to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> <li>- to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense; the names of the main body parts, including <b>head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth</b></li> <li>- to use the local environment throughout the year to explore and answer questions about animals in their habitat; and understand how to take care of animals taken from their local environment and the need to return them safely after study</li> </ul>	Reception - explorative play	<p><b>Switched on Science</b> (through LGfL log in) - Year 1 - Polar Adventurers; Who Am I?; Holidays - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 1)</p> <p><b>Virtual Experiments</b> (through LGfL log in) - Year 1 &amp; 2 - 1A: Ourselves - Online Resource</p>
SPRING	<p><u>Everyday Materials</u></p> <p>Observation; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b> Leo Baekeland</p>	<ul style="list-style-type: none"> <li>- to distinguish between an object and the material from which it is made</li> <li>- to identify and name a variety of everyday materials, including <i>wood, plastic, glass, metal, water, and rock</i>; to explore and experiment with a wide variety of materials, not only those listed in this curriculum, but including for example: <i>brick, paper, fabrics, elastic, foil</i></li> <li>- to describe the simple physical properties of a variety of everyday materials; to explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties such as: <b>hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent</b></li> <li>- to compare and group together a variety of everyday materials on the basis of their simple physical properties; to perform simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'</li> </ul>	Reception - explorative play, outside area (construction)	<p><b>Virtual Experiments</b> (through LGfL log in) - Year 1 &amp; 2 - 1C: Sorting &amp; Using Materials - Online Resource</p>

# SCIENCE CURRICULUM - YEAR 1 OBJECTIVES TO BE TAUGHT (CONTINUED)

Coopers Lane Primary School's Official Curriculum - Planning Tool



	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
<p><b>SUMMER</b></p> <p><b>*ONGOING TREE OBSERVATION</b></p>	<p><b><u>Plants</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b> Joseph Banks</p>	<ul style="list-style-type: none"> <li>- to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees; to become familiar with common names of flowers, examples of deciduous and evergreen trees</li> <li>- to use the local environment <u>throughout the year</u> to explore and answer questions about plants and trees growing in their habitat</li> <li>- to observe the growth of flowers and vegetables that they have planted</li> <li>- to identify and describe the basic structure of a variety of common flowering plants, including trees; to become familiar with common names of plant structures, including <b>leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem</b></li> </ul>	<p>Reception and Year 1 - Forest School</p>	<p><b>Virtual Experiments</b> (through LGfL log in) - Year 1 &amp; 2 - 1B: Growing Plants - Online Resource</p>

PLEASE REFER TO THE '**KS1 CONTINUOUS PROVISION PLANNING GUIDE**', RESOURCE ENHANCEMENTS SECTION, TO HELP SUPPORT THE TEACHING OF THE ABOVE OBJECTIVES IN THE CLASSROOM CONTINUOUS PROVISION.

# SCIENCE CURRICULUM - YEAR 2 OBJECTIVES TO BE TAUGHT

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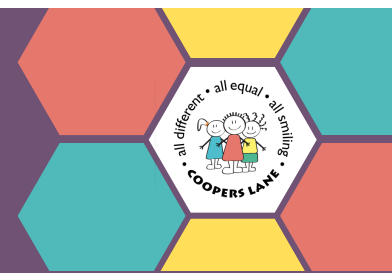


	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
AUTUMN	<p><b><u>Use of Everyday Materials</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p> <p><b>Key Scientists:</b> John Dunlop, Charles Macintosh or John McAdam.</p>	<ul style="list-style-type: none"> <li>- to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>- to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> <li>- identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass).</li> <li>- think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials.</li> <li>- find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.</li> <li>- work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.</li> </ul>	Year 1 - Spring, Everyday Materials	<p><b>Switched on Science</b> (through LGfL log in) - Year 2 - Materials Monsters</p> <p>(Google Drive, Curriculum 2020, Science, Year 2)</p>
SPRING 1	<p><b><u>Animals including Humans</u></b></p> <p>Observation; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b></p>	<ul style="list-style-type: none"> <li>-to notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>- to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> <li>- to learn about the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans.</li> <li>- start to think about the processes of reproduction and growth, for example; egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult.</li> <li>- work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.</li> </ul>	Year 1 - Autumn, Animals including Humans	<p><b>Switched on Science</b> (through LGfL log in) - Year 2 - Healthy Me</p> <p>(Google Drive, Curriculum 2020, Science, Year 2)</p>



# SCIENCE CURRICULUM - YEAR 2 OBJECTIVES TO BE TAUGHT (CONTINUED)

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	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
SPRING 2	<p><b><u>Living Things and their Habitats</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b></p>	<ul style="list-style-type: none"> <li>- to explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>- to identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li> <li>- to identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>- to describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</li> </ul>	<p>Reception and Year 1 - Forest School</p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 2 - Mini Worlds</p> <p>(Google Drive, Curriculum 2020, Science, Year 2)</p>
SUMMER	<p><b><u>Plants</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b></p>	<ul style="list-style-type: none"> <li>- to observe and describe how seeds and bulbs grow into mature plants</li> <li>- to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> <li>- use the local environment throughout the year to observe how different plants grow.</li> <li>- be introduced to the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants.</li> <li>- work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.</li> </ul>	<p>Reception and Year 1 - Forest School</p> <p>Year 1 - Summer, Plants</p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 2 - Young Gardeners</p> <p>(Google Drive, Curriculum 2020, Science, Year 2)</p>

# SCIENCE CURRICULUM - YEAR 3 OBJECTIVES TO BE TAUGHT

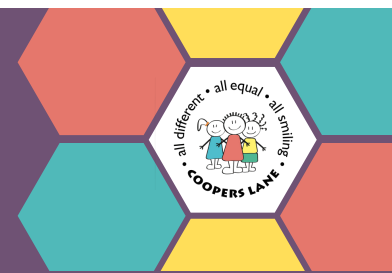
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	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
AUTUMN 1	<p><b><u>Rocks</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p> <p><b>Key Scientists:</b> <i>Sir David Attenborough, Mary Anning</i></p>	<ul style="list-style-type: none"> <li>- Compare and group types of rocks based on appearance and simple physical properties.</li> <li>- Describe simply how fossils were formed.</li> <li>- Recognise that soils are made from rocks and organic matter.</li> <li>- Rock formation</li> <li>- to gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>- ask relevant questions and using different types of scientific enquiries to answer them</li> <li>- observe rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time; using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.</li> </ul>	Year 2, Autumn; Everyday Materials	<p><b>Switched on Science</b> (through LGfL log in) - Year 3 - Earth Rocks</p> <p>(Google Drive, Curriculum 2020, Science, Year 3)</p>
AUTUMN 2	<p><b><u>Forces and Magnets</u></b></p> <p>Observation; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing;</p>	<ul style="list-style-type: none"> <li>- Compare how things move on different surfaces.</li> <li>- Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>- Observe how magnets attract or repel each other, and how they attract some materials and not others.</li> <li>- Compare and group together a variety of everyday materials based on magnetism.</li> <li>- Describe magnets as having two poles.</li> <li>- Predict whether two magnets will attract or repel each other based on their poles.</li> </ul>		<p><b>Switched on Science</b> (through LGfL log in) - Year 3 - Opposites attract</p> <p>(Google Drive, Curriculum 2020, Science, Year 3)</p>
SPRING 1	<p><b><u>Light</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p>	<ul style="list-style-type: none"> <li>- Recognise they need light in order to see things and that dark is the absence of light.</li> <li>- Notice that light reflects from surfaces.</li> <li>- Recognise that light from the sun can be dangerous - need to protect our eyes.</li> <li>- Recognise that shadows are formed when an opaque object blocks the light from a source.</li> <li>- Find patterns in the way that the sizes of shadows change.</li> </ul>	Y1 Seasonal Changes	<p><b>Switched on Science</b> (through LGfL log in) - Year 3 - Mirror, Mirror</p> <p>(Google Drive, Curriculum 2020, Science, Year 3)</p>

# SCIENCE CURRICULUM - YEAR 3 OBJECTIVES TO BE TAUGHT (CONTINUED)

Coopers Lane Primary School's Official Curriculum - Planning Tool



	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
SPRING 2	<p><b><u>Plants</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists: Jane Coldan</b></p>	<ul style="list-style-type: none"> <li>- to identify and describe functions of different parts of flowering plants.</li> <li>- explore the requirements of plants for life and growth, and how they vary from plant to plant.</li> <li>- Investigate the way in which water is transported within plants.</li> <li>- explore the part that flowers play in the life cycle – pollination, seed formation and seed dispersal</li> <li>- to become familiar with common names of plant structures, including <b>leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem</b></li> </ul>	Year 2 - Summer; Plants	<p><b>Switched on Science</b> (through LGfL log in) - Year 3 - How does your garden grow?</p> <p>(Google Drive, Curriculum 2020, Science, Year 3)</p>
SUMMER	<p><b><u>Animals Including Humans</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists: Wilhelm Rontgen</b></p>	<ul style="list-style-type: none"> <li>- to identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food.</li> <li>- to understand and apply the principles of a healthy diet; <b>nutrients, carbohydrates, protein, fats</b></li> <li>- identify that humans and some animals have skeletons and muscles for support, protection and movement</li> <li>- to name and locate some bones within the skeletal structure: <b>skull, ribcage, pelvis, femur, tibia, fibula, humerus, radius</b></li> <li>- to understand the difference between a hinge joint and a ball and socket joint.</li> <li>- to describe how muscles work; how they are connected by bones and tendons; how they work in pairs, contracting and reflexing</li> <li>- to group and classify animals that have internal skeletons (vertebrates) and those that don't (invertebrates)</li> <li>- to understand how x-rays were discovered by Wilhem Rontgen and how they are used today in medicine.</li> </ul>	<p>Year 1 - Autumn; Animals incl. Humans</p> <p>Year 2 - Spring 1; Animals incl. Humans</p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 3 - Food and our bodies</p> <p>(Google Drive, Curriculum 2020, Science, Year 3)</p>



# SCIENCE CURRICULUM - YEAR 4 OBJECTIVES TO BE TAUGHT

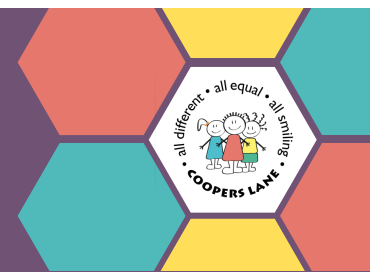
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	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
AUTUMN 1	<p><b><u>Sound</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p>	<ul style="list-style-type: none"> <li>- to identify how sounds are made, associating some of them with something vibrating</li> <li>- to recognise that vibrations from sounds travel through a medium to the ear</li> <li>- to find patterns between the pitch of a sound and features of the object that produced it</li> <li>- to find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>- to recognise that sounds get fainter as the distance from the sound source increases.</li> <li>- to explore and identify the way sound is made through vibration in a range of different musical instruments from around the world; and find out how the pitch and volume of sounds can be changed in a variety of ways.</li> </ul>		<p><b>Switched on Science</b> (through LGfL log in) - Year 4 - What's that Sound?- Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 4)</p>
AUTUMN 2	<p><b><u>States of Matter</u></b></p> <p>Observation; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p>	<ul style="list-style-type: none"> <li>- to compare and group materials together, according to whether they are solids, liquids or gases</li> <li>- to 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)</li> <li>-to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> <li>- about the digestive system and compare them with models or images.</li> <li>- to explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container).</li> <li>- to observe water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled.</li> </ul>		<p><b>Switched on Science</b> (through LGfL log in) - Year 4 - Looking at States - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 4)</p>
SPRING 1	<p><b><u>Animals including Humans</u></b></p> <p>Observation; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p>	<ul style="list-style-type: none"> <li>- to describe the simple functions of the basic parts of the digestive system in humans</li> <li>- to identify the different types of teeth in humans and their simple functions</li> <li>- to construct and interpret a variety of food chains, identifying producers, predators and prey.</li> <li>- be introduced to the main body parts associated with the digestive system, for example, mouth, tongue, teeth, oesophagus, stomach and small and large intestine</li> <li>- to explore questions that help them to understand their special functions.</li> <li>- work scientifically by: comparing the teeth of carnivores and herbivores, and suggesting reasons for differences; finding out what damages teeth and how to look after them.</li> <li>- to draw and discuss their ideas about the digestive system and compare them with models or images.</li> </ul>	<p>Year 1 - Autumn, Animals incl Humans</p> <p>Year 2 - Spring 1, Animals incl Humans</p> <p>Year 3 - Summer, Animals incl Humans</p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 4 - Teeth and Eating - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 4)</p>

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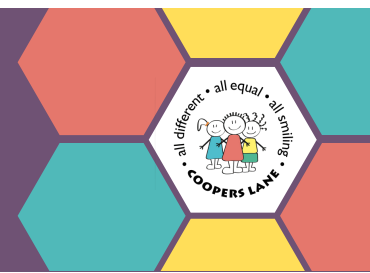


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SPRING 2	<p><b><u>Electricity</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p>	<ul style="list-style-type: none"> <li>- to identify common appliances that run on electricity</li> <li>- to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>- to identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>- to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>- to recognise some common conductors and insulators, and associate metals with being good conductors.</li> <li>- to construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices.</li> <li>- to start to draw the circuit as a pictorial representation, not necessarily using conventional circuit symbols at this stage</li> <li>- to observe patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.</li> </ul>		<p><b>Switched on Science</b> (through LGfL log in) - Year 4 - Power it Up!- Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 4)</p>
SUMMER	<p><b><u>Living Things and their Habitats</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p>	<ul style="list-style-type: none"> <li>- to recognise that living things can be grouped in a variety of ways</li> <li>- to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>- recognise that environments can change and that this can sometimes pose dangers to living things.</li> <li>- to use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat.</li> <li>- identify how the habitat changes throughout the year.</li> <li>- explore possible ways of grouping a wide selection of living things that include animals and flowering plants and non-flowering plants.</li> <li>- begin to put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. Note: Plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, such as ferns and mosses.</li> <li>- explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation.</li> <li>- to work scientifically by: using and making simple guides or keys to explore and identify local plants and animals; making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.</li> </ul>	<p>Year 2- Spring 2, Living things and their habitat</p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 4 - Living Things - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 4)</p>



# SCIENCE CURRICULUM - YEAR 5 OBJECTIVES TO BE TAUGHT

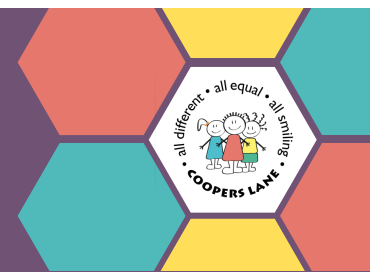
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<b>AUTUMN</b>	<p><b><u>Properties and Changes of Materials</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p> <p><b>Key Scientists:</b> <i>Spencer Silver, Ruth Benerito</i></p>	<ul style="list-style-type: none"> <li>- 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</li> <li>- that some materials will dissolve in liquid to form a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>- to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>- to demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>- 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.</li> <li>- to build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4.</li> <li>- to explore reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes.</li> <li>- to explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda.</li> <li>- about how chemists create new materials, for example, Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton.</li> </ul>	Year 2 - Autumn, Everyday Materials	<p><b>Switched on Science</b> (through LGfL log in) - Year 5 - Material World - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 5)</p>
<b>SPRING 1</b>	<p><b>Earth and Space</b></p> <p>Observation; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p>	<ul style="list-style-type: none"> <li>- to describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>- to describe the movement of the Moon relative to the Earth</li> <li>- to describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>- to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> <li>- be introduced to a model of the Sun and Earth that enables them to explain day and night.</li> <li>- that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006).</li> <li>- that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).</li> </ul>		<p><b>Switched on Science</b> (through LGfL log in) - Year 5 - Out of this World! - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 5)</p>

# SCIENCE CURRICULUM - YEAR 5 OBJECTIVES TO BE TAUGHT (CONTINUED)

Coopers Lane Primary School's Official Curriculum - Planning Tool



	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
SPRING 2	<p><b><u>Forces</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b> Galileo, Newton</p>	<ul style="list-style-type: none"> <li>- to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>- to identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>- to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> <li>- to explore falling objects and raise questions about the effects of air resistance.</li> <li>- to explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall.</li> <li>- to explore the effects of friction on movement and find out how it slows or stops moving objects, for example, by observing the effects of a brake on a bicycle wheel.</li> <li>- to explore the effects of levers, pulleys and simple machines on movement.</li> <li>- how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation.</li> </ul>	Year 3 - Autumn 2; Forces and Magnets	<p><b>Switched on Science</b> (through LGfL log in) - Year 5 - Let's get Moving - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 5)</p>
SUMMER 1	<p><b><u>Animals including Humans</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p>	<ul style="list-style-type: none"> <li>-to describe the changes as humans develop to old age.</li> <li>- to draw a timeline to indicate stages in the growth and development of humans. - about the changes experienced in puberty.</li> <li>- to work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows</li> </ul>	<p>Year 3 - Summer, Animals incl humans</p> <p>Year 4 - Spring 1, Animals incl humans</p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 5 - Growing Up and Growing Old - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 5)</p>
SUMMER 2	<p><b><u>Living Things and their Habitat</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b> David Attenborough, Jane Goodall</p>	<ul style="list-style-type: none"> <li>- to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>- to describe the life process of reproduction in some plants and animals.</li> <li>- to observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment.</li> <li>- to find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall.</li> <li>- to find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.</li> <li>- to observe and compare the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences.</li> </ul>	<p>Year 2 - Spring 2; Living things and their habitats</p> <p>Year 4 - Summer; Living things and their habitats</p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 5 - Circle of Life - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 5)</p>



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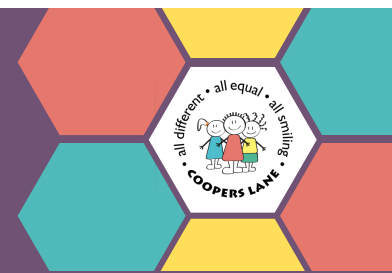


	TOPIC	IN THIS UNIT OF WORK, PUPILS LEARN...	PRIOR LEARNING	RESOURCES TO SUPPORT PLANNING
AUTUMN 1	<p><b><u>Light</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p>	<ul style="list-style-type: none"> <li>- recognise that light appears to travel in straight lines</li> <li>- about the idea that light travels in straight lines</li> <li>- to explain that objects are seen because they give out or reflect light into the eye</li> <li>- to 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</li> <li>- to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> <li>- to explore the way that light behaves, including light sources, reflection and shadows</li> <li>- work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works.</li> <li>- to investigate the relationship between light sources, objects and shadows by using shadow puppets; looking a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters</li> </ul>	Year 3 - Spring 1; Light	<p><b>Switched on Science</b> (through LGfL log in) - Year 6 - Let it Shine - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 6)</p>
AUTUMN 2	<p><b><u>Electricity</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Research</p>	<ul style="list-style-type: none"> <li>- to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>- to 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</li> <li>- to use recognised symbols when representing a simple circuit in a diagram.</li> <li>- to construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors.</li> <li>- how to represent a simple circuit in a diagram using recognised symbols.</li> <li>- work scientifically by: systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights.</li> </ul>	Year 4 - Spring 2; Electricity	<p><b>Switched on Science</b> (through LGfL log in) - Year 6 - Electrifying - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 6)</p>
SPRING 1	<p><b><u>Evolution and Inheritance</u></b></p> <p>Observation; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b> Alfred Wallace, Charles Darwin, Mary Anning</p>	<ul style="list-style-type: none"> <li>- to recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>- to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>- to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> <li>- about fossils and more about how living things on earth have changed over time.</li> <li>- that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles.</li> <li>- that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the development of insulating fur on the arctic fox.</li> <li>- about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.</li> </ul>		<p><b>Switched on Science</b> (through LGfL log in) - Year 6 - We're Evolving - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 6)</p>



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SPRING 2	<p><b><u>Living Things and their Habitats</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p> <p><b>Key Scientists:</b> Carl Linnaeus</p>	<ul style="list-style-type: none"> <li>- to describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</li> <li>- to give reasons for classifying plants and animals based on specific characteristics</li> <li>- about the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided.</li> <li>- to make direct observations where possible; classifying animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals).</li> <li>- to discuss reasons why living things are placed in one group and not another.</li> <li>- about the significance of the work of scientists such as Carl Linnaeus, a pioneer of</li> <li>- to work scientifically by: using classification systems and keys to identify some animals and plants in the immediate environment.</li> <li>- to research unfamiliar animals and plants from a broad range of other habitats.</li> </ul>	<p>Year 4 - Summer; <i>Living things and their habitat</i></p> <p>Year 5 - Summer 2; <i>Living things and their habitat</i></p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 6 - Classifying Critters - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 6)</p>
SUMMER	<p><b><u>Animals including Humans</u></b></p> <p>Observation; Pattern Seeking; Identifying, Classifying &amp; Grouping; Comparative &amp; Fair Testing; Research</p>	<ul style="list-style-type: none"> <li>- to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>- to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>- to describe the ways in which nutrients and water are transported within animals, including humans.</li> <li>- about the main body parts and internal organs (skeletal, muscular and digestive system)</li> <li>- to explore and answer questions that help them to understand how the circulatory system enables the body to function.</li> <li>- how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.</li> <li>- to work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.</li> </ul>	<p>Year 3 - Summer; <i>Animals incl humans</i></p> <p>Year 4 - Spring 1; <i>Animals incl humans</i></p> <p>Year 5 - Summer 1; <i>Animals incl humans</i></p>	<p><b>Switched on Science</b> (through LGfL log in) - Year 6 - Staying Alive - Example Planning &amp; activities</p> <p>(Google Drive, Curriculum 2020, Science, Year 6)</p>