

Science Progression Map



We are a Right Respecting School and this statement supports the following articles from the UN Convention on the Rights of a Child

Article 13: (Freedom of expression): Every child has the right to share information in any way they choose, including by talking, drawing or writing as long as it does not harm others.

Article 28: (Right to education): Every child has the right to a primary education, which should be free. They should be encouraged to reach the highest level of education of which they are capable.

Article 29: (Goals of education) Education must develop every child's personality, talents and abilities to the full. It must encourage the child's respect for human rights, as well as respect for their parents, their own and other cultures, and the environment.

Article 31: (Leisure, play and culture): Children have the right to relax and play, and to join in a wide range of cultural, artistic and other recreational activities.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Food and Our bodies Introduction to topic - AFL + vocabulary Identify that humans need the right amount of nutrition. Identify that humans cannot make their own food and need to get nutrition from what they eat. Explain why a varied diet is important Identify why humans have a skeleton and muscles for support, protection and movement Identify why humans have a skeleton and muscles for support, protection and movement	Light and Shadow 3.3.1 Recognise that they need light in order to see things and that dark is the absence of light 3.3.3 Recognise that light from the sun can be dangerous and that there are ways to protect their eyes 3.3.4 Recognise that shadows are formed when the light from a light source is blocked by a solid object 3.3.5 Find patterns in the way that the size of shadows change 3.3.2 Notice that light is reflected from surfaces	Forces Introduction to topic - AFL + vocabulary 3.1.5 Describe and identify the poles of a magnet. 3.1.4 Group materials on the basis of being magnetic. 3.1.1. Compare how an object will move on different surfaces. 3.1.3 Describe how magnets attract or repel each other, and attract magnetic materials. 3.1.2 Recognise the difference between contact and contact forces.	Plants 3.4a1 Describe what each part of a flowering plant does. 3.4a2 Explain, with the aid of a diagram or plant, how water is carried up from the soil. 3.4a3 Explain how pollination, seed formation and seed dispersal play a role in the reproduction of flowering plants 3.2.1 Explain what all plants need to flourish and recognise how these requirements vary in amount. 3.4a1 Describe what each part of a flowering plant does. 3.4.a1 Pupil can, with prompting, write a conclusion based on evidence (working scientifically focus)	Rocks and Soils Introduction to topic - AFL + vocabulary 3.2.1 Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. 3.1.1 Describe in simple terms how fossils are formed when things that have lived are trapped within rock 3.1.2 Recognise that soils are made from rocks and organic matter	Revisit/ working scientifically

Year 4	Living Things Introduction to topic - AFL + vocabulary Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things	Power Up To identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers 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 Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Recognise some common conductors and insulators, and associate metals with being good conductors	Sound 4.3.1 How sounds are made (vibrations) 4.3.2 How we hear (human ear) 4.3.3 investigating the correlation between sound and distance 4.3.3 Record data using data loggers and bar chart 4.3.5 How to change volume (practical/ equipment) Finding the link between volume and the strength of vibrations 4.3.4 How to change pitch Finding patterns between the size of an object and the pitch of a sound (tubular bells in playground)	Looking at States Introduction to topic - AFL + vocabulary 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 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)	Teeth and Eating Introduction to topic - AFL + vocabulary Identify types of teeth in humans and their simple function Describe the simple functions of the basic parts of the digestive system in humans Describe and interpret a variety of food chains, identifying producers, predators and prey	Revisit/ working scientifically
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Year 5	Out of this World Introduction to scientific topic and exposure to new vocabulary 5.2.1 Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. 5.2.2 Describe the movement of the moon relative to the Earth. 5.2.4. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. 5.1. B.1 With prompting, plan different types of scientific enquiries to answer questions. 5.1.1 Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	Material World Introduction to scientific topic and exposure to new vocabulary 5.2.1 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 5.2.2 Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution 5.2.3 Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 5.2.5 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	Let's get Moving Introduction to scientific topic - AfL and vocabulary 5.1.1 Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object 5.1.2 Identify the effects of air resistance, water resistance and friction, that act between moving surfaces 5.1.3 Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect 5.1.b.1 With prompting, plan different types of scientific enquiries to answer questions (+)	Circle of Life Introduction to topic. AfL and vocabulary 5.4b.1 Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. 5.4b.2 Describe the changes as humans develop to old age. 5.5.1 Describe the life process of reproduction in some plants and animals.	Growing up and Growing Old Introduction to topic AFL + vocabulary Describe in sequence the stages of reproduction in some plants and animals Describe similarities and differences in life cycles Describe changes as humans develop to old age	Revisit/ working scientifically

Year 6	Classifying Critters Introduction to topic - AFL + vocabulary Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things	Electrifying Introduction to topic - AFL + vocabulary 6.4.1 Explain how number and voltage of cells affects the lamp (or buzzer). 6.4.3. Represent a circuit that has been constructed using symbols 6.4.2 Explain the use of switches, how bulbs can be made brighter (or buzzers louder).	Let it Shine Introduction to topic - AFL + vocabulary 6.3.3 Explain that we see things because light travels from light sources to our eyes or from light sources to objects then to our eyes 6.3.1 Recognise that light appears to travel in straight lines 6.3.4 Use the idea that light travels in straight lines - explain that shadows have the same shape as the objects cast 6.3.2 Draw diagrams using straight lines showing light travelling to the eye 6.3.3 Explain that we see things because light travels from light sources to our eyes or from light sources to objects then to our eyes (by investigating how we see colours)	Evolution and Inheritance 6.3.1 Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago 6.3.2 Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents 6.3.3 Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Revisit/ working scientifically	Staying Alive Introduction to topic - AFL + vocabulary 6.5.2. Suggest how their bodies are affected by substances and actions, e.g. that a high fat diet coupled with little exercise is likely to lead to obesity 6.5.3. Describe with aid of diagrams the route that water takes within animals, e.g. through the human body. 6.5.1. Describe what heart, blood vessels and blood do, e.g. carry oxygen to all parts of the body
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Working Scientifically Progression

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Food and Our Bodies Identify, compare and explain using theory Analyse data and draw conclusions. Process findings to develop conclusions. Pupils can label diagrams 3.1.b.1 Set up simple and practical enquiries, comparative and fair tests. 3.3.c.1 With prompting, use various ways of recording, grouping and displaying evidence	Light and Shadow 3.4.a.1 With prompting, suggest conclusions 3.1.a.1 Ask relevant questions when prompted 3.1.b.1 Set up simple and practical enquiries, comparative and fair tests 3.2.a.1 Make systematic observations, using simple equipment 3.2.b.1 Use standard units when taking measurements 3.3.a.1 Record findings in various ways	Forces 3.5.a.1 Pupil can, with prompting, recognise patterns that relate to scientific ideas, e.g. investigating the behaviour of magnets. 3.3.c.1 Pupil can, with prompting, gather and display evidence in different ways, e.g. about the ways that magnets behave in relation to each other. 3.1.c.1 Pupil can set up a comparative test, e.g. how far things move on different surfaces. 3.5.a.1 Pupil can, with prompting, recognise patterns that relate to scientific ideas, e.g. investigating the behaviour of magnets. 3.1.a.1 Pupil can, with support, develop relevant, testable questions.	Plants Pupils can, with support, develop relevant testable questions. Pupils can, with prompting, draw and label diagrams. Pupils can, with prompting, recognise patterns that relate to scientific ideas, e.g. the behaviour of animals that disperse seeds. Pupils can indicate findings from an enquiry that could be reported. Pupils can plan an enquiry, such as comparative or fair test, e.g. comparing the effect on different factors on plant growth. 3.4.a1 Pupil can, with prompting, write a conclusion based on evidence	Rocks and Soils 3.3.a.1 Record findings in various ways Label diagrams and/or construct table. 3.2.a.1 Make systematic observations, using simple equipment Pupils can label diagrams 3.4.a.1 With prompting, suggest conclusions from enquiries and answer questions about how fossils are formed. 3.1.b.1 Set up simple and practical enquiries, comparative and fair tests. 3.3.c.1 With prompting, use various ways of recording, grouping and displaying evidence	Revisit/ working scientifically Refer to previous units.

Year 4	Living Things Asking relevant questions and using different types of scientific enquiries to answer them. Identifying differences, similarities or changes related to simple scientific ideas and processes Gathering, recording, classifying and presenting data to help in answering questions Recording findings using simple scientific language, drawings, labelled diagrams & keys Making systematic and careful observations Making systematic and careful observations Report on findings from enquiries, using tables and keys. Making systematic and careful observations Report on findings from enquiries.	Power Up Set up a simple practical enquiry. Make systematic and careful observations. Draw simple conclusions. Pupil can write a conclusion based on evidence, e.g. effect on brightness of bulbs if more cells are added. Pupil can write a conclusion based on evidence, e.g. effect on brightness of bulbs if more cells are added. Pupil can present findings either in writing or orally, e.g. relating to investigating which materials are conductors.	Sound Set up a simple practical enquiry. Make systematic and careful observations. Draw simple conclusions. Pupil can write a conclusion based on evidence, e.g. effect on brightness of bulbs if more cells are added. Pupil can write a conclusion based on evidence, e.g. effect on brightness of bulbs if more cells are added. Pupil can present findings either in writing or orally, e.g. relating to investigating which materials are conductors.	Looking at States Group materials according to their state of matter. Recognise that some materials (e.g. toothpaste) cannot be easily classified as solid, liquid or gas. Group materials according to their state of matter. Identify changes of state and research values of degrees Celsius at which changes happen. Identify changes of state and research values of degrees Celsius at which changes happen. Describe how evaporation and condensation happen in the water cycle, and how temperature affects evaporation. Describe how evaporation and condensation happen in the water cycle, and how temperature affects evaporation.	Teeth and Eating Carry out a simple practical enquiry. Make systematic and careful observations to form conclusions. Record data using tables and bar charts. Record observations in a variety of ways. Observe and compare similarities and differences Pupils can, with prompting, use words and labelled diagrams to form an explanation. Use different types of scientific enquiries - using secondary data to research, to answer questions. To make observations and record findings using scientific language and labelled diagrams. Pupil can, with support, display and present key findings from enquiries orally and in writing.	Revisit/ working scientifically Refer to previous units.
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Year 5	Out of this World Pupils can draw a diagram or use a model to describe planetary orbits. Pupils can draw a diagram or use a model to describe the Moon's orbit around the Earth. Pupils can use a diagram or model to explain why the Sun seems to travel across the sky, and what causes day and night. Pupils can, with support, answer questions using evidence gathered from different types of scientific enquiry. Pupils can explain that gravity causes objects to fall towards Earth.	Material World Show how the original materials can be retrieved from each of these changes. Pupil can start to use labelled diagrams to show more complex outcomes. Pupil can, with prompting, use various ways to record complex evidence. Pupil can, with prompting, write a conclusion using evidence and identifying causal links. Identify reactants and products of chemical changes and recognise these as being irreversible.	Let's get Moving Describe the effect of gravity on unsupported objects. Pupil can identify and manages variables, e.g. when exploring falling paper cones. Pupils can, with support, describe how motion may be resisted by air resistance, water resistance or friction. Pupils can describe how some devices may turn a smaller force into a larger one. Pupil can answer questions using evidence gathered from different types of scientific enquiry, e.g. comparing life cycles of different plants using change over time, surveys and secondary research.	Circle of Life Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships (+) Answer questions using evidence gathered from different types of scientific enquiry. Comparing the stages of human development to chosen animal. Record data using diagrams, keys, tables and charts.	Growing up and Growing Old Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships (+) Answer questions using evidence gathered from different types of scientific enquiry. Comparing the stages of human development to chosen animal. Record data using diagrams, keys, tables and charts. Pupil can show how evidence supports a conclusion, e.g. researching gestation periods of various mammals and relating them to adult mass.	Revisit/ working scientifically Refer to previous units.
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Year 6	Classifying Critters Pupil can identify how an idea is supported or refuted by evidence Pupil can identify how an idea is supported or refuted by evidence Pupil can answer questions using evidence gathered from different types of scientific enquiry Pupil can write a conclusion using evidence and identifying causal links Pupil can display and present key findings from enquiries orally and in writing.	Electrifying Can use labelled diagrams Answer questions using gathered evidence Record data in various ways Can write a conclusion using causal links Can display and present key findings Plan and use appropriate equipment	Let it Shine Label diagrams on how we see (eye) Take measurements such as distance Measuring distance and size of shadows Display and present key findings on how light is reflected Plan different types of scientific enquiries to answer questions	Evolution and Inheritance Pupil can use labelled diagrams to show complex outcomes, e.g. relating specific adaptations of organisms to environmental factors. Pupil can display and present key findings from enquiries orally and in writing, e.g. deciding how well classifications fit unfamiliar animals and plants. Pupil can, in conclusions, indicate how trustworthy they are.	Revisit/ working scientifically Refer to previous units.	Staying Alive Pupil can use labelled diagrams to show complex outcomes Pupil can answer questions using evidence gathered from different types of scientific enquiry, e.g. operation of circulatory system from experiment, survey and secondary research. Pupil can identify situations in which taking repeat readings will improve the quality of evidence. Pupil can use appropriate equipment. Pupil can display and present key findings from enquiries orally and in writing
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