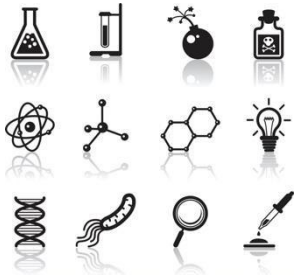
Progression Framework – Science



Curriculum Themes

We follow a four-year curriculum cycle. Each topic theme falls under a termly category

- Autumn – Me and My World
- Spring – The Wider World
- Summer – Action and Adventure

The curriculum theme titles are listed in the table below. Teachers use the subject framework to inform the learning intent for their individual classes in the form of medium-term plans. These frameworks ensure that there is a clear progression in skills and knowledge for each subject area.

Autumn - **Me and My World**	Spring - **The Wider World**	Summer - **Action and Adventure**
Year 1		
All About Me	*Come Fly with Me*	*Pirates*
Year 2		
Help is at Hand	*Going Wild*	*Time Travel*
Year 3		
Unity in the Community	*Global Warning*	*To Infinity and Beyond*
Year 4		
Law and Order	*Under the Sea*	*Superheroes*

The Science curriculum is broken down into 11 key areas: When deciding on their termly learning intent, teachers should ensure that all areas of the framework are covered equally throughout the year.

Milestone 1	Milestone 2	Milestone 3	Milestone 4	Milestone 5	Milestone 6	Milestone 7
Animals Including Humans						
AH.1.1 - Name and describe animals that live in different habitats. **AH.1.2** - Describe different habitats. **AH.1.3** - Recognise some environments that are different to the one in which they live. **AH.1.4** - Describe people who are familiar to them. **AH.1.5** - Learn about how to take care of themselves. **AH.1.6** - Talk about members of their immediate family and community. **AH.1.7** - Name and describe people who are familiar to them	**AH.2.2** - Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals **AH.2.2** - Identify and name a variety of common animals that are carnivores, herbivores and omnivores **AH.2.3** - Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) **AH.2.4** - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**AH.3.1** - Notice that animals, including humans, have offspring which grow into adults **AH.3.2** - Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) **AH.3.3** - Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	**AH.4.1** - Understand that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat **AH.4.2** - Identify that humans and some other animals have skeletons and muscles for support, protection and movement	**AH.5.1** - Describe the simple functions of the basic parts of the digestive system in humans **AH.5.2** - Identify the different types of teeth in humans and their simple functions **AH.5.3** - Construct and interpret a variety of food chains, identifying producers, predators and prey	**AH.6** - Describe the changes as humans develop to old age.	**AH.7.1** - Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood **AH.7.2** - Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function **AH.7.3** - Describe the ways in which nutrients and water are transported within animals, including humans.
Plants						
	P.2.1 - Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees **P.2.2** - Identify and describe the basic structure of a variety of common flowering plants, including trees.	**P.3.1** - Observe and describe how seeds and bulbs grow into mature plant **P.3.2** - Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**P.4** - Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers	**P.5** - Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant	**P.6** - Investigate the way in which water is transported within plants	**P.7** - Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

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Living Things and Their Habitats						
LTH.1.1 -Explore the plants in the surrounding natural environment. **LTH.1.2** - Explore the animals in the surrounding natural environment. **LTH.1.3** - Explore plants and animals in a contrasting natural environment.	**LTH.2.1** - Draw information from a simple map. **LTH.2.2** - Explore the natural world around them **LTH.2.3** - Describe what they see, hear and feel whilst outside. **LTH.2.4** - Recognise some environments that are different to the one in which they live	**LTH.3.1** - Explore and compare the differences between things that are living, dead, and things that have never been alive **LTH.3.2** - 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	**LTH.4.1** - Identify and name a variety of plants and animals in their habitats, including microhabitats **LTH.4.2** - 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.	**LTH.5.1** - Recognise that living things can be grouped in a variety of ways **LTH.5.2** - Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment **LTH.5.3** - Recognise that environments can change and that this can sometimes pose dangers to living things.	**LTH.6.1** - Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird **LTH.6.2** - Describe the life process of reproduction in some plants and animals	**LTH.7.1** - Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals **LTH.7.2** - Give reasons for classifying plants and animals based on specific characteristics.
Seasonal Changes						
SC.1.1 - Play and explore outside in all seasons and in different weather. **SC.1.2** - Observe living things throughout the year. **SC.1.3** - Explore the natural world around me.	**SC.2.1** - Describe what they see, hear and feel whilst outside. **SC.2.2** - Understand the effect of changing seasons on the natural world around me	**SC.3** - Observe changes across the 4 seasons	**SC.4** - Observe and describe weather associated with the seasons and how day length varies			
Forces						
F.1.1 - Explore how to change how things work. **F.1.2** - Explore how the wind can move objects. **F.1.3** - Explore how objects move in water. **F.1.4** - Explore the natural world around them.	**F.2** - Describe what they see, hear and feel whilst outside	**F.3** - Compare how things move on different surfaces	**F.4.1** - Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance **F.4.2** - Observe how magnets attract or repel each other and attract some materials and not others **F.4.3** - Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials	**F.5.1** - Describe magnets as having 2 poles **F.5.2** - Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.	**F.6.1** - Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object **F.6.2** - Identify the effects of air resistance, water resistance and friction, that act between moving surfaces	**F.7** - Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.

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Light						
L.1.1 - Explore shadows. **L.1.2** - Explore rainbows.	**L.2** - Describe what they see, hear and feel whilst outside	**L.3** - Recognise that they need light in order to see things and that dark is the absence of light	**L.4** - Understand that light is reflected from surfaces	**L.5** - Recognise that light from the sun can be dangerous and that there are ways to protect their eyes	**L.6.1** - Recognise that shadows are formed when the light from a light source is blocked by an opaque object **L.6.2** - Find patterns in the way that the size of shadows change	**L.7.1** - Recognise that light appears to travel in straight lines **L.7.2** - Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye **L.7.3** - 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 **L.7.4** - Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Sound						
S.1.1 - Listen to sounds outside and identify the source **S.1.2** - Make sounds	**S.2** - Describe what they see, hear and feel whilst outside.	**S.3** - Identify how sounds are made, associating some of them with something vibrating		**S.5** - Recognise that vibrations from sounds travel through a medium to the ear	**S.6.1** - Find patterns between the pitch of a sound and features of the object that produced it **S.6.2** - Find patterns between the volume of a sound and the strength of the vibrations that produced it	**S.7.1** - Recognise that sounds get fainter as the distance from the sound source increases.

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Earth and Space						
ES.1 - Explore the natural world around them.	**ES.2** - Describe what they see, hear and feel whilst outside	**ES.3** - Learn about space travel	**ES.4** - Learn about the Earth, Sun, Moon, planets and stars	**ES.5** - Describe the movement of the Earth and other planets relative to the Sun in the solar system	**ES.6** - Describe the movement of the Moon relative to the Earth	**ES.7.1** - Describe the Sun, Earth and Moon as approximately spherical bodies **ES.7.2** - Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.
Electricity						
				EL.5.1 - Identify common appliances that run on electricity **EL.5.2** - Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers **EL.5.3** - 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 batter	**EL.6.1** - Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit **EL.6.2** - Recognise some common conductors and insulators, and associate metals with being good conductors.	**EL.7.1** - Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit **EL.7.2** - 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 **EL.7.3** - Use recognised symbols when representing a simple circuit in a diagram.

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Materials						
M.1.1 - Explore a range of materials, including natural materials. **M.1.2** - Make objects from different materials, including natural materials. **M.1.3** - Explore the natural world around them	**M.2.1** - Describe what they see, hear and feel whilst outside **M.2.2** - Observe, measure and record how materials change when heated and cooled. **M.2.3** - Compare how materials change over time and in different conditions. **M.2.4** - Distinguish between an object and the material from which it is made **M.2.5** - Identify a variety of everyday materials, including wood, plastic, glass, metal, water, and rock **M.2.6** - Describe the simple physical properties of a variety of everyday materials **M.2.7** - Compare and group together a variety of everyday materials on the basis of their simple physical properties	**M.3.1** - Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses **M.3.2** - Investigate how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**M.4.1** - Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties **M.4.2** - Describe in simple terms how fossils are formed when things that have lived are trapped within rock **M.4.3** - Recognise that soils are made from rocks and organic matter	**M.5.1** - Compare and group materials together, according to whether they are solids, liquids or gases **M.5.2** - 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) **M.5.3** - Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	**M.6.1** - 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 **M.6.2** - Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution **M.6.3** - Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	**M.7.1** - Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic **M.7.2** - Demonstrate that dissolving, mixing and changes of state are reversible changes **M.7.3** - 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.

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Working Scientifically						
WS.1.1 - Explore the natural world around them	**Asking Questions** WS.2.1 - Explore the world around them and raise their own simple questions WS.2.2 - Start to ask questions about the world around them **Observing** WS.2.3 - With guidance, they should begin to notice patterns and relationships Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying) **Investigate** WS.2.4 - Experience different types of science enquiries, including practical activities WS.2.5 - Begin to recognise different ways in which they might answer scientific questions WS.2.6 - Carry out simple tests WS.2.7 - Follow instructions safely **Evaluate and Explain** WS.2.8 - Record simple data WS.2.9 - Use their observations and ideas to suggest answers to questions WS.2.10 - Talk about what they have found out and how they found it out	**Asking Questions** WS.3.1 - Respond to suggestions with own ideas **Observing** WS.3.2 - Observe closely using simple equipment with help, observe changes over time **Investigate** WS.3.3 - Ask people questions and use simple secondary sources to find answers WS.3.4 - Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data **Evaluate and Explain** WS.3.5 - Use drawings and charts to show their findings WS.3.6 - With guidance they can use scientific language to explain their findings WS.3.7 Say whether what happened was what they expected.	**Asking Questions** WS.4.1 - Raise their own relevant questions about the world around them WS.4.2 - React to a range of scientific experiences including different types of science enquiries to answer questions **Observing** WS.4.3 - Make systematic and careful observations WS.4.4 - Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used WS.4.5 - Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them **Investigate** WS.4.6 - Set up simple practical enquiries, comparative and fair test WS.4.7 - Recognise when a simple fair test is necessary and help to decide how to set it up WS.4.8 - Talk about criteria for grouping, sorting and classifying; and use simple keys **Evaluate and Explain** WS.4.9 - With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions	**Asking Questions** WS.5.1 - Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions **Observing** WS.5.2 -Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers/thermometers appropriately WS.5.3 - Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data **Investigate** WS.5.4 - Recognise when and how secondary sources (books, internet) might help them to answer questions that cannot be answered through practical investigations WS.5.5 - Carry out fair tests with some help, recognising and explaining what makes them fair **Evaluate and Explain** WS.5.6 - With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have	**Asking Questions** WS.6.1 - Use their science experiences to explore ideas and raise different kinds of questions WS.6.2 - Talk about how scientific ideas have developed over time **Observing** WS.6.3 - Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs WS.6.4 - Make a series of observations and measurements and vary one factor while keeping others the same. **Investigate** WS.6.5 - Decide on an appropriate approach, including using a fair test to answer a question. WS.6.6 - Select suitable equipment and information from that provided. WS.6.7 - Select and use methods that are adequate for the task. WS.6.8 -Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment **Evaluate and Explain**	**Asking Questions** WS.7.1 - Make links between concepts **Observing** WS.7.2 - Record observations, to support comparisons and measurements using tables and bar charts and begin to plot points to form simple graphs. **Investigate** WS.7.3 - Following instructions, taking action to control obvious risks to themselves. WS.7.4 - Select and use methods to obtain data systematically. WS.7.5 - Recognise hazard symbols and make, and act on, simple suggestions to control obvious risks to themselves and others. **Evaluate and Explain** WS.7.6 - Suggest improvements to work, giving reasons. WS.7.7 - Evaluate their working methods to make practical suggestions for improvements. WS.7.8 - Reflect on their results and consider whether they are valid

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			WS.4.10 - Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions **WS.4.11** - With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. **WS.4.12** - Suggest improvements to their work	collected and finding ways of improving what they have already done. Suggest improvements to their work	**WS.6.9** - Communicate conclusions using appropriate scientific language Identify scientific evidence that has been used to support or refute ideas or arguments Interpret data containing positive and negative numbers. **WS.6.10** - Begin to relate conclusions to patterns in data, including graphs, and to scientific knowledge and understanding. **WS.6.11** - Analyse findings to draw scientific conclusions that are consistent with the evidence. **WS.6.12** - Communicate these using scientific and mathematical conventions and terminology	