The Valley Primary School

Whole School Science Curriculum 2022-2023.

Science	Autumn	Spring	Summer
Class One	**Who am I? Autumn 1** **Learning objectives:** *Identify, name, draw and label the basic parts of the human body. *Say which part of the body is associated with each sense. **Working scientifically skills:** *Observe closely, using simple equipment. *Identify and classify. *Gather and record data to help in answering questions. **EYFS Objectives** **UTW – The Natural World** *Talk about what they see, in more depth, using a wide vocabulary. **C&L – Speaking** *Learn new vocabulary **Expressive A&D – Creating with Materials** *To draw with increasing complexity and detail, such as representing a face with a circle and including details.	**Polar Places Spring 1** **Learning objectives:** *Identify and name a variety of animals including fish, amphibians, reptiles, birds and mammals. *Identify and name common animals that are carnivores, herbivores and omnivores. *Describe and compare the structure of a variety of common animals. *Describe the simple properties of a variety of everyday materials. *Compare and group together a variety of everyday materials on the basis of their simple properties. **Working scientifically skills:** *Ask simple questions and recognise that they can be answered in different ways. *Perform simple tests. Identify and classify. *Use their observations and ideas to suggest answers to questions **EYFS Objectives** **UTW – The Natural World** *Understand the effect of changing seasons in a contrasting environment. *Understand the key features of the life cycle of a plant and an animal. *Record their observations of plants and animals through drawings and labels. *Begin to sort animals and plants by their features. **Expressive A&D – Creating with Materials**	**On Safari Summer 1** **Learning objectives:** *Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. *Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. *Identify and name a variety of common animals that are carnivores, herbivores and omnivores. *Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). **Working scientifically:** *Ask simple questions and recognise that they can be answered in different ways. *Observe closely, using simple equipment. *Perform simple tests. *Identify and classify. *Gather and record data to help in answering questions. **EYFS Objectives** **C&L – Listening, Attention and Understanding** *Make comments about what they have heard and ask questions to clarify their understanding. **C&L - Speaking** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.

	Celebrations Autumn 2 **Learning objectives:** *Say which part of the body is associated with each sense. *Distinguish between an object and the material from which it is made. *Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. *Describe the simple physical properties of a variety of everyday materials. *Identify and describe the basic structure of a variety of common plants, including trees. **Working scientifically skills:** *Observe things using simple equipment. *Identify and classify. *Perform simple tests. *Use observations and ideas to suggest answers to questions. *Gather and record data to help in answering questions.	*Return to and build on their previous learning, refining ideas and developing their ability to represent them **C&L – Speaking** *Use new vocabulary in different contexts *Articulate their ideas and thoughts in well-formed sentences *Use talk to help work out problems and organise thinking and activities. **C&L – Listening, Attention and Understanding** *Understand simple questions about 'who', 'what', 'where', 'why' and 'how' **Plants and Animals Spring 2** **Learning objectives:** *Plants Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. *Identify and describe the basic structure of a variety of common flowering plants, including trees. Animals (including humans) *Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. *Identify and name a variety of common animals that are carnivores, herbivores and omnivores. *Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). **Working scientifically skills:** *Ask simple questions and recognise that they can be answered in different ways. *Observe closely, using simple equipment.	**C&L – Listening, Attention and Understanding** *Explore the natural world around them, making observations and drawing pictures of animals and plants *Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; *Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. **Holiday Summer 2** **Learning objectives:** *Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. *Identify and name a variety of common animals that are carnivores, herbivores or omnivores. *Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). *Distinguish between an object and the material from which it is made. *Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock. *Describe the simple physical properties of a variety of everyday materials. *Compare and group together a variety of everyday materials on the basis of their simple physical properties. **Working scientifically skills:**

	EYFS Objectives **UTW - The Natural World** *Describe what they see, hear and feel whilst outside *Talk about the differences between materials and changes they notice. *Explore materials with similar and/or different properties *To begin to make use of props and materials when acting out a simple stories and events. **UTW – Past and Present** *Begins to talk about a special time for example festivals, celebrations **Expressive A&D – Creating Materials** *Use their imagination as they consider what they can do with different materials for a purpose. *Use their imagination as they consider what they can do with different materials for a purpose. **Expressive A&D Being Imaginative and Expressive** *Develop storylines in their pretend play.	*Perform simple tests. *Identify and classify. *Use their observations and ideas to suggest answers to questions. *Gather and record data to help in answering questions. **EYFS Objectives** **UTW – The Natural World** *Understand the key features of the life cycle of a plant and an animal. *Record their observations of plants and animals through drawings and labels. *Begin to sort animals and plants by their features. **Expressive A&D – Creating with Materials** *To talk to others in depth about what they have created and how they have achieved this. *Return to and build on their previous learning, refining ideas and developing their ability to represent them. **C&L Speaking** *Use new vocabulary in different contexts *Articulate their ideas and thoughts in well-formed sentences **C&L Listening, Attention and Understanding** *Understand simple questions about 'who', 'what', 'where', 'why' and 'how'	*Ask simple questions and recognise that they can be answered in different ways. *Observe closely, using simple equipment. *Perform simple tests. *Identify and classify. *Use observations and ideas to suggest answers to questions. *Gather and record data to help in answering questions. **EYFS Objectives** **UTW – The Natural World** *Explore the natural world around them, making observations and drawing pictures of animals and plants *Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; **C&L Speaking** *Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher.

Class Two	Rocks, Soils and Fossils Autumn 1	Lights and Shadows Spring 1	Forces and Magnets Summer 1
	Learning objectives: *Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. *Describe in simple terms how fossils are formed when things that have lived are trapped within rock. *Recognise that soils are made from rocks and organic matter. **Working scientifically:** *Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. *Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment. *Gather, record, classify and present data in a variety of ways to help in answering questions. *Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	**Learning objectives:** *Recognise that we need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. *Recognise that light from the Sun can be dangerous and that there are ways to protect the eyes. *Recognise that shadows are formed when the light from a light source is blocked by a solid object. *Find patterns in the way that the sizes of shadows change. **Working scientifically skills:** *Set up simple practical enquiries, comparative and fair tests. *Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. *Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. *Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	**Learning objectives:** *Compare how things move on different surfaces. *Notice that some forces need contact between two objects, but magnetic forces can act at a distance. *Observe how magnets attract or repel each other and attract some materials and not others. *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. *Describe magnets as having two poles. *Predict whether two magnets will attract or repel each other, depending on which poles are facing. **Working scientifically skills:** *Ask relevant questions and use different types of scientific enquiries to answer them. *Set up simple practical enquiries, comparative and fair tests. *Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. *Gather, record, classify and present data in a variety of ways to help in answering questions. *Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. *Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

	Food and our Bodies Autumn 2 **Learning objectives:** *Identify 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. *Identify that humans and some other animals have skeletons and muscles for support, protection and movement. **Working scientifically:** *Gather, record, classify and present data in a variety of ways to help in answering questions. *Record findings using simple scientific language, drawings, labelled diagrams, keys, bar graphs and tables. *Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	**How does your garden grow? Spring 2** **Learning objectives:** *Identify and describe the functions of different parts of flowering plants: roots, stem / trunk, leaves and flowers. *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. *Investigate the way in which water is transported within plants. *Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **Working scientifically skills:** *Ask relevant questions and use different types of scientific enquiries to answer them. *Set up simple practical enquiries, comparative and fair tests. *Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. *Gather, record, classify and present data in a variety of ways to help in answering questions. *Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. *Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. *Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. *Identify differences, similarities or changes	**The Nappy Challenge Summer 2** **Working scientifically skills:** *Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers. *Gather, record, classify and present data in a variety of ways to help in answering questions. *Ask relevant questions and use different types of scientific enquiries to answer them. *Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. *Set up simple practical enquiries, comparative and fair tests. *Use straightforward scientific evidence to answer questions or to support their findings.

		related to simple scientific ideas and processes. *Use straightforward scientific evidence to answer questions or to support their findings.	
Class Three	**Out of this World Autumn 1** **Learning Objectives:** *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. **Working scientifically skills:** *Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. *Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. *Record data and results of increasing	**Circle of Life Spring 1** **Learning Objectives:** *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. **Working scientifically skills:** *Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. *Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. *Use test results to make predictions to set up further comparative and fair tests. *Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.	**Growing up and Growing Old Summer 1** **Learning Objectives:** *Describe the changes as humans develop to old age. **Working scientifically skills:** *Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. *Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. *Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

	complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. *Use test results to make predictions to set up further comparative and fair tests. *Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. *Identify scientific evidence that has been used to support or refute ideas or arguments. **Material World Autumn 2** **Learning objectives:** *Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets. *Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. *Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. *Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. *Demonstrate that dissolving, mixing and changes of state are reversible changes. **Working scientifically skills:** *Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. *Take measurements, using a range of scientific equipment, with increasing accuracy and	*Identify scientific evidence that has been used to support or refute ideas or arguments. **Let's Get Moving Spring 2** **Learning Objectives:** *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. **Working scientifically skills:** *Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. *Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. *Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. *Use test results to make predictions to set up further comparative and fair tests.	**Amazing Changes Summer 2** **Learning objectives:** *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. **Working scientifically skills:** *Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. *Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. *Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. *Use test results to make predictions to set up further comparative and fair tests. *Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in

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