Science Curriculum Overview

Biology Chemistry Physics

Cycle A

	Class 1 EYFS	Class 2 Year 1/2	Class 3 Year 3/4	Class 4 Year 5/6
Autumn 1	Senses/Living Things	Everyday Materials Uses of Everyday Materials	Light	Living Things and their Habitats
Autumn 2	Materials		Animals including Humans	Electricity
Spring 1	Lifecycles	Animals including Humans	Electricity	Earth and Space
Spring 2	Changing Materials	Plants	Plants	Light
Summer 1	Forces			
Summer 2	Food/Senses	Animals including Humans	Animals including Humans Living Things and their Habitats	Animals including Humans

Cycle B

	Class 1 EYFS	Class 2 Year 1/2	Class 3 Year 3/4	Class 4 Year 5/6
Autumn 1	Outdoor Environments	Everyday Materials Uses of Everyday Materials	Sound	Properties and Changes of Materials
Autumn 2	Materials		Animals including Humans	Living Things and their Habitats
Spring 1	Food/Senses	Animals including Humans	Forces and Magnets	Evolution and Inheritance
Spring 2	Plants	Seasonal Change		Forces
Summer 1	Sound	Living Things and their Habitats	Rocks	
Summer 2	Materials		States of Matter	Animals including Humans Evolution and Inheritance

Biology Chemistry Physics

Science LTP - Cycle A

Biology Chemistry Physics

	EYFS (N/R)	Year 1/2	Year 3/4	Year 5/6
Autumn term 1	Senses and Living Things	Everyday Materials Uses of Everyday Materials -	Light	Living Things and their Habitats
	3 & 4 Year Olds Statements • Use all their senses in hands-on exploration of natural materials • Talk about what they see using a wide vocabulary • Begin to understand the need to respect and care for the natural environment and all living things **Reception Statements** • Learn new vocabulary • Articulate their ideas and thoughts in well-formed sentences • Use new vocabulary in different contexts • Explore the natural world around them • Describe what they see, hear and feel while they are outside • Ask questions to find out more and to check what has been said to them	**Y1 Objectives** • 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 a 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. **Y2 Objectives** • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	**Y3 Objectives** • Recognise that they 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 wats to protect their eyes • Recognise that shadows are formed when the light from a light source if blocked by a solid object • Find patterns in the way that the size of shadows change	**Y5 Objectives** • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • Describe the life processes of reproduction in some plants and animals

	ELG • Make comments about what they have heard and ask questions to clarify their understanding • Explore the natural world around them, making observations and drawing pictures of animals and plants	• Find out how the shapes of solid objects made from some materials can be changes by squashing, bending, twisting & stretching.		
	Core Knowledge To know the names of the different senses To know what they can see, smell, hear, touch, taste within their school environment	Core Knowledge To know and name the material which the object is made from To know simple properties of everyday materials and use scientific language to describe To know how to sort materials into at least 2 groups To know how to perform simple tests and make predictions, observations and conclusions in relation to a question To know different uses of everyday materials To know the suitability of different everyday materials for a purpose To know how different materials can be changed (twisted, melted, frozen etc)	Core Knowledge To know that there are different light sources To know we need light to see To know the name of some parts of the eye To know that light travels in a straight line To know how a shadow is formed To know how/why shadows change in size To know how surfaces reflect light To know the definition and identify opaque, translucent and transparent objects	Core Knowledge To know the functions of different parts of flowers To know the difference between asexual and sexual reproduction To know the process of a plant being pollinated To know the stages of a mammal, bird, insect and amphibian's lifecycle To know how mammals, birds, insects and amphibians reproduce
	Working Scientifically • Ask basic questions	Working Scientifically • Ask their own simple questions about what they notice and	Working Scientifically • Asking relevant questions and using different types	Working Scientifically • Planning different types of scientific enquiries to answer questions,

	• Perform a simple exploration with adult guidance/independently • Use different methods of recording results (oral, concrete or mark making) • Use scientific vocabulary with support.	recognising that they can be answered in different ways • Observing closely, using simple equipment (changes over a period of time, noticing patterns) • Performing simple tests (simple comparative tests) • Identifying and classifying (grouping and classifying) • Using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions • Begin to use simple scientific language to share what they've found out	of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers (if appropriate) • Setting up simple practical enquiries comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a	including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where necessary • Using test results to make predictions to set up further comparative and fair tests • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

			variety of ways to help in answering questions • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use scientific vocabulary correctly and with some confidence	• Use scientific vocabulary correctly and accurately.
	Key Vocabulary see, hear, touch, taste, listen, smell, light, dark, rough, smooth, soft, rough, bright, loud, noisy, quiet, strong, fresh, colour, see through, colourful, hot, warm, dry, bushy, damp, wet, spiky, cool, bumpy	**Key Vocabulary** material, metal, plastic, wood, paper, glass, rock, fabric, sand, hard, soft, rough, smooth, shiny, dull, bendy, waterproof, strong, weak, sort, stretchy, magnetic, not magnetic, lets light through, transparent, natural, man-made, change, bake, bend, twist, stretch, squash, heat, cool, freeze, melt, boil	**Key Vocabulary** light, shadow, dark, transparent, opaque, direction, light travels, translucent, shortest, longest, highest, object, material, light source, sun, night, day	**Key Vocabulary** reproduce, reproduction, stamen, stigma, sepal, petal, ovary, pollen, style, bulb, roots, anther, filament, germinate, fertilise, pollinate, disperse, life cycle, baby, child, adolescent, adult, gestation, gametes, plantlet, cuttings, embryo, penis, vagina, egg, pregnancy, fertilise, sperm, cells, asexual, sexual
	TAPS Assessment Senses Walk	**TAPS Assessment** Floating and Sinking	**TAPS Assessment** Make Shadows	**TAPS Assessment** Lifecycles
	Why here? Why now? Pupils will be exploring their new classroom environment and therefore this will support them with learning about their environment.	**Why here? Why now?** Pupils will be able to use knowledge related to materials to apply within their history driver in Autumn 2 to explain the suitability of materials used in the Great Fire of London. This will provide a basis for developing	**Why here? Why now?** Pupils will use their knowledge of properties materials in KS1 to support their learning of light. As the weather during this term is still relatively good the children will be able to see shadows unlike at an alternative part of the year.	**Why here? Why now?** Pupils will consolidate and extend their knowledge from EYFS and KS1 in learning about living things and their habitats. They will be able to link their learning from geography to study various habitats from across the globe.

		their knowledge of materials in Cycle B within a different context.		
Autumn term 2	Materials **3 & 4 Year Old Statements** • Use all their senses in hands on exploration of natural materials • Explore collections of materials with similar and/or different properties • Talk about what they see, using a wide vocabulary • Talk about differences between materials and changes they notice **Reception Statements** • Learn new vocabulary • Articulate their ideas and thoughts in well-formed sentences • Explore the natural world around them • Describe what they see, hear and feel while they are outside • Ask questions to find out more and to check what has been said to them **ELG** • Make comments about what they have heard and ask questions to	Autumn term 1 unit continued over a full term.	Animals including humans **Y4 Objectives** • Describe the simple functions of the basic parts of the digestive system in humans • Identify the different types of teeth in humans and their simple functions	Electricity **Y6 Objectives** • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off positions of switches • Use recognised symbols when representing a simple circuit in a diagram

	clarify their understanding • Explore the natural world around them, making observations and drawings pictures of animals and plants • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter			
	Core Knowledge To know the name of different materials To know what happens when they mix different materials together		**Core Knowledge** To know the name of different human teeth To know the functions of different human teeth To know what tooth decay is To know how to look after teeth To know the names of the basic parts of the human digestive system To know the basic functions of the human digestive system	**Core Knowledge** To know circuit symbols and use them to drawl circuit diagrams To know what happens when voltage is increased or decreased To know what happens when number of cells are increased or decreased
	Working Scientifically • Ask basic questions • Perform simple explorations with adult guidance/independently • Observe changes and outcomes		**Working Scientifically** • Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to	**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary

	• Use different methods of recording results (oral, concrete, mark making) • Using observations to begin to explain what/why something happens with adult guidance • Use scientific vocabulary with support		answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers (if appropriate) • Setting up simple practical enquiries comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Reporting on findings from enquiries, including	• Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where necessary • Using test results to make predictions to set up further comparative and fair tests • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

			oral and written explanations, displays or presentations of results and conclusions • Use scientific vocabulary correctly and with some confidence	• Use scientific vocabulary correctly and accurate
	Key Vocabulary wood, metal, brick, ice, cloth, plastic, stone, paper, metal, water, glass, fabric, hard, squashy, smooth, bumpy, soft, waterproof, not waterproof, absorbent, non-absorbent, shiny, stretchy, stiff, dull, see through, not see through		**Key Vocabulary** teeth, incisor, premolar, molar, canine, root, decay, plaque, enamel, digest, tongue, saliva, salivary glands, oesophagus, stomach, liver, pancreas, gall bladder, small intestine, large intestine, rectum, anus, faeces, organ	**Key Vocabulary** circuit, complete circuit, conductor, insulator, symbol, circuit diagram, electricity, component, voltage, amps, resistance, electrons, volts (V), current, filament, dimmer, brighter, louder, quieter
	TAPS Assessment Mixing Materials		**TAPS Assessment** Teeth in liquid	**TAPS Assessment** Conductive dough
	Why here? Why now? Pupils will be able to use their knowledge of senses to explain the changes when mixing materials.		**Why here? Why now?** In this unit pupils will develop their scientific understanding of the teeth, their function and link to staying healthy.	**Why here? Why now?** This unit extends pupils knowledge from Y4 as they become more proficient at understanding how electricity works and can build more complex circuits. They can record more accurate data and link to computing through data logging.
Spring term 1	Lifecycles	Animals including Humans	Electricity	Earth and Space
	3 & 4 Year Old Statements	**Y1 Objectives** Identify, name, draw and label the basic body parts of the human	**Y4 Objectives**	**Y5 Objectives** • Describe the movement of the earth, and other

	• Talk about what they see, using a wide vocabulary • Understand the key features of the lifecycle of a plant and an animal • Plant seeds and care for growing plants • Begin to understand the need to respect and care for the natural environment and all living things **Reception Statements** • Learn new vocabulary • Ask questions to find out more and to check what has been said to them • Articulate their ideas and thoughts in well-formed sentences • Describe events in some detail • Use new vocabulary in different contexts • Explore the natural world around them • Describe what they see, hear and feel while they are outside ELG • Make comments about what they have heard	body and say which part of the body is associated with each sense.	• 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 a lamp will light in a simple series circuit, based on whether or not the lamp is part of a completer loop with a battery. • Recognise that a switch opens and closes a circuit and associate this with whether a lamp lights in a simple series circuit • Recognise some common conductors and insulators	planets, relative to the sun in the solar system. • Describe the movement of the moon relative to the Earth • Describe the Sun, Earth and the Moon as approximately spherical bodies • Use the idea of the Earth's rotation to explain the day and night and the apparent movement of the sun across the sky.

	and ask questions to clarify their understanding • Explore the natural world around them, making observations and drawing pictures of animals and plants • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter			
	Core Knowledge To know and state the different stages of lifecycles (frogs, butterflies, chickens, human etc) with adult support To know that living things change as they grow	**Core Knowledge** To know the names of different parts of the human body To know the locations of different human body parts To know the jobs of different human body parts To know which body part each sense is related to	**Core Knowledge** To know what defines an electrical appliance and name them To know which electrical items are mains or battery powered To know what the different circuit components are and explain their role To know how to build a series circuit To know whether a series circuit is complete or incomplete and explain why To know what electrical conductors are and give examples To know what electrical insulators are and give examples To know what switches are and explain how they work in a circuit	**Core Knowledge** To know the names of the planets in the solar system To know some features of different planets in the solar system To know that the Sun, Earth and Moon are spherical To know that day and night is due to the Earth rotating To know that different parts of the Earth experience night and day at different times and to be able to explain why To know that the Moon orbits the Earth

	Working Scientifically • Ask basic questions • Perform a simple exploration with adult guidance/independently • Observe changes and outcomes • Identify scientific items • Group objects/living things • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why something happens with adult guidance • Use scientific vocabulary with support.	**Working Scientifically** • Ask their own simple questions about what they notice and recognising that they can be answered in different ways • Performing simple tests (simple comparative tests) • Identifying and classifying (grouping and classifying) • Using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions (using secondary sources to find information) • Begin to use simple scientific language to share what they've found out	**Working Scientifically** • Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers (if appropriate) • Setting up simple practical enquiries comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where necessary • Using test results to make predictions to set up further comparative and fair tests • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs

			• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use scientific vocabulary correctly and with some confidence	• Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Use scientific vocabulary correctly and accurate
	Key Vocabulary life cycle, egg, caterpillar, chrysalis, pupa, butterfly, leaf, frogspawn, tadpole, froglet, frog, pond, egg, hatchling, chick, hen, chicken, nest, light, bean, bean plant, bean flower, bean pod, soil, sunflower, grow, petals, bud, seeds, shoot	**Key Vocabulary** sense, eye, ear, nose, mouth, hand, foot, arm, leg, head, neck, knee, elbow, face, hair, teeth, see, hear, smell, touch, feel, body, human	**Key Vocabulary** mains-powered, battery-powered, plug, appliances, devices, circuit, simple series circuit, complete circuit, incomplete circuit, bulb, cell, wire, buzzer, switch, motor, battery, conductor, insulator	**Key Vocabulary** Earth, Sun, Moon, sphere, spherical bodies, revolve, orbit, spin, rotate, axis, sunrise, sunset, north, south, east, west, planet, solar system, light source, shadow, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, star, satellite, astronomy, sunrise, sunset, time zone
	TAPS Assessment	**TAPS Assessment** Body Parts	**TAPS Assessment** Electric Conductors	**TAPS Assessment** Space Travel Qs

	No TAPS Assessment available this half term			
	Why here? Why now? Pupils will be able to experience the lifecycle of some animals during this half term. They will also be able to use knowledge learnt here within their future golden thread Local History - Farms.	**Why here? Why now?** Pupils will learn about their own bodies and be able to visualise different body parts and what they look like. This will support learning about other animals' body parts and structures in Spring 1 Cycle B.	**Why here? Why now?** In this unit children will develop their understanding of electricity beyond that which they see or use around them. They will begin to investigate how electricity is conducted, and through what materials and be able to build simple circuits.	**Why here? Why now?** Pupils will learn about the vastness of the universe beyond their knowledge of the earth and our world. They will develop their understanding of how the moon affects tides and link this to their work on Trade and ancient civilisations.
Spring term 2	Changing Materials	Plants	Plants	Light
	3 & 4 Year Old Statements • Use all their senses in hands on exploration of natural materials • Explore collections of materials with similar and/or different properties • Talk about what they see, using a wide vocabulary • Talk about differences between materials and changes they notice **Reception Statements** • Learn new vocabulary • Articulate their ideas and thoughts in well-formed sentences • Explore the natural world around them	**Y1 Objectives** • Identify and name a variety of common wild & garden plants, including deciduous and evergreen trees • Identify and describe the basic structure of a variety of common flowering plants, including trees **Y2 Objectives** • Observe and describe how seeds and bulbs grow into mature plants. • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	**Y3 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 & growth (air, light, water, nutrients from soil, & room to grow) & 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 a flowering plant, including pollination, seed	**Y6 Objectives** • Recognise that light appears to travel in straight lines • 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 • 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 • Use the idea that light travels in straight lines to explain why shadows

	• Describe what they see, hear and feel while they are outside • Ask questions to find out more and to check what has been said to them ELG • Explore the natural world around them, making observations and drawings pictures of animals and plants • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter • Make comments about what they have heard and ask questions to clarify their understanding	*(Plant bulbs in Autumn 2 observe regularly throughout year until Summer 1)*	formation and seed dispersal.	have the same shape as the objects that cast them.
	Core Knowledge To know that water can be frozen To know how to describe ice using their observations and senses To know that ice can come in different shapes/sizes To know that ice melts	**Core Knowledge** To know similarities, differences and be able to make observations about plants, bulbs and seeds To identify, name and describe the structure of a flowering plant, tree and other common plants (fruits/vegetables)	**Core Knowledge** To know the names of different parts of flowering plants To know the functions of different parts of flowering plants To know the main stages of a lifecycle of a flowering plant	**Core Knowledge** To know that light travels in straight lines To know that light enables us to see and how this occurs To know that all objects reflect light To know refraction is light bending or changing direction

		To know names of wild and garden plants To know names and be able to identify common deciduous and evergreen trees To know what a plant needs to stay healthy To know the order and be able to describe the lifecycle of a plant (from bulb and seed)	To know and be able to explain the role flowers have in pollination and fertilisation To know the needs for a plant to grow and to be able to explain these To know how water travels in a plant	To know that a prism allows us to see a visible spectrum To know that shadows are the same shape as the objects that cast them and that shadows can change size
	Working Scientifically • Ask basic questions • Perform simple explorations with adult guidance/independently • Observe changes and outcomes • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why things happen with guidance • Use scientific vocabulary with support	**Working Scientifically** • Asking simple questions and recognising that they can be answered in different ways • Observing closely, using simple equipment • Performing simple tests • Identifying and classifying • Using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions • Begin to use scientific language to share what they have found out	**Working Scientifically** • Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers (if appropriate) • Setting up simple practical enquiries comparative and fair tests	**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where necessary • Using test results to make predictions to set up further comparative and fair tests

			• Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use scientific vocabulary correctly and with some confidence	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Use scientific vocabulary correctly and accurate
	Key Vocabulary wood, metal, brick, ice, cloth, plastic, stone, paper, metal, water, glass, fabric, hard, squashy, smooth, bumpy, soft, waterproof, not waterproof, absorbent, non-absorbent, shiny, stretchy, stiff,	**Key Vocabulary** plant, branch, root, stem, trunk, flower, leaf, leaves, petal, soil, seeds, seedling, grow, bulb, water, deciduous, evergreen, germinate, wild, garden, weed, grass, flowering, shoot, seed dispersal,	**Key Vocabulary** transport, evaporation, nutrients, absorb, pollination, pollen, nectar, pollinator, seed dispersal, air, light, water, space, warmth, roots, stem/trunk, fertilisation, stamen, anther, filament, carpel, stigma,	**Key Vocabulary** light, beam, reflect, reflection, opaque, mirror, light travelling, source, travel, block, shadow, straight lines, prism, visible spectrum, light wave, wavelength, refraction

	dull, freeze, melt, wet, dry, bendy, boil, cook, see through, not see through	sunlight, nutrition, light, air, space, water, temperature	style, ovary, ovule, sepal, carbon dioxide	
	TAPS Assessment Frozen Balloons	TAPS Assessment Plant Structure (Spring 2) Plant Growth (Summer 1)	TAPS Assessment Measuring Plants	TAPS Assessment Investigating Shadows
	Why here? Why Now? Pupils will further consolidate their knowledge of senses which they've been building through the terms and be able to learn about a different change of materials whilst applying their knowledge of Autumn 2.	Why here? Why now? Pupils will be able to observe and measure plants growth over a period and it will enable bulbs planted in the autumn term to be in bloom for the pupils. As the learning is continued over two terms it will give the pupils the chance to watch plant growth in real time as well. This is also spread across two terms to ensure full coverage due to Statutory Testing periods in these terms.	Why here? Why now? Pupils will be able to measure a variety of plants and see first hand clear parts of the plant due to many flowering plants being in bloom. This will therefore strengthen their learning comparing to at an alternative point of the year. As the learning is continued over two terms it will give the pupils the chance to watch plant growth in real time.	Why here? Why now? Pupils will use their knowledge of properties materials in LKS2 to support their learning of light. The weather in this term allows the children to investigate shadows easier at different points of the day. This is also spread across two terms to ensure full coverage due to Statutory Testing periods in these terms.
Summer term 1	Forces 3 & 4 Year Old Statements • Understand 'why' questions • Talk about what they see, using a wide vocabulary • Explore how things work • Explore and talk about different forces they can feel Reception Statements • Learn new vocabulary	Unit of learning continued from Spring term 2	Unit of learning continued from Spring term 2	Unit of learning continued from Spring term 2

	• Ask questions to find out more and to check what has been said to them • Articulate their ideas and thoughts in well-formed sentences • Describe events in some detail • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen ELG • Make comments about what they have heard and ask questions to clarify their understanding • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter			
	Core Knowledge To know that some objects can move To know different ways of making objects move			
	Working Scientifically			

	• Ask basic questions • Perform simple explorations with adult guidance/independently • Sort objects into at least 2 groups • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why things happen with guidance • Use scientific vocabulary with support			
	Key Vocabulary push, pull, stretch, rub, force, slide, down, spin, roll, up, move, spring, bounce, float, magnetic			
	TAPS Assessment Toy Forces			
	Why here? Why now? Pupils will be able to reinforce and develop sorting skills learnt during Materials in a different capacity. Pupils will be familiar with different toys/objects in their environment and how they move.			
Summer term 2	Food/Senses	Animals including Humans	Animals including Humans Living Things and their Habitats	Animals including Humans
	3 & 4 Year Old Statements	Y2 Objectives	Y4 Objectives	Y5 Objectives

	• Talk about what they see, using a wide vocabulary • Begin to make sense of their own life-story and family's history • Talk about differences between materials and changes they notice **Reception Statements** • Learn new vocabulary • Ask questions to find out more and to check what has been said to them • Articulate their ideas and thoughts in well-formed sentences • Describe events in some detail • Use new vocabulary in different contexts • Recognise some environments that are different to the one in which they live • Explore the natural world around them • Understand the effect of changing seasons on the natural world around them ELG • Make comments about what they have heard	• 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). • Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.	• Construct and interpret a variety of food chains, identifying producers, predators and prey. • Recognise that living things can be grouped in a variety of ways. • Explore and use classification keys to help group, identify & name a variety of living things in their local & wider environment • Recognise that environments can change and that this can sometimes pose dangers to living things.	• Describe the changes as humans develop from birth to old age ***(to be taught alongside Big Talk)***

	and ask questions to clarify their understanding • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter • 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			
	Core Knowledge To know the 5 different senses To know where food comes from To know how to describe food using our senses To know how different foods are made/grown	**Core Knowledge** To know the names of animals and their offspring To know how animals have their offspring To know the order of a lifecycle of a chosen animal and can describe features of each stage To know different ways in which human grow and develop through their lifecycle To know the basic needs of all animals to survive To know specific needs of animals to survive	**Core Knowledge** To know how to construct a food chain To know how to interpret a food chain To know the producer, prey and predator in a food chain To know how to sort into a Venn Diagram To know how to sort into a Carroll Diagram To know characteristics of living things and use them to sort them by a classification key To know dangers to wildlife in local and wider environments	**Core Knowledge** To know the 6 stages in human development To know the changes in human development (birth= old age) To know the main changes that occur during puberty to males To know the main changes that occur during puberty to females To know similarities and differences between male and female puberty To know the main changes that occur during old age to humans To know that growth happens throughout human development

		To know what happens to the body when we exercise To know the importance of exercise for the body To know the basic food group names To know food names within the basic food groups To know how to be hygienic (washing, brushing teeth) and why this is important	To know how changes to environments affect living things within them	
	Working Scientifically • Ask basic questions • Perform a simple exploration with adult guidance/independently • Observe changes and outcomes • Identify scientific items • Group objects/living things • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why something happens with adult guidance • Use scientific vocabulary with support.	**Working Scientifically** • Ask their own simple questions about what they notice and recognising that they can be answered in different ways • Performing simple tests (simple comparative tests) • Identifying and classifying (grouping and classifying) • Using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions (using secondary sources to find information) • Begin to use simple scientific language to	**Working Scientifically** • Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers (if appropriate) • Setting up simple practical enquiries	**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where necessary • Using test results to make predictions to set up further comparative and fair tests

		share what they've found out	comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use scientific vocabulary correctly and with some confidence	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Use scientific vocabulary correctly and accurate
	Key Vocabulary see, hear, touch, taste, listen, smell, light, dark, rough, smooth, soft, rough, bright, loud, noisy, quiet,	**Key Vocabulary** grow, move, young, reproduce, feed, diet, variety, healthy, unhealthy, exercise, adult, parent,	**Key Vocabulary** producer, consumer, prey, predator, decomposer, food web, organisms, specimen, species, classification,	**Key Vocabulary** gestation, reproduction, sperm, egg, cells, embryo, foetus, uterus, adolescence, puberty,

	strong, fresh, colours, see through, colourful, hot, warm, dry, bushy, damp, wet, spiky, cool, bumpy, sour, sweet, sloppy, crunchy	baby, toddler, child, teenager, offspring, develop, change, basic needs, survive, food, air, balanced diet, hygiene, germs, fruit and vegetables, protein, dairy, carbohydrates, fats	characteristics, key, wing, abdomen, thorax, antenna, segments, mandible, environment, dangers, climate change, natural changes, deforestation, pollution, urbanisation, invasive species, endangered, extinct, fish, bird, mammal, amphibian, reptile, vertebrate, invertebrate	menstruation, adult, menopause, old age, hormones, sweat, breasts, penis, ovaries, pubic hair, genitals, larynx
	TAPS Assessment Butter	TAPS Assessment Hand Spans	TAPS Assessment Local Survey	TAPS Assessment Growth Survey
	Why here? Why now? Pupils will be able to use their knowledge of senses which they've been building up during previous terms and focus more on 'taste' which cannot be accessed as freely. It also relates to food produce in farms which is the title of their Golden Thread topic for this half term.	**Why here? Why now?** Pupils will be able to apply their knowledge of the needs of plants learnt in Spring2/Summer1 and state similarities and differences to the needs of animals. Pupils will be able to apply knowledge of lifecycles learnt in EYFS (Spring 1 Cycle B) to develop their understanding of different animals and their offspring.	**Why here? Why now?** In this unit pupils will build on their learning from KS1 about animals and humans. They will link their learning in science with maths skills through data handling.	**Why here? Why now?** Pupils will be taught this to coincide with the relationships, sex and health education provision provided in the summer term by Big Talk. This will prepare pupils for changes that may begin to happen to their bodies or provide further knowledge to some pupils who changes may have already begun to occur.

Science LTP - Cycle B

Biology Chemistry Physics

	EYFS (N/R)	Year 1/2	Year 3/4	Year 5/6
Autumn term 1	Outdoor Environments	Everyday Materials Uses of Everyday Materials	Sound	Properties and Changes of Materials
	3 & 4 Year Old Statements • Use all their senses in hands-on exploration of natural materials • Explore collections of materials with similar and/or different properties • Talk about what they see, using a wide vocabulary • Begin to understand the need to respect and care for the natural environment and all living things **Reception Statements** • Learn new vocabulary • Ask questions to find out more and to check what has been said to them • Articulate their ideas and thoughts in well-formed sentences • Use new vocabulary in different contexts • Explore natural world around them	**Y1 Objectives** • 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 a 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. **Y2 Objectives** • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	**Y4 Objectives** • Identify how sounds are made, associating some of them with something vibrating. • Recognise that vibrations from sounds travel through a medium to the ear • Find patterns between the pitch of a sound and features of the object that produce it • Find patterns between the volume of a sound and the strength of the vibrations that produced it • Recognise that sounds get fainter as the distance from the sound increases	**Y5 Objectives** • Compare and group together everyday materials on the basis of their properties, including 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

	• Describe what they see, hear and feel while they are outside ELG • Make comments about what they have heard and ask questions to clarify their 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	• Find out how the shapes of solid objects made from some materials can be changes by squashing, bending, twisting & stretching.		uses of everyday materials, including metals, wood and plastic. • 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
	Core Knowledge To know what you will find in a school environment (indoors/outdoors) To know where you will find certain objects To know how to sort objects into groups	**Core Knowledge** To know and name the material which the object is made from To know simple properties of everyday materials and use scientific language to describe To know how to sort materials into at least 2 groups To know how to perform simple tests and make predictions, observations and conclusions in relation to a question	**Core Knowledge** To know what a high and low sound is To know what a loud and quiet sound is To know that sound sources vibrate to make sounds To know that vibrations change when the volume of the sound changes To know how sound travels	**Core Knowledge** To know different materials properties To know which materials are thermal and electrical conductors and insulators To know which materials are magnetic To know which materials are soluble or insoluble To know that some materials can dissolve

		To know different uses of everyday materials To know the suitability of different everyday materials for a purpose To know how different materials can be changed (twisted, melted, frozen etc)	To know what materials, absorb sound To know how an object can make different pitches of sounds To know that distance affects the volume of a sound	To know how to determine if changes are reversible or irreversible To know that some changes to materials create new materials To know the difference between a solid, liquid and gas To know how you can separate different mixtures through filtering, sieving and evaporation To know how to conduct a comparative and fair test
	Working Scientifically • Sort items into at least 2 different groups. • Use different methods of recording your results oral, concrete and mark making • Ask basic questions Use scientific vocabulary with support	**Working Scientifically** • Ask their own simple questions about what they notice and recognising that they can be answered in different ways • Observing closely, using simple equipment (changes over a period, noticing patterns) • Performing simple tests (simple comparative tests) • Identifying and classifying (grouping and classifying) • Using their observations and ideas to suggest answers to questions	**Working Scientifically** • Ask relevant questions and using different types of scientific enquiries to answer them • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment (data loggers) • Setting up simple practical enquiries, comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest	**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where necessary • Using test results to make predictions to set up

		• Gathering and recording data to help in answering questions • Begin to use simple scientific language to share what they've found out	improvements and raise further questions • Recording findings using simple scientific language, drawings, labelled diagrams, bar charts and tables • Reporting on findings from enquiries including oral and written explanations, displays or presentations of results and conclusion • Use scientific language correctly and with some confidence	further comparative and fair tests • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Use scientific vocabulary correctly and accurate
	Key Vocabulary grass, twigs, leaves, flowers, stones, litter, outside, ground, mud, soil, size, colour, shape, material, minibeasts, bird, ladybird, beetle, worm, spider	**Key Vocabulary** material, metal, plastic, wood, paper, glass, rock, fabric, sand, hard, soft, rough, smooth, shiny, dull, bendy, waterproof, strong, weak, sort, stretchy, magnetic, not magnetic, lets light through, transparent, natural, man-made, change, bake, bend, twist, stretch, squash, heat, cool, freeze, melt, boil	**Key Vocabulary** ear, eardrum, vibration, particles, pitch, volume, amplitude, soundwave, quiet, loud, high, low, travel, distance, soundproof, absorb sound	**Key Vocabulary** conductor, insulator, thermal, magnetism, transparent, resistant, dissolve, substance, soluble., insoluble, reversible, irreversible, chemical change, burning, new material, product, sieving, filtering, attraction, melting, freeze, evaporate, condensate, separate, solid, liquid, gas
	TAPS Assessment	TAPS Assessment	TAPS Assessment	TAPS Assessment

	Scavenger Sort	Boat materials	Pitch	Nappies
	Why here? Why now? Pupils will be exploring their new classroom environment and therefore this will support them with learning about their outdoor environment.	**Why here? Why now?** Pupils will be able to use knowledge related to materials to apply within their history driver in Autumn 2 of Explorers and the material of their modes of transportation. Knowledge from Cycle A will be built upon by using different materials and different suitability.	**Why here? Why now?** In this unit pupils will be able to apply their knowledge of music and sound in a scientific way. They will learn how sound is made, travels and its sources. This will enable them to further study human physiology further on in their education.	**Why here? Why now?** Pupils will be able to apply knowledge taught here about changes to materials and apply this within their wider curriculum lessons related to Coastal Erosion within the Golden Thread – Water. They will be able to consider how water changes materials.
Autumn term 2	Materials	Autumn term 1 unit continued over a full term.	Animals including Humans	Living Things and their Habitats
	3 & 4 Year Old Statements • Use all their senses in hands on exploration of natural materials • Explore collections of materials with similar and/or different properties • Talk about what they see, using a wide vocabulary • Talk about differences between materials and changes they notice **Reception Statements** • Learn new vocabulary • Articulate their ideas and thoughts in well-formed sentences • Explore the natural world around them		**Y3 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 animals have skeletons and muscles for support, protection and movement.	**Y6 Objectives** • 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. • Give reasons for classifying plants and animals based on specific characteristics

	• Describe what they see, hear and feel while they are outside • Ask questions to find out more and to check what has been said to them ELG • Explore the natural world around them, making observations and drawings pictures of animals and plants • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter • Make comments about what they have heard and ask questions to clarify their understanding			
	Core Knowledge To know the name of different materials To know what happens when they mix different materials together		**Core Knowledge** To know what animals and humans need to stay healthy To know the names of different food groups and the types of food which are part of these To know the nutrients human need for a healthy diet	**Core Knowledge** To know how to identify characteristics of different living things To know how to group and sort living things based on characteristics and features

			To know how to gather information from food labels To know the names of different types of skeletons To know the advantages and disadvantages of different skeletons To know the main parts of the human skeleton To know how muscles work and be able to explain how they work	To know different types of harmful and helpful microorganisms To know how to identify different types of microorganisms
	Working Scientifically • Ask basic questions • Perform a simple exploration with adult guidance/independently • Observe changes and outcomes • Identify scientific items • Group objects/living things • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why something happens with adult guidance • Use scientific vocabulary with support.		**Working Scientifically** • Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers (if appropriate) • Setting up simple practical enquiries	**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where necessary • Using test results to make predictions to set up further comparative and fair tests

			comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use scientific vocabulary correctly and with some confidence	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Use scientific vocabulary correctly and accurate
	Key Vocabulary wood, metal, brick, ice, cloth, plastic, stone, paper, metal, water, glass, fabric. hard, squashy,		**Key Vocabulary** food groups, fibre, fruit, vegetables, meat, fish, cereals, sugars, fats (saturated and	**Key Vocabulary** microorganisms, bacteria, microscopic, virus, fungi, fungus, mould, antibiotic, yeast, ferment,

	smooth, bumpy, soft, waterproof, not waterproof, absorbent, non-absorbent, shiny, stretchy, stiff, dull, see through, not see through		unsaturated), vitamins, minerals, skeleton, bone, muscles, tendon, joints, biceps, triceps, contract, relax, move, cartilage, vertebrate, invertebrate, endoskeleton, exoskeleton, hydrostatic skeleton, skull, spine, ribs, pelvis, vertebral column, clavicle, scapula, humerus, ulna, radius, femur, tibia, fibula, elbow, wrist, metatarsals, phalanges	microscope, decompose, microbes, variation, flowering plants, non-flowering plants,
	TAPS Assessment Icy Shelter		**TAPS Assessment** Skeleton Qs	**TAPS Assessment** Invertebrate Research
	Why here? Why now? Pupils will be able to develop their knowledge of materials from Cycle A further using different materials within different contexts.		**Why here? Why now?** In this unit pupils will build on knowledge learned in KS1. They will build on their knowledge of healthy foods and keeping healthy and begin to look at what is needed for bodies to be healthy, preparing for further learning in UKS2.	**Why here? Why now?** Now that children know about different species they will learn how to classify different species and look at adaptations made for the habitats they live in, preparing themselves for deeper learning on evolution and for moving into the KS3 curriculum.
Spring term 1	Food/Senses	Animals including Humans	Forces and Magnets	Evolution and Inheritance
	3 & 4 Year Old Statements • Make healthy choices about food drink, activity and toothbrushing • Use all their senses in hands on exploration of natural materials • Talk about what they see using a wide vocabulary **Reception Statements**	**Y1 Objectives** • Identify and name a variety of common animals including fish, amphibians, reptiles, birds & mammals • Identify and name a variety of common animals that are carnivores, herbivores and omnivores	**Y3 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	**Y6 Objectives** • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution • Recognise that living things have changed over time and that fossils provide information about

	• Learn new vocabulary • Articulate their ideas and thoughts in well-formed sentences • Ask questions to find out more and to check what has been said to them • Use new vocabulary in different contexts • Know and talk about the different factors that support their overall health and wellbeing • Describe what they see, hear and feel whilst they are outside ELG • Make comments about what they have heard and ask questions to clarify their understanding • Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices	• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds & mammals, including pets)	• 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	living things that inhabited the Earth millions of years ago
	Core Knowledge To know the names of different types of food	**Core Knowledge**	**Core Knowledge** To know the names of different styles of magnets	**Core Knowledge** To know who Charles Darwin is and be able to explain his theory

	To know the 5 different senses To use the 5 senses to describe different foods/flavours To know which sense is most helpful in identifying the flavour of food	To know the names of common animals (fish, amphibians, reptiles, birds and mammals) To know features of animals and compare them to one another To know the definition of carnivore, herbivore and omnivore and give examples of animals and what they eat	To know that magnets have two poles (north and south) To know which poles, repel and which attract To know that forces are either a push or a pull To know that friction on an object slows it down To know which materials are magnetic To know that different magnets are different strengths	To know the definition and be able to explain adaptation, evolution and natural selection To know what genes and DNA are To know that living things have adapted over time to live in their environments To know how living things evolve due to natural selection To know how fossils support the theory of evolution To know ethical issues of natural selection
	Woking Scientifically • Ask basic questions • Perform a simple exploration with adult guidance/independently • Observe changes and outcomes • Identify scientific items • Group objects/living things • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why something happens with adult guidance • Use scientific vocabulary with support.	**Working Scientifically** • Ask their own simple questions about what they notice and recognising that they can be answered in different ways • Performing simple tests (simple comparative tests) • Identifying and classifying (grouping and classifying) • Using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions (using	**Working Scientifically** • Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers (if appropriate)	**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where necessary

		secondary sources to find information) • Begin to use simple scientific language to share what they've found out	• Setting up simple practical enquiries comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use scientific vocabulary correctly and with some confidence	• Using test results to make predictions to set up further comparative and fair tests • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Use scientific vocabulary correctly and accurate
	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary

	see, hear, touch, taste, listen, smell, light, dark, rough, smooth, soft, rough, bright, loud, noisy, quiet, strong, fresh, colours, see through, colourful, hot, warm, dry, bushy, damp, wet, spiky, cool, bumpy, sour, sweet, sloppy, crunchy	fish, amphibians, reptiles, birds, mammals, carnivore, omnivore, herbivore, body, head, neck, legs, face, ears, eyes, nose, hair, mouth, teeth, hands, feet, tail, wings, feathers, fur, beak, fins, gills, scales, animal, pet	friction, move, movement, surface, distance, strength, push, pull, contact, non-contact, magnetic, magnetic field, magnetic force, bar magnet, horseshoe magnet, ring magnet, poles, north pole, South pole, attract, repel, metal, iron, copper, aluminium, steel, brass	evolve, adaptation, inherit, natural selection, adaptive traits, inherited traits, mutations, theory of evolution, ancestors, biological parent, chromosomes, genes, Charles Darwin, selective breeding, artificial selection, cloning, DNA, genetically modified, variations, fossil, sedimentary rocks
	TAPS Assessment Taste Test	**TAPS Assessment** Animal Classification	**TAPS Assessment** Shoe Grip Magnet Test (One assessment per term)	**TAPS Assessment** Fossil Habitats
	Why here? Why now? Pupils will be able to use their knowledge of senses which they've been building up during previous terms and focus more on 'taste' which cannot be accessed as freely.	**Why here? Why now?** Pupils will be able to use their knowledge within the wider curriculum to classify a variety of different animals from around the world as their topic within the Golden Thread - Holidays is Africa vs England.	**Why here? Why now?** This unit builds on knowledge from EYFS and prepares the pupils for further learning in UKS2. They will begin to work more scientifically as they compare and observe magnetic forces.	**Why here? Why now?** Pupils will pull their learning about animals and habitats together in this unit as they now focus on more complex content, in preparation for biology at KS3.
Spring term 2	Plants	Seasonal Change	Spring term 1 unit of learning continued over a full term.	Forces
	3 & 4 Year Old Statements • Talk about what they see, using a wide vocabulary • Understand the key features of the lifecycle of a plant and an animal • Plant seeds and care for growing plants • Begin to understand the need to respect and care	**Y1 Objectives** • Observe changes across four seasons • Observe and describe weather associated with the seasons and how day length varies ***(Additional lessons to be taught throughout the year one per half term focussing on the changes***		**Y5 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

	for the natural environment and all living things Reception Statements • Learn new vocabulary • Ask questions to find out more and to check what has been said to them • Articulate their ideas and thoughts in well-formed sentences • Describe events in some detail • Use new vocabulary in different contexts • Explore the natural world around them • Describe what they see, hear and feel while they are outside ELG • Make comments about what they have heard and ask questions to clarify their understanding • Explore the natural world around them, making observations and drawing pictures of animals and plants • Understand some important processes and	*which have been seen with a focus in Spring 2 of comparing what has been seen including Plants Y1 objective - identify and name a variety of common wild and garden plants, including deciduous and evergreen trees)*		that act between moving surfaces • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have greater effect

	changes in the natural world around them, including the seasons and changing states of matter			
	Core Knowledge To know the basic parts of flowering plants To know the lifecycle of a flowering plant To know the basic needs of what a plant needs to grow To know how to care for a plant	**Core Knowledge** To know the names of the 4 seasons To know the name of different weather types To know different types of weather you will experience in each season To know that day length changes within each season and be able to give a basic explanation of how this varies		**Core Knowledge** To know who Isaac Newton is To know the different forces which are acting upon objects To know the effects of friction on moving objects, including air and water resistance To know how to identify different mechanisms To know how mechanisms influence the force produced
	Working Scientifically • Ask basic questions • Perform a simple exploration with adult guidance/independently • Observe changes and outcomes • Identify scientific items • Group objects/living things • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why	**Working Scientifically** • Ask their own simple questions about what they notice and recognising that they can be answered in different ways • Observing closely, using simple equipment (observing changes over a period of time, noticing patterns) • Identifying and classifying • Gathering and recording data to help in answering		**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and

	something happens with adult guidance • Use scientific vocabulary with support.	questions (using secondary sources to find information) • Begin to use simple scientific language to share what they've found out		precision, taking repeat readings where necessary • Using test results to make predictions to set up further comparative and fair tests • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Use scientific vocabulary correctly and accurate
	Key Vocabulary plant, flower, petal, stem, leaf, roots, soil, grow, water, seedling, seed, bulb, sun, shoot	**Key Vocabulary** spring, summer, autumn, winter, seasons, change, sun, rain, snow, sleet, frost, ice, fog, cloud, hot, warm, cold, storm, wind, thunder, weather forecast, temperature, rainfall, wind direction,		**Key Vocabulary** air resistance, water resistance, buoyancy, upthrust, gravitational pull, gravity, force, levers, pulleys, gears, cogs, weight, mass, kilograms (kg), Newtons (N), scales, speed, fast, slow, effect

		thermometer, rain gauge, night, day, daylight		
	TAPS Assessment No TAPS Assessment available this half term	**TAPS Assessment** Seasonal Changes		**TAPS Assessment** Aqua Dynamics
	Why here? Why now? The half term allows the pupils to see first hand experiences of plants growing and a wider variety of plants within the environment unlike in winter.	**Why here? Why now?** The children will have experienced the change of most of the seasons whilst being in school and are moving into Summer. Therefore, will be able to confidently compare the differences and reflect on what they experienced within the different seasons. This will also provide base knowledge for the Golden Thread - Climate (Weather and Seasons) in Summer 1.		**Why here? Why now?** Pupils will be able to apply their knowledge from LKS2 to different aspects of forces. This is also spread across two terms to ensure full coverage due to Statutory Testing periods in these terms.
Summer term 1	Sound	Living Things and their Habitats	Rocks	Spring term 2 unit of learning continued over a full term.
	3 & 4 Year Old Statements • Understand 'why' questions • Use all their senses in hands on exploration of natural materials **Reception Statements** • Learn new vocabulary • Ask questions to find out more and to check what has been said to them	**Y2 Objectives** • Explore and compare the differences between things that are living, dead and things that have never been alive • 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	**Y3 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	

	• Articulate their ideas and thoughts in well-formed sentences • Describe events in some detail • Use new vocabulary in different contexts • Describe what they see, hear and feel while they are outside ELG • Make comments about what they have heard and ask questions to clarify their understanding	and plants, and how they depend on each other • Identify and name a variety of plants and animals in their habitats, including micro-habitats • 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	• Recognise that soils are made from rocks and organic matter	
	Core Knowledge To know how to make different sounds (body percussion, instruments and other objects) To know how to describe different sounds	**Core Knowledge** To know the difference between things that are living, dead and never alive. To know plants and animals within different global habitats To know the names and be able to identify minibeasts in microhabitats To know how animals can survive in their habitat To know how to create a simple food chain To know the name of different sources of food	**Core Knowledge** To know the name of different types of rocks To know examples of human-made and natural rocks To know properties of different types of rocks To know the names and be able to explain the different types of rocks (sedimentary, igneous, metamorphic) To know how fossils are formed To know who Mary Anning is and her importance To know how soil is formed	
	Working Scientifically • Ask basic questions	**Working Scientifically**	**Working Scientifically**	

	• Perform a simple exploration with adult guidance/independently • Observe changes and outcomes • Identify scientific items • Group objects/living things • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why something happens with adult guidance • Use scientific vocabulary with support.	• Ask their own simple questions about what they notice and recognising that they can be answered in different ways • Observing closely • Identifying and classifying (grouping and classifying) • Using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions (using secondary sources to find information) • Begin to use simple scientific language to share what they've found out	• Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers & data loggers (if appropriate) • Setting up simple practical enquiries comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Recording findings using simple scientific language, drawings,	

			labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Use scientific vocabulary correctly and with some confidence	
	Key Vocabulary sound, loud, quiet, bang, shake, pop, noise, noisy, fast, slow, ear, hear, listen, drum, triangle, tambourine, keyboard	**Key Vocabulary** living, dead, never living, not living, healthy, habitat, shelter, survive, suited, space, minibeast, dependent, movement, sensitivity, growth, reproduction, nutrition, excretion, respiration, food, producer, consumer, predator, prey, woodland, rainforest, beach, ocean, urban, local area, carnivore, herbivore, omnivore	**Key Vocabulary** rock, slate, granite, sandstone, chalk, soil, clay, sand, limestone, quartz, marble, stone, pebble, texture, absorbent, characteristic, surface, sedimentary rock, igneous rock, metamorphic rock, permeable, semi-permeable, impermeable, durable, natural, human-made, magma, lava, molten rock, sediment, erosion, fossil, layers, fossilisation, sandy, chalky, peaty, loamy, topsoil, mineral, organic matter, compost	
	TAPS Assessment Scooping Sounds	**TAPS Assessment** Nature Spotters	**TAPS Assessment** Rocks Report	

	Why here? Why now? This unit gives the pupils an opportunity to explore different sounds and ask questions about sound. They will learn how to make sound. This unit lays the foundation for further learning in LKS2.	**Why here? Why now?** The pupils will be able to apply their knowledge gained in plants and animals including humans across KS1 within this topic to support with identifying plants and animals and also using them within food chains. This is also spread across two terms to ensure full coverage due to Statutory Testing periods in these terms.	**Why here? Why now?** In this unit pupils will explore different types of rock and their properties. This unit links in with the pupils' learning in geography which includes erosion, and the effects this has on our planet.	
Summer term 2	Materials	Summer term 2 unit of learning continued across a full term.	States of Matter	Animals including Humans & Evolution and Inheritance
	3 & 4 Year Old Statements • Use all their senses in hands on exploration of natural materials • Explore collections of materials with similar and/or different properties • Talk about what they see, using a wide vocabulary • Talk about differences between materials and changes they notice **Reception Statements** • Learn new vocabulary • Articulate their ideas and thoughts in well-formed sentences • Explore the natural world around them		**Y4 Objectives** • 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	**Y6 Objectives** • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents ***(to be taught alongside Big Talk)*** • Describe the ways in which nutrients and water are transported within animals, including humans. • Identify and name the main parts of the human circulatory system and describe the functions of

	• Describe what they see, hear and feel while they are outside • Ask questions to find out more and to check what has been said to them ELG • Explore the natural world around them, making observations and drawings pictures of animals and plants • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter • Make comments about what they have heard and ask questions to clarify their understanding			the heart, blood vessels and blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function
	Core Knowledge To know the name of different materials To know what happens when they mix different materials together		**Core Knowledge** To know the properties of solids, liquids and gases. To know that freezing and melting are opposite processes that change the state of a material.	**Core Knowledge** To know and give examples of selective and cross breeding To know what genes and DNA are To know what adaptation and evolution is

			To know the melting and freezing point of different materials To know that heating causes evaporation To know that cooling causes condensation To know that evaporation and condensation are opposite processes that change the state of a material To know the higher the temperature the quicker water evaporates To be able to explain the different stages of the water cycle	To know the three main parts of the circulatory system To know and be able to describe the jobs of the heart To know the jobs of blood vessels and blood To know how heart rate can be affected To know why regular exercise is important for the body To know the affect exercise and diet has on the body To know the impact of drugs and lifestyle on the way our body's function
	Working Scientifically • Ask basic questions • Perform a simple exploration with adult guidance/independently • Observe changes and outcomes • Identify scientific items • Group objects/living things • Use different methods of recording results (oral, concrete or mark making) • Use observations to begin to explain what/why		**Working Scientifically** • Asking relevant questions and using different types of scientific enquiries to answer them • Using straightforward scientific evidence to answer questions or to support their findings • Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of	**Working Scientifically** • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Identifying scientific evidence that has been used to support or refute ideas or arguments • Taking measurements, using a range of scientific equipment, with increasing accuracy and

	something happens with adult guidance • Use scientific vocabulary with support.		equipment, including thermometers & data loggers (if appropriate) • Setting up simple practical enquiries comparative and fair tests • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	precision, taking repeat readings where necessary • Using test results to make predictions to set up further comparative and fair tests • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs • Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Use scientific vocabulary correctly and accurate

			• Use scientific vocabulary correctly and with some confidence	
	Key Vocabulary wood, metal, brick, ice, cloth, plastic, stone, paper, metal, water, glass, fabric, hard, squashy, smooth, bumpy, soft, waterproof, not waterproof, absorbent, non-absorbent, shiny, stretchy, stiff, dull, see through, not see through		**Key Vocabulary** solid, liquid, gas, particles, evaporate, condense, melt, freeze, heat, cool, melting point, freezing point, boiling point, water vapour, precipitation, collection, underground water, sea, river, stream, water droplets, hail, atmosphere	**Key Vocabulary** circulation, heart, pulse, heartbeat, heart rate, lungs, breathing, blood vessels, blood, pump, transported, oxygenated, deoxygenated, arteries, veins, capillaries, chambers, plasma, platelets, white blood cells, red blood cells, drugs, alcohol, smoking, disease, calories, energy, transportation, waste, diet, side effect, evolve, adaptation, inherit, adaptive traits, inherited traits, biological parent, genes, DNA, breed, selective breeding, chromosomes
	TAPS Assessment Bubble Snakes		**TAPS Assessment** Dunking Biscuits	**TAPS Assessment** Heartrate Poses
	Why here? Why now? Pupils will be able to apply their knowledge of materials which they have learnt over the academic year to discuss and consider the use of materials.		**Why here? Why now?** Building on from learning in EYFS and KS1, pupils will now focus on the classification of different materials, including how these change, ready for learning in UKS2.	**Why here? Why now?** Pupils will be taught this to coincide with the relationships, sex and health education provision provided in the summer term by Big Talk.