Science Knowledge Progression Map

CYCLE 1

The learning journey for Science begins in The Early Years when children begin exploring our carefully planned indoor and outdoor environment. Through continuous provision, child led learning and adult directed activities children in the Early Years will develop their skills and knowledge of Science. In our Early Years we understand the importance of 'the unique child' and therefore understand that children will take individual journeys to reach these goals. Adults are aware of the journey that children in our Early Years embark on and use assessment of the children and In the moment planning to identify their next steps and ensure progression for each individual child.

By the end of The Early Years children will:

- Understand the effect of changing seasons on the world around them
- Understand the need to respect and care for the natural environment and all living things
- Observe and comment on changes in their immediate environment
- Describe what they see, hear and feel
- Wonder about the world around them
- Ask questions to find out more about processes
- Understand simple cause and effect
- Learn and implement subject specific tier 3 vocabulary
- Talk about plants and their differences in appearance
- Have an understanding of growth and decay over time
- Explore and compares different materials
- Consider a material's properties when selecting materials
- Explore and talk about different forces that they can feel

Specific knowledge:

- **Recognise** that the world around us changes over time (e.g. Seasons)
- **Understand** changes of matter that occur (e.g. melting and freezing)
- **Understand** that different materials have different properties
- **Recognise and name** common animals

EYFS Vocabulary

head eyes nose mouth ears hands fingers feet toes arm leg animal herbivore face carnivore hair omnivore leg human knee fish elbow birds back tree leaf flower stem seed tree petals trunk fruit branch roots leaves bulb material wood glass paper hard soft metal rock plastic fabric material smooth shiny rough summer day spring dark autumn light winter night season moon sun space earth planet loud quiet loud quiet volume sound

	Autumn		Spring		Summer	
Rising 3s			Nursery Rhymes	Where do you like to shop?	Bears, bears, bears!	What lives in the garden?

			Understanding the World Explore materials with different properties	**Understanding the World** Notice differences between people Repeat actions that have an effect Explore materials with different properties Explore natural materials Indoors and outside	**Understanding the World** To explore and enjoy the natural world	**Understanding the World** To explore and have respect for living things Explore and respond to different natural phenomena in their setting and on trips
Nursery	Would you like to snuggle up with a book?	What is your favourite toy?	Nursery Rhymes	Where do you like to shop?	Bears, bears, bears!	What lives in the garden?
	Understanding the World To use all their senses in hands on exploration of natural material Be interested in finding out how things work Explore and talk about natural things going on around them	**Understanding of the World** Begin to understand the need to respect and care for the natural environment and all living things Use all of the senses in hands on exploration	**Understanding of the World** Explore collections of materials with similar and/or different properties	**Understanding of the World** Explore collections of materials with similar and/or different properties	**Understanding of the World** Talk about what they see using a wide vocabulary To understand the key features of the life cycle of a plant and an animal Begin to understand the need to respect and care for the natural environment and all living things	**Understanding of the World** Explore and talk about the different forces they can feel Plant seeds and care for growing plants Understand the key features of the life cycle Talk about the differences between materials and changes they notice Explore collections of materials with similar and/or different properties Talk about what they see using a wide vocabulary
Reception	Theme: What makes me special?	Theme: Who lives in the woods?	Theme: Do you like gravy on your ice-cream?	Theme: Is there room on the bus?	Theme: Who put the colours in the rainbow?	Theme: To infinity and beyond!
	Humans – life cycles **Humans – The skeleton** **ELG Understanding the World (The Natural World)** Explore the natural world around them, making observations and drawing	**Animals – Hibernation and naming animals which hibernate** **Seasonal Change – Autumn and Winter** **ELG Understanding the World (The Natural World)**	**Humans – body parts and taking care of themselves** **ELG PSED (Managing Self)** To manage their own basic hygiene and personal needs, including	**Forces – pushing and pulling** **ELG Understanding the World (The Natural World)** Explore the natural world around them, making observations and drawing pictures of animals and plants;	**Plants – growing and naming plants, observing changes** **ELG Understanding the World (The Natural World)** Explore the natural world around them, making observations and drawing pictures of animals and plants;	**Forces – Gravity and space** **Exploring magnets** **ELG Understanding the World (The Natural World)** Explore the natural world around them, making observations and drawing pictures of animals and plants;

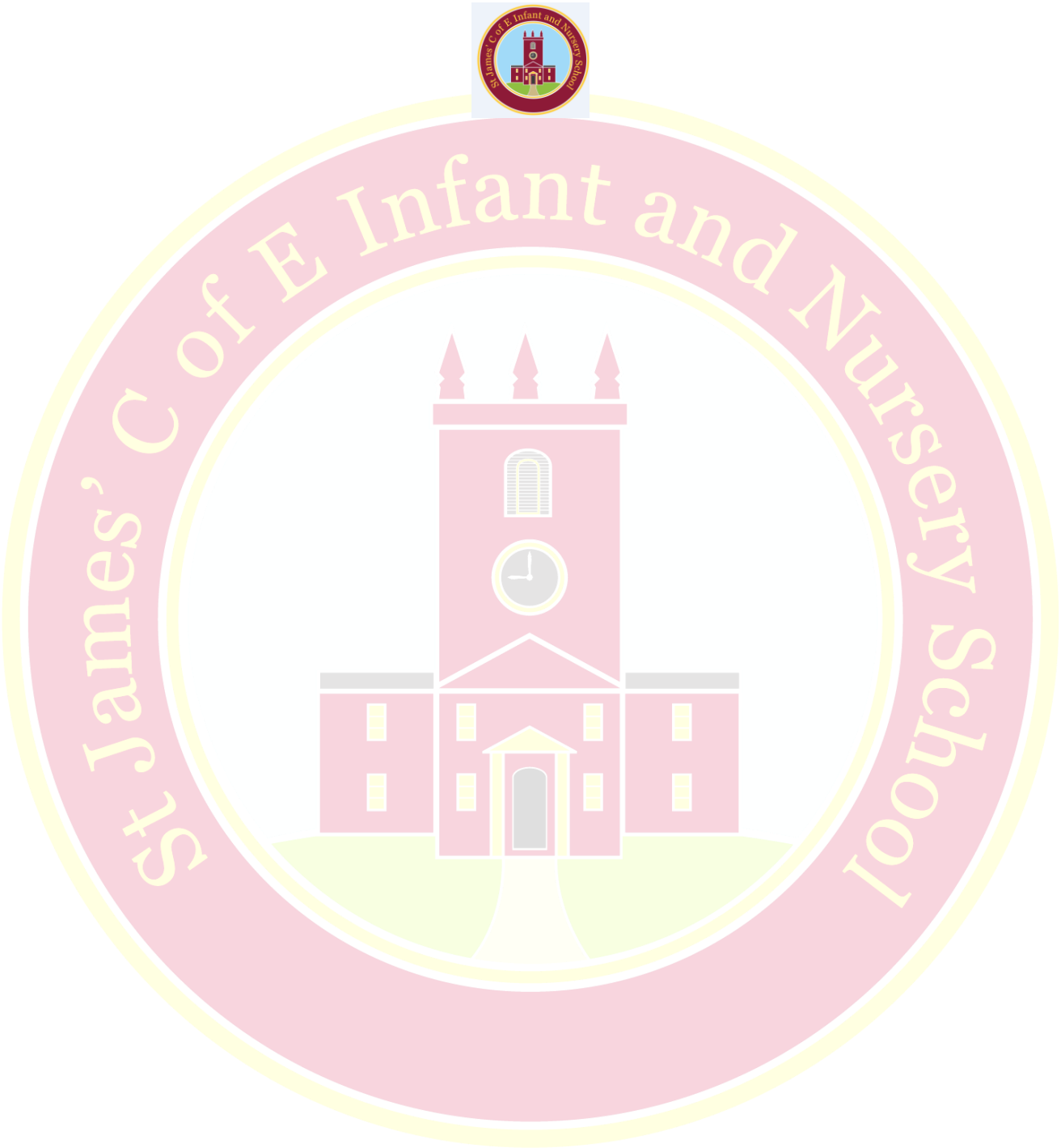
	pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Specific knowledge/skills:** To explore their senses and describe what they see, hear and feel To know how I have changed since I was a baby To know how my family have changed since they got older To ask questions about the natural environment To respect and care for the natural environment To identify similarities and differences between themselves and their peers **Experiences:** Visits from grandparents and baby	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 **Specific knowledge/skills:** To explore their senses and describe what they see, hear and feel whilst outside To know about and recognise the signs of autumn To know about the signs of winter To learn about the process of hibernation and which animals hibernate To know about features of the world and Earth **Experiences:** Forest walk/autumn Visit to Stocks Wood	dressing, going to the toilet and understanding the importance of healthy food choices. **Specific Knowledge/Skills:** To talk about the different factors that support their overall health and well being: · regular physical activity · healthy eating · tooth brushing · sensible amounts of 'screen time' · having a good sleep routine · being a safe pedestrian To develop their knowledge and vocabulary of the different body parts including that of the digestive system To learn about the life cycle of a butterfly To learn where food comes from To know that some things in the world and natural and some are man-made To observe the growth of seeds and talk about changes	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 **Specific knowledge/Skills:** To have a variety of toy transport for the children to experience and describe the forces of pushing and pulling To describe what they see, hear, feel whilst outside **Experiences:** Visit to local library Visits from family members	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 **Specific knowledge/Skills:** To 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 To have opportunities to grow and look after different plants and observe how they change as they grow To observe different plants in the school and church grounds and make drawings of them To be taught about contrasting environments and the different plants that grow there **Experiences:** Visit to the local church	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 **Specific Knowledge/Skills:** To observe and interact with natural processes, such as a magnet attracting an object and a boat floating on water **Experiences:** Trip to Lake District Wildlife Park

			To know how to care for growing plants **Experiences:** Visit from local business The Hungry Caterpillar for healthy snacks Visit from local dentist			
Year 1 and 2	Living Things and their Habitats	Animals including Humans	Materials	Plants	REVISIT: Living Things and Materials	REVISIT: Animals including Humans and Plants
	National Curriculum Links: - 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 and plants, and how they depend on each other - identify and name a variety of plants and animals in their habitats, including microhabitats - describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and	**National Curriculum Links:** - 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) - identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	**National Curriculum Links:** - 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 - Identify and compare the suitability of a variety of everyday	**National Curriculum Links:** - 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 - 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 **Substantive knowledge:** To know the parts of a plant To know what wild plants are	**Using formative assessment identify content needing to be revisited due to difficulties in understanding and possible misconceptions*** **National Curriculum Links:** - 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	* **Using formative assessment identify content needing to be revisited due to difficulties in understanding and possible misconceptions*** **National Curriculum Links:** - 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

	identify and name different sources of food. **Substantive knowledge:** To know what is alive and what is not alive. To know what all living things have in common. To know where plants and animals live To know what plants and animals live in the local environment. To know what food chains are and how they are connected. To know why plants and animals need each other. **Disciplinary Knowledge:** Go on a minibeast hunt and record their findings in a table. Observe and describe simple food chains. Ask simple questions about food chains and recognise that these can be answered in different ways. Use simple secondary sources to find our what different animals eat. Use their research to suggest answers to their questions. To carry out a simple test to	- notice that animals, including humans, have offspring which grow into adults - find out about and describe the basic needs of animals, including humans, for survival (water, food and air) - describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene **Substantive knowledge:** To know what an animal is and what makes me an animal (senses) To know what types of animals there are. To know what is similar and what is different. To know how animals change as they mature To know what food tells us about an animal **Disciplinary Knowledge:** Observe humans closely using mirrors and hand lenses. Observe changes in humans as they get older. Use senses to compare different textures sounds and smells. Use simple equipment to gather data to answer the question: Are older people taller than	materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching **Substantive knowledge:** To know what materials are To be able to describe materials To know which materials are waterproof and which are not To know who invented waterproofing To know what materials are used for To know what the best material for the job is and why **Disciplinary Knowledge:** Identify different materials Sort and group materials based on their properties Observe how the shapes of some solid objects can be changes and record	and where you find them To know how seeds germinate and what happens To know what happens when bulbs sprout To know what plants need to thrive and be healthy To know how seeds and bulbs grow **Disciplinary Knowledge:** Observe plants closely using hand lenses. Identify common examples of plants. Compare and contrast different plants. Make detailed drawings of plants and label the different parts. To ask questions about plants and as a class decide on a question to carry out a pattern seeking survey relating to seeds/plants, e.g. Do larger seeds grow larger plants? Observe stages of plant growth and record their observations **Scientist** - Jane Colden **Wider Curriculum Links:**	- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching - 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 and plants, and how they depend on each other - identify and name a variety of plants and animals in their habitats, including microhabitats - 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. **Visits/Experiences:** Year 2 – Hawse End	(fish, amphibians, reptiles, birds and mammals including pets) - identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense - 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 - 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 - 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 **Visits/Experiences:** Stocks Wood

	see which microhabitat has the most minibeasts living there. Record results in tables / venn diagrams **Scientist** - Chris Packham **Wider Curriculum Links:** Maths – data handling **Visits/Experiences:** Whinlatter trip **Key vocabulary:** thrive, depend, producer, consumer, prey, predator oxygen, nutrition, respiration, sensitivity, reproduction, excretion	younger people? Use their observations to suggest an answer to the question. **Scientist** - Linda Buck **Wider Curriculum Links:** Maths – data handling, measuring DT – healthy eating **Visits/Experiences:** Autumn Walk **Key vocabulary:** Bird, reptile, amphibian, mammal, fish, offspring, growth, mature, carnivore, herbivore, omnivore, movement, respiration, sensitivity, reproduce, excretion, nutrition	their observations. To perform a simple test to test different materials' properties, e.g. which materials are waterproof? To use their data to answer this question. **Scientist** - Sir Joseph Banks **Wider Curriculum Links:** Maths – data handling **Visits/Experiences:** Designer/Manufacturer visit **Key vocabulary:** rough, smooth, metal, plastic, waterproof materials, properties, flexible, transparent, opaque, physical artificial, brittle, extracted, fabric, manufactured, natural, ceramic, durable, rigid, translucent	Maths – data handling **Visits/Experiences:** Spring time walk **Key vocabulary:** Flower, root, stem, leaf, seed, bulb, nutrients, perennial, dormant, energy, carbon monoxide		

Future learning Year 3	Light Pupils should be taught to: • 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 ways to protect their eyes • recognise that shadows are formed when the light from a light source is blocked by an opaque object • find patterns in the way that the size of shadows change	Animals, including humans Pupils should be taught to: • 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	Rocks Pupils should be taught to: • 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	Plants Pupils should be taught to: • 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	Forces and magnets • compare how things move on different surfaces • notice that some forces need contact between 2 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 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing


St James' C of E Infant and Nursery School

	CYCLE 2
	The learning journey for Science begins in The Early Years when children begin exploring our carefully planned indoor and outdoor environment. Through continuous provision, child led learning and adult directed activities children in the Early Years will develop their skills and knowledge of Science. In our Early Years we understand the importance of 'the unique child' and therefore understand that children will take individual journeys to reach these goals. Adults are aware of the journey that children in our Early Years embark on and use assessment of the children and In the moment planning to identify their next steps and ensure progression for each individual child. By the end of The Early Years children will: • Understand the effect of changing seasons on the world around them • Understand the need to respect and care for the natural environment and all living things • Observe and comment on changes in their immediate environment • Describe what they see, hear and feel • Wonder about the world around them • Ask questions to find out more about processes • Understand simple cause and effect • Learn and implement subject specific tier 3 vocabulary • Talk about plants and their differences in appearance • Have an understanding of growth and decay over time • Explore and compares different materials • Consider a material's properties when selecting materials • Explore and talk about different forces that they can feel Specific knowledge: • **Recognise** that the world around us changes over time (e.g. Seasons) • **Understand** changes of matter that occur (e.g. melting and freezing) • **Understand** that different materials have different properties • **Recognise and name** common animals **EYFS Vocabulary** head eyes nose mouth ears hands fingers feet toes arm leg animal herbivore face carnivore hair omnivore leg human knee fish elbow birds back tree leaf flower stem seed tree petals trunk fruit branch roots leaves bulb material wood glass paper hard soft metal rock plastic fabric material smooth shiny rough summer day spring dark autumn light winter night season moon sun space earth planet loud quiet loud quiet volume sound

	Autumn		Spring		Summer	
Rising 3s			Do you want to be a superhero?	Do you want to be a real-life superhero?	What a wonderful world!	Under the Sea
			Understanding the World Explore materials with different properties	**Understanding the World** Notice differences between people Repeat actions that have an effect Explore materials with different properties	**Understanding the World** To explore and enjoy the natural world	**Understanding the World** To explore and have respect for living things Explore and respiond to different natural phenomena in their settings and on trips
Nursery	It's good to be me!	Where would you like to go?	Do you want to be a superhero?	Do you want to be a real-life superhero?	What a wonderful world!	Under the Sea
	Understanding of the World Use all their senses in hands on exploration of natural materials Be interested in finding out how things work Explore and talk about natural things going on around them	**Understanding of the World** Begin to understand the need to respect and care for the natural environment and all living things Use all of the senses in hands on exploration Explore how things work	**Understanding of the World** Explore collections of materials with similar and/or different properties	**Understanding of the World** Explore collections of materials with similar and/or different properties	**Understanding of the World** Talk about what they see using a wide vocabulary Plant seeds and care for growing plants To understand the key features of the life cycle of a plant and animal Begin to understand the need to respect and care for the natural environment and all living things	**Understanding of the World** Explore and talk about different forces they can feel Plant seeds and care for growing plants Understand the key features of the life cycle Talk about the differences between materials and changes they notice Explore collections of materials with similar and/or different properties Talk about what they see using a wide vocabulary
Reception	Theme: What makes me special?	Theme: Who lives in the woods?	Theme: Do you like gravy on your ice-cream?	Theme: Is there room on the bus?	Theme: Who put the colours in the rainbow?	Theme: To infinity and beyond!
	Humans – life cycles Humans – The skeleton	Animals – Hibernation and naming animals which hibernate	Humans – body parts and taking care of themselves	Forces – pushing and pulling ELG Understanding the World (The Natural World)	Plants – growing and naming plants, observing changes	Forces – Gravity and space Exploring magnets

	ELG Understanding the World (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; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Specific knowledge/skills:** To explore their senses and describe what they see, hear and feel To know how I have changed since I was a baby To know how my family have changed since they got older To ask questions about the natural environment To respect and care for the natural environment To identify similarities and differences between themselves and their peers **Experiences:**	**Seasonal Change – Autumn and Winter** **ELG Understanding the World (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; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Specific knowledge/skills:** To explore their senses and describe what they see, hear and feel whilst outside To know about and recognise the signs of autumn To know about the signs of winter To learn about the process of hibernation and which animals hibernate To know about features of the world and Earth	**ELG PSED (Managing Self)** To manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. **Specific Knowledge/Skills:** To talk about the different factors that support their overall health and well being: · regular physical activity · healthy eating · tooth brushing · sensible amounts of 'screen time' · having a good sleep routine · being a safe pedestrian To develop their knowledge and vocabulary of the different body parts including that of the digestive system To learn about the life cycle of a butterfly To learn where food comes from	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 **Specific knowledge/Skills:** To have a variety of toy transport for the children to experience and describe the forces of pushing and pulling To describe what they see, hear, feel whilst outside **Experiences:** Visit to local library Visits from family members	**ELG Understanding the World (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; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Specific knowledge/Skills:** To 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 To have opportunities to grow and look after different plants and observe how they change as they grow To observe different plants in the school and church grounds and make drawings of them To be taught about contrasting environments and the different plants that grow there	**ELG Understanding the World (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; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Specific Knowledge/Skills:** To observe and interact with natural processes, such as a magnet attracting an object and a boat floating on water **Experiences:** Trip to Lake District Wildlife Park

	Visits from grandparents and baby	**Experiences:** Forest walk/autumn Visit to Stocks Wood	To know that some things in the world and natural and some are man-made To observe the growth of seeds and talk about changes To know how to care for growing plants **Experiences:** Visit from local business The Hungry Caterpillar for healthy snacks Visit from local dentist		**Experiences:** Visit to the local church	
Year 1 / 2	**Seasonal Change and Weather**	**Animals including Humans**	**Materials**	**Plants including trees**	**REVISIT: Plants and Animals including Humans**	**REVISIT: Everyday Materials Seasonal Change**
	National Curriculum Links: - Observe changes across the four seasons - Observe and describe weather associated with the seasons and how day length varies **Substantive knowledge:** To know what the four seasons are To know what the weather is like in spring, summer, autumn and winter	**National Curriculum Links:** - 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	**National Curriculum Links:** - 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	**National Curriculum Links:** - 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	***Using formative assessment identify content needing to be revisited due to difficulties in understanding and possible misconceptions*** **National Curriculum Links:** - 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	***Using formative assessment identify content needing to be revisited due to difficulties in understanding and possible misconceptions*** **National Curriculum Links:** - 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

	To know why day becomes night **Disciplinary Knowledge:** Make block graph about the weather to answer the question: How does the weather change over the seasons? **Scientist** - Ole Kirk Christansen **Wider Curriculum Links:** Maths – data handling **Visits/Experiences:** Autumn walk **Key vocabulary:** dawn, dusk, mild, rotate, soaked, weather month, season, spring, summer, autumn, winter	and mammals including pets) - identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense - 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 **Substantive knowledge:** To know what an animal is To know what makes me an animal To know what types of animal there are To know what animals need to stay alive To know how we keep healthy by exercising To know about keeping healthy and why we exercise	variety of everyday materials - compare and group together a variety of everyday materials on the basis of their simple physical properties - Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching **Substantive knowledge:** To know what a material is. To describe different materials.	- 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 **Substantive knowledge:** To know the parts of a plant To know what are garden plants and where you find them To know what makes a tree To know what the difference is between trees To recognise how and why a tree may be healthy or unhealthy To know what plants need to be healthy **Disciplinary Knowledge:** Observe plants/trees closely using hand lenses. Identify common examples of plants/trees. Compare and contrast different trees.	common flowering plants, including trees - 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 - 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) - identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense - notice that animals, including humans, have offspring which grow into adults - find out about and describe the basic needs of animals,	- 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 - Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching - Observe changes across the four seasons - Observe and describe weather associated with the seasons and how day length varies **Visits/Experiences:** Stocks Wood

		To know why we eat different types of food **Disciplinary Knowledge:** Observe humans closely using mirrors and hand lenses. Observe changes in humans as they get older. Use senses to compare different textures sounds and smells. Use simple equipment to gather data to answer the question: Which drink is the worst for teeth? Use their observations to suggest an answer to the question. **Scientist** - Elizabeth Garrett Anderson **Wider Curriculum Links:** Maths – measuring, data handling DT – healthy eating **Visits/Experiences:** Animal Encounters	To understand what happens when a material is squashed, bended, twisted or stretched. To know what objects are made from and why. To understand what is the best absorbent material. To understand which materials are transparent and which are opaque. **Disciplinary Knowledge:** Identify different materials Sort and group materials based on their properties Observe how the shapes of some solid objects can be changes and record their observations. To perform a simple test to test different materials' properties, e.g. which is the most absorbent material?	Make detailed drawings of trees and label the different parts. To ask questions about plants and as a class decide on a question to carry out an investigation. Eg. Do plants need light to be healthy? Observe stages of plant growth and record their observations **Scientist** - John Dalton **Wider Curriculum Links:** Maths – data handling **Visits/Experiences:** Spring walk **Key vocabulary:** Stem, root, leaf, flower bud, trunk, branch, bark, seed, wild nutrients, stem, deciduous, evergreen	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 **Visits/Experiences:** Year 2 – Hawse End	

		Key vocabulary: bird, reptile, amphibian, mammal, fish, offspring, growth, mature, carnivore, herbivore, omnivore, movement, respiration, sensitivity, reproduce, excretion, nutrition	To use their data to answer this question. **Scientist** – Leo Hendrik Baekeland **Wider Curriculum Links:** Maths – data handling **Visits/Experiences:** Designer / Manufacturer visit **Key vocabulary:** absorb, rough, smooth, metal, plastic materials, properties, flexible, transparent, opaque, physical artificial, brittle, extracted, fabric, manufactured, natural, ceramic, durable, rigid, translucent			

Future learning Year 3	Light Pupils should be taught to: • 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 ways to protect their eyes • recognise that shadows are formed when the light from a light source is blocked by an opaque object • find patterns in the way that the size of shadows change	Animals, including humans Pupils should be taught to: • 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	Rocks Pupils should be taught to: • 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	Plants Pupils should be taught to: • 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	Forces and magnets • compare how things move on different surfaces • notice that some forces need contact between 2 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 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing
