Science Progression Map
Reception
The learning journey for science begins in the 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 through the teaching of Understanding the World. This ensures children have strong foundations and are prepared for the National Curriculum in Year 1. In our Early Years, we understand the importance of 'the unique child' and therefore understand that children take individual journeys to reach these goals. Early Years' teaching staff are aware of the journey that children in embark on, and use assessment, together with in-the-moment planning, to identify appropriate next steps and so 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. Children will gain the following specific knowledge:

- **Recognise** that the world around us **changes** over time (e.g. seasons).
- **Understand** some important **processes** and **changes** in the natural world around them, including the seasons and **changing** states of matter.
- **Understand** that different materials have different properties.
- **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.
- **Recognise** and **name** some common animals.
- **Understand** how some animals change over time (caterpillars and butterflies).
- **Manage** their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of **healthy food** choices
- **Identify** and **name** parts of the human body.

Experiences for our early years children include:

- **Exploration** in our outdoor area.
- **Identifying** common **invertebrates** and their **habitats** in our outdoor area.
- **Growing** and **observing** sunflowers.
- **Watering** and **caring** for plants in our unit.
- **Caring** for Daphne (our school tortoise).
- **Caring** for caterpillars and observing their life cycle.

Year 1. Autumn 1. Topic: Changes: Seasons and Weather, Day and Night

National Curriculum links:

- Observe changes across the four seasons, and observe and describe weather associated with the seasons and how day length varies.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Physics: The study of energy, forces, mechanics, waves, structure of	**EYFS: Managing Self** Manage their own basic hygiene and personal needs,	**Seasons and weather** • What are the four seasons?	dawn dusk mild	month season spring

atoms, physical universe, t**he Earth in space**	including dressing, going to the toilet, and understanding the importance of healthy food choices. **EYFS: The Natural World** 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 seasons and changing states of matter.	• What's the weather like in autumn, winter, spring and summer? **Day to night** • Why does day become night?	rotate soaked weather	summer autumn winter
Year 1. Autumn 2. Topic: Plants, including Trees				
National Curriculum links: • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.				
Substantive concept	**Previous Learning**	**Key Questions/Learning**	**Tier 2 Vocabulary**	**Tier 3 Vocabulary**
Biology: The study of living things, including **common plants and trees in a local environment.**	**EYFS: Managing Self** Manage their own basic hygiene and personal needs, including dressing, going to the toilet, and understanding	**Structure of plants** • What are the parts of a plant? **Wild and common plants**	bud trunk branch bark seed wild	nutrients stem deciduous evergreen

	the importance of healthy food choices. **EYFS: The Natural World** 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 seasons and changing states of matter.	• What are wild plants and where do you find them? • What are garden plants and where do you find them? **Trees** • What makes a tree? • What types of tree are there around my school? • What's the difference between trees?		

Year 1. Spring 1. Topic: Animals, including Humans				
National Curriculum links: • Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals. • Describe and compare the structure of a variety of common animals, including fish, amphibians, reptiles, birds and mammals (including pets). • Identify and name a variety of common animals that are carnivores, herbivores and omnivores.				
Substantive concept	**Previous Learning**	**Key Questions/Learning**	**Tier 2 Vocabulary**	**Tier 3 Vocabulary**
Biology: The study of living things, including **types of animals, food that animals eat, senses.**	**EYFS: Managing Self** Manage their own basic hygiene and personal needs, including dressing, going to	**Animals** • What is an animal? • What types of animals are there?	blood senses young feathers	mammal amphibian reptile herbivore

	the toilet, and understanding the importance of healthy food choices. **EYFS: The Natural World** 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 seasons and changing states of matter.	• What is similar and what is different? **Eating** • What does food tell us about an animal? **Senses** • What makes me an animal? • What senses do I have?	fur scales	carnivore omnivore
Year 1. Spring 2. Topic: Everyday Materials				
National Curriculum links: • To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • To distinguish between an object and the material from which it is made. • To describe the simple physical properties of a variety of everyday materials. • To compare and group together a variety of everyday materials on the basis of their simple physical properties.				
Substantive concept	**Previous Learning**	**Key Questions/Learning**	**Tier 2 Vocabulary**	**Tier 3 Vocabulary**

Chemistry: The study of the **composition, behaviour and properties of matter**.	**EYFS: Managing Self** Manage their own basic hygiene and personal needs, including dressing, going to the toilet, and understanding the importance of healthy food choices. **EYFS: The Natural World** 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 seasons and changing states of matter.	**Materials** • What are materials? • What are things made of in school? **Properties** • How can I describe materials? • Which materials are waterproof and which are not? • Which materials are transparent and which are opaque? **Use what you know** • What's the best material for the job? Why?	absorb rough smooth waterproof metal plastic	materials properties flexible transparent opaque physical

Year 1. Summer 1. Topic: Revisit Animals, including Humans

National Curriculum links:

- Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals.
- Describe and compare the structure of a variety of common animals, including fish, amphibians, reptiles, birds and mammals (including pets).
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **types of animals, food animals eat, senses we have.**	**Year 1 topic:** Animals, including Humans.	**Revisit and name it** • What features do animals have? **Describe it** • What are the features of different animal groups? **Compare and sort it** • What is similar and what is different between animal groups?	blood senses young feathers fur scales	mammal amphibian reptile herbivore carnivore omnivore

Year 1. Summer 2. Topic: Second revisit: Plants, and Animals, including Humans

National Curriculum links:

- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
- Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals.
- Describe and compare the structure of a variety of common animals, including fish, amphibians, reptiles, birds and mammals (including pets).
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **types of animals, food that animals eat, senses we have, common plants and trees in a local environment**.	**Year 1 topic:** Plants, including Trees. **Year 1 topic:** Animals, including Humans.		bud trunk branch bark seed	nutrients stem deciduous evergreen

			wild blood senses young feathers fur scales	 mammal amphibian reptile herbivore carnivore omnivore

Year 2. Autumn 1. Topic: Living things and their Habitats

National Curriculum links:

- 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.
- Explore and compare the differences between things that are living, things that are dead and things that have never been alive.
- 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.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **characteristics of living things, the relationship of living things and their environment**.	**EYFS:** Natural Word **Year 1 topic:** Plants **Year 1 topic:** Animals including Humans **Year 1 topic:** Revisit Animals, including Humans	**Characteristics of living things** • What is alive and what is not? • What do all living things have in common? **Location of living things**	thrive depend producer consume prey predator	oxygen nutrition respiration sensitivity reproduction excretion

	Year 1 topic: Second revisit of Animals, including Humans and Plants	• Where do plants and animals live? • What plants and animals live in our local environment? **How living things are connected** • What are food chains? • How are they connected? • Why do plants and animals need each other?		

Year 2. Autumn 2. Topic: Animals, including Humans

National Curriculum links:

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **reproduction, basic needs, diet and exercise for humans.**	**EYFS:** Natural Word **Year 1 topic:** Plants **Year 1 topic:** Animals including Humans	**Animals and change** • Remember: what is an animal? • How do animals change as they mature?	healthy survive exercise heart lungs muscles	hygiene larva pupa vertebrates invertebrates metamorphosis

	Year 1 topic: Revisit Animals, including Humans **Year 1 topic:** Second revisit of Animals, including Humans and Plants	**Air, water and food** • How do we change as we mature? • What do all animals need to stay alive? **Health and food** • Why do we exercise? • Why do we eat different types of food?		

Year 2. Spring 1. Topic: Use of Everyday Materials

National 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.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Chemistry: The study of the **composition, behaviour and properties of matter**.	**EYFS:** Natural world **Year 1 topic:** Everyday materials	**Materials** • What are materials used for? Categorise and compare wood, metal, plastic and glass. • What are materials used for? Categorise and compare ceramics, rock,	artificial brittle extracted fabric manufactured natural	ceramic durable inflexible reflective rigid translucent

		paper and card, and fabric. **Changes** • What happens when we squash, bend, twist or stretch a material? **Purpose** • What's the right material for the job? • What's the most absorbent material? • Who invented waterproofing?		

Year 2. Spring 2. Topic: Revisit Living Things and Their Habitats and Use of Everyday Materials

National 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.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **characteristics of living things, relationship of living things and their environment**.	**Year 1 topic:** Animals, including humans **Year 1 topic:** Plants	**Materials** • What is it made from?	artificial brittle extracted fabric	ceramic durable inflexible reflective

Chemistry: The study of the **composition, behaviour properties of matter**.	**Year 2 topic:** Living things and their habitats **Year 2 topic:** Uses of everyday materials	**Characteristics of living things** • Compare: what is alive, what is not alive and what has never been alive? **Apply** it • What materials do our pets have or need? Why is that?	manufactured natural	rigid translucent

Year 2. Summer 1. Topic: Plants

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.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **growth, health, relationship of living things and their environment.**	**EYFS:** Natural Word **Year 1 topic:** Plants **Year 1 topic:** Animals, including humans **Year 2 topic:** Living things and their habitats	**Growing from a seed** • How do seeds germinate and what happens? **Growing from a bulb** • What happens when bulbs sprout? **Healthy plants**	wither dormant mature bulb anchor sustain	germination perennial carbon dioxide glucose clone

		• What do plants need to thrive and be healthy? • What can happen if plants don't get the things they need? • What do I notice about plants around the school? How are they healthy? How are they unhealthy? **Show what you know** • How do seeds and bulbs grow? • What do plants need to be healthy?		

Year 2. Summer 2. Topic: Revisit: Plants and Animals, including Humans

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.
- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living	**EYFS:** Natural Word	**Explain it**	wither	germination

things, including **growth, health, relationship of living things and their environment, reproduction, basic needs, diet and exercise for humans**	**Year 1 topic:** Plants **Year 1 topic:** Animals, including humans **Year 2 topic:** Animals, including humans **Year 2 topic:** Living things and their habitats **Year 2 topic:** Revisit Living things and their habitats	• How do seeds and bulbs grow? **Summarise it** • What do I know about animals, including humans? **Interleaving and Explain it** • What do plants need to thrive and be healthy?	dormant mature bulb anchor sustain healthy survive exercise heart lungs muscles	perennial carbon dioxide glucose clone hygiene larva pupa vertebrates invertebrates metamorphosis

Year 3. Autumn 1. Topic: Rocks

National Curriculum links:

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
- Recognise that soils are made from rocks and organic material.
- Describe in simple terms how fossils are formed when things that have lived are trapped within rock.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Chemistry: The study of the **composition, behaviour and properties of matter**	**Year 1 topic:** Everyday materials **Year 2 topic:** Use of everyday materials	**Types** • How are rocks formed? • What types of rocks are there?	cemented compacted decay prehistoric soil	fossil igneous magma metamorphic minerals

		Change • Can rocks change? • How can we test a rock to see if it is limestone or chalk? **Soil** • Is soil just dirt? • What makes soil? **Fossils** • How are fossils formed?	transform	sedimentary

Year 3. Autumn 2. Topic: Animals, including Humans

National Curriculum links:

- 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.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **amount and type of nutrition, structure of humans and animals**.	**EYFS:** Natural world **Year 1 topic:** Animals, including humans **Year 2 topic:** Animals, including humans	**Food** • What effect does the food we eat have? **Skeleton** • Where is my skeleton and what does it do?	minerals skeleton skull voluntary involuntary nerves	biceps triceps vertebrae vitamins proteins carbohydrates

	Year 2 topic: Living things and their habitats	**Muscle** • Where are my muscles and what do they do?		
Year 3. Spring 1. Topic: Revisit: Rocks				
National Curriculum links: • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Recognise that soils are made from rocks and organic material. • Describe in simple terms how fossils are formed when things that have lived are trapped within rock.				
Substantive concept	**Previous Learning**	**Key Questions/Learning**	**Tier 2 Vocabulary**	**Tier 3 Vocabulary**
Chemistry: The study of the **composition, behaviour and properties of matter**.	**Year 1 topic:** Everyday materials **Year 2 topic:** Use of everyday materials **Year 3 topic:** Rocks	**Types** • How are rocks formed and what types are there? **Change** • Remember: how can rocks change? **Fossils** • Remember: how are fossils formed and how do we know?	cemented compacted decay prehistoric soil transform	fossil igneous magma metamorphic minerals sedimentary
Year 3. Spring 2. Topic: Forces and Magnets				

Progression Map: Science

National Curriculum links:

- Notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- Compare how things move on different surfaces.
- 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.
- Observe how magnets attract or repel each other and attract some materials and not others.
- Describe magnets as having two poles; predict whether two magnets will attract or repel each other, depending on which poles are facing.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Physics: The study of **energy, forces,** mechanics, waves, structure of atoms, physical universe, **the Earth in space**	**Year 1 topic:** Seasonal changes **Year 1 topic:** Everyday materials **Year 2 topic:** Uses of everyday materials	**Contact force and friction** • What are contact forces? • How do surfaces affect the motion of an object? • How does friction affect moving objects? **Non-contact force** • What is a non-contact force? • How is this different to a contact force? **Magnetic force** • How do magnets attract and repel? • Which materials are magnetic?	consequence contact force attract north south	magnet resistance friction repel pole magnetic field

Year 3. Summer 1. Plants

National Curriculum links:

- Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.
- 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.
- Explore the part bees play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
- 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.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **structure and function, food and survival, life systems, reproduction**	**Year 1 topic:** Plants **Year 1 topic:** Animals, including humans **Year 2 topic:** Living things and their habitats **Year 2 topic:** Plants	**Flowering plants** • What are the parts of a flowering plant? • What do they do? **Food and survival** • Do all plants need the same things to thrive and grow? • How do leaves make food for the plant? • How does water move through a plant? **Flower function** • What do flowers do?	adapt essential glucose transport variety vital	transpiration stoma pollination stamen pistil photosynthesis

		• What is pollination?		
Year 3. Summer 2. Light				
National Curriculum links: • 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 shadows are formed when the light from a light source is blocked by a solid (opaque) object. • Find patterns in the way that the size of shadows change. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.				
Substantive concept	**Previous Learning**	**Key Questions/Learning**	**Tier 2 Vocabulary**	**Tier 3 Vocabulary**
Physics: The study of **energy**, forces, mechanics, **waves**, structure of atoms, physical universe, **the Earth in space**.	**Year 1 topic:** Seasonal changes **Year 1 topic:** Everyday materials **Year 2 topic:** Uses of everyday materials **Year 3 topic:** Forces and magnets	**Seeing** • Do we need light to see things? **Shadows** • How are shadows formed? **Changing variables** • What happens to the size of a shadow when the object moves closer to, or away from, the light source?	absence cast (shadow) impenetrable reflect shadow source (light)	constant dependent independent illuminate translucent variable
Year 4. Autumn 1. Topic: Living Things and their Habitats				

Progression Map: Science

National Curriculum links:

- Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.
- Recognise that living things can be grouped in a variety of ways.
- Recognise that environments can change and that these changes can sometimes pose dangers to living things.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Biology: The study of living things, including **grouping, classification, environmental change and impact**.	**Year 1 topic:** Plants **Year 1 topic:** Animals, including humans **Year 2 topic:** Living things and their habitats **Year 2 topic:** Plants **Year 3 topic:** Plants	**Living things** • What are the characteristics of living things? **Vertebrates and invertebrates** • What animals are vertebrates? • What animals are invertebrates? **Plants** • What groups are plants classified in? **Classification keys** • What is classification? • How do I use a key? **Environmental changes**	classification environment interdependence interact beneficial hierarchy	vertebrate invertebrate biotic ecosystem species niche

		• What happens if the environment in a habitat changes?		

Year 4. Autumn 2. Topic: States of Matter

National Curriculum links:

- 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.

Substantive concept	Previous Learning	Key Questions/Learning	Tier 2 Vocabulary	Tier 3 Vocabulary
Chemistry: The study of the **composition, behaviour and properties of matter**.	**Year 1 topic:** Everyday materials **Year 2 topic:** Use of everyday materials **Year 3 topic:** Forces and magnets	• What is matter? • What does 'state' mean? • What are solids, liquids and gases? **Melting** • How do materials change state? **Evaporating** • How do materials change state? **Condensing**	permanent particle solid liquid gas vapour	evaporate condense melt matter state volume

		• How do materials change state? **Summary** • How do materials change their state of matter?		

Year 4. Spring 1 and Spring 2. Topic: Animals, including Humans				
National Curriculum links: • Identify that animals, including humans, need the right type and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. • Describe the basic functions of the main parts of the digestive system in humans. • Identify the different types of teeth in humans and their simple functions. • Construct and interpret a variety of food chains, identifying producers, predators and prey.				
Substantive concept	**Previous Learning**	**Key Questions/Learning**	**Tier 2 Vocabulary**	**Tier 3 Vocabulary**
Biology: The study of living things, including **structure of digestive system, function of digestive system, food chains**.	**Year 1 topic:** Plants **Year 1 topic:** Animals, including humans **Year 2 topic:** Living things and their habitats **Year 2 topic:** Plants **Year 3 topic:** Plants	**Teeth and eating** • What teeth do humans have? • What do they do? • How does our mouth and teeth help digestion? • What's the process? • Can teeth tell us what animals eat? **The digestive system**	expel compact digestion acid stomach intestines	incisor canine molar enzyme saliva peristalsis

	Year 4 topic: Living things and their habitats	• What are the parts of the digestive system? • What do they do? • How does digestion work? • What's the process? **Food chains** • What are food chains How do they work? • How do I construct and interpret a food chain? **Summary** • How are teeth, digestion and food chains connected?		

Year 4. Summer 1. Topic: Electricity				
National Curriculum links: • Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wire, bulbs, switches and buzzers. • Identify whether or not a lamp will light in a simple series circuit, based on whether a lamp is part of a complete loop with a battery. • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Recognise some common conductors and insulators and associate metals with being good conductors.				
Substantive concept	**Previous Learning**	**Key Questions/Learning**	**Tier 2 Vocabulary**	**Tier 3 Vocabulary**

Physics: The study of **energy**, forces, mechanics, waves, structure of atoms, physical universe, the Earth in space.	**Year 1 topic:** Seasonal changes **Year 1 topic:** Everyday materials **Year 2 topic:** Uses of everyday materials **Year 3 topic:** Forces and magnets	**Sources of electricity** • What appliances use electricity? • What sort of power makes them work? **Components** • What are the components in a simple series circuit? **Apply what you know** • What are the effects of changing circuit components and batteries?	associate identify portable effect appliance series	component electrical insulator electrical conductor circuit hypothesis variable
Year 4. Summer 2. Topic: Sound				
National Curriculum links: • 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 volume of a sound and the strength of the vibrations that produced it. • Recognise that sounds get fainter as the distance from the sound source increases. • Find patterns between the pitch of a sound and features of the object that produced it.				
Substantive concept	**Previous Learning**	**Key Questions/Learning**	**Tier 2 Vocabulary**	**Tier 3 Vocabulary**

Physics: The study of **energy**, forces, mechanics, **waves**, structure of atoms, physical universe, the Earth in space.	**Year 1 topic:** Seasonal changes **Year 1 topic:** Everyday materials **Year 2 topic:** Uses of everyday materials **Year 3 topic:** Forces and magnets **Year 4 topic:** Electricity	**Properties** • What is sound? **Movement** • How does sound travel? **Pitch and loudness** • What is the pitch and loudness of sound?	produce property source frequent regular affect	vibrate pitch volume medium vacuum sound wave