Science at St Mawes School

OUR INTENT

Science plays a key part of the curriculum through your child's entire school career, and a love of science is created through finding the awe and wonder in our world. We work hard to develop each child's scientific knowledge and understanding.

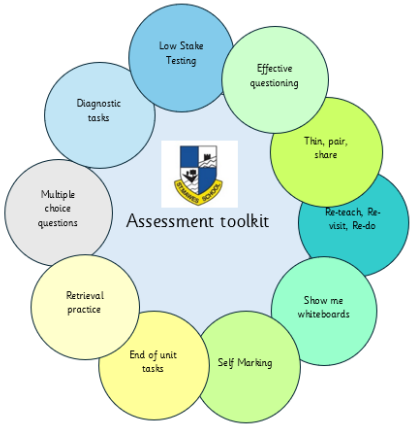
Our science curriculum will be broad and balanced and built around the principles of active discovery and experiential learning. There will be planned cross-curricular links and external partnerships to bring richness and depth to subjects supported by the arts, music, drama, design technology and maths. The planned use of ICT and technologies will support the teaching and learning of all curriculum areas.

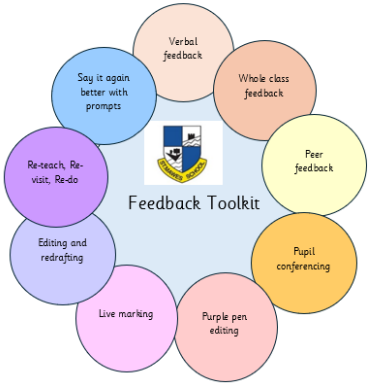
SEQUENCING

	Castle Class Year A	Castle Class Year B	Sail Class Year A	Sail Class Year B	Sail Class Year C	Sail Class Year D
Autumn 1	My senses	Animals-How are we different?	Circuits and Switches	Seeing Light	States of matter	Digestion
Autumn 2	Growing up	Identifying Plants	Light and Shadow	Changing Sound	Parts of a plant	Classifying plants
Spring	Seasonal changes	Use of everyday materials	Changes of Matter	Rocks	The water cycle	Lifecycles, reproduction and gestation
Spring 2	Everyday materials- Fabrics	Animal food chains	The heart and circulatory system	Evolution and Inheritance	Forces and magnets	Risks and dangers in the environment
Summer 1	Habitats	Growing plants	Earth and space	Classifying animals in our local environment	Insulators and conductors	Teeth in the food chain
Summer 2	Exercise and healthy diet	How objects can be moved.	Forces and gravity	Nutrition and exercise	Nutrient and water transportaion	Changing and growing- skeletons

FEEDBACK, PRACTICE AND RETRIEVAL

The purpose of feedback and assessment at St Mawes is to ensure children move forward in their learning, deepen their understanding and gain fluency. To ensure pupils make good progress, improve their confidence with a range of knowledge and skills and remember more of what they learn, regular practice and retrieval opportunities are planned for.





CROSS-CURRICULAR LINKS

Links are made between subjects to offer a creative way to develop children's knowledge, skills and understanding through a study of interconnected topics. Links are an effective way to teach children transferable problem solving skills, and to give real-world meaning to learning. Please see year group overviews for further details.

IMPACT

Children are excited about science, engaging in their learning.
Vocabulary is being implemented through both written work and discussions in science and cross-curricular.
Children are knowledgeable and interested in STEAM careers and want to continue science in Secondary school and beyond.
EYFS is fully engaged in a science curriculum focusing on exploration and wonder.
Children are curious about the world around them.
Children lead the curriculum through their own interests and personal experiences and knowledge.
There is collaboration across classes, school clusters and the Trust.

ENRICHMENT

Castle Class:

- Local nature walks
- Pond dipping, beach combing
- Truro Museum workshops

Sail Class:

- Local nature walk
- Pond dipping, beach combing
- Truro Museum workshops
- 4/5/6 residential will include a science based visit such as the Science Museum (London) and We are the Curious (Bristol)

SUPPORT

All children have access to the History curriculum at St Mawes.

Where specific support and guidance is needed, this is taken from the child's IPM or EHCP.

Knowledge Progression	Autumn	Spring	Summer
Castle Class Year A	**Who Am I?** **My Senses** Humans have five senses. They are sight, hearing, smell, taste and touch. We have body parts to allow us to sense our surroundings. We uses these senses to help us do different things. **Key vocabulary-** sense, function, smell, taste, touch, sight, hear **Growing and Changing** All living organisms reproduce and grow. Flowering plants reproduce by making seeds or bulbs. Animals have babies. Some lay eggs (fish, amphibians, reptiles, birds, insects) but mammals have live young. Some baby animals look like small versions of their parents, while others look completely different. **Key vocabulary-**life cycle, reproduce, offspring, young, adult	**Dress to Impress** **Seasonal changes** There are four seasons in a year spring, summer, autumn and winter. In the U.K summer has the longest days and the highest temperatures. Four seasons are formed in one year due to the Earth travelling around the sun. Autumn is the time when deciduous trees shed their leaves In spring the weather usually turns warmer, trees begin to grow their leaves, plants start to flower and young animals such as chicks and lambs are born. In the U.K, winter is the season with the shortest days and the lowest temperatures. **Key vocabulary-** weather, season, spring, summer, autumn, winter, rain, sun, temperature, thermometer **Everyday Materials- Fabrics** A material is something we can use to make different objects. Different materials have different properties. Some properties describe how an objects looks and feels. • There are lots of different materials around us. Materials used in clothing are called fabrics including cotton, silk and wool. Fabrics can be manmade or natural **Key vocabulary-**material, fabric, property, smooth, shiny, strong, waterproof, durable	**Circle of Life** **Identifying and classifying animals** Animals are classified by their features Mammals are animals that breathe oxygen and given birth to live young. Birds have wings and 2 legs; some birds can fly. Reptiles have scales, cold blood and live in hot places. Amphibians live in the water and out. Fish live in water and breathe through their gills. **Key vocabulary-** features, mammal, amphibian, bird, fish, reptile, reproduce, young, adult, offspring **Basic needs of humans** Humans are animals. We have many different body parts. The skeleton is the main frame of the body. We have a spine which holds us up and is the bone we can feel on our backs. Our bodies are made of muscles, organs and bones. To keep our bodies healthy, we have to eat well, drink lots of water and exercise. We have 5 senses: taste, touch, smell, hearing and sight. To survive we need food, air, water and sleep. **Key vocabulary-** survive, diet, exercise, senses, muscles, skeleton, healthy

Castle Class Year B	Home and Away	The Big Build	All Aboard
	Living, dead and never alive Something that is alive follows life processes like growing and moving. Something that is dead used to be alive, it used to follow the life processes. Never been alive means something that is non-living, it never moved or grew **Key vocabulary-** movement, respiration, sensitivity, growth, reproduction, excretion, nutrition **Identify plants in our local environment.** A plant is a living thing that usually grows from the ground. Trees are plants. In order for a seed to survive and grow into a strong plant it needs, water, sunlight and nutrients (food, that it gets from the soil). Plants have a life cycle. **Key vocabulary** seeds, roots, stem. flower, leaves, petals, fruit, bulb, branches, evergreen, deciduous, healthy, mature	**Use of Everyday Materials-Building** A material is something we can use to make different objects. Different materials have different properties. Some properties describe how an objects looks and feels. • There are lots of different materials around us. Materials for building include wood, stone, metals and glass **Key vocabulary-** material, property, smooth, shiny, strong, waterproof, durable, transparent **Basic needs and food chains** Mammals are animals that breathe oxygen and given birth to live young. Birds have wings and 2 legs; some birds can fly. Reptiles have scales, cold blood and live in hot places. Amphibians live in the water and out. Fish live in water and breathe through their gills. Animals eat different things—some are herbivores, some carnivores, and some omnivores. **Key vocabulary**- mammal, amphibian, bird, fish, reptile, food chain, food web	**Growing Plants** Seeds and bulbs contain energy stored inside. Seeds need water and warmth to germinate. Plants need light for healthy growth. Shoots grow upwards from a seed towards the sunlight. Plants make their own food in their leaves using sunlight. **Key vocabulary-** germination seeds bulbs flower root light life cycle **Forces- How things move.** A force is a push or a pull. A force causes an object to start moving, stop moving, speed up, slow down or change direction. Gravity is a force that acts at a distance. Everything is pulled to the Earth by gravity. This causes unsupported objects to fall. **Key vocabulary-** force, gravity, pull, push,

Sail Class Year A	Cornwall	Ancient Greeks	To the Stars
	Electricity Many household devices and appliances run on electricity. Some plug in to the mains and others run on batteries. An electrical circuit consists of a cell or battery connected to a component using wires. If there is a break in the circuit, a loose connection or a short circuit, the component will not work. A switch can be added to the circuit to turn the component on and off. Metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead). Water, if not completely pure, also conducts electricity. **Key vocabulary-** appliance, insulator, conduct, circuit, component **Light and shadows-** We see objects because our eyes can sense light. Dark is the absence of light. We cannot see anything in complete darkness. Some objects, for example, the sun, light bulbs and candles are sources of light. Objects are easier to see if there is more light. Some surfaces reflect light. Objects are easier to see when there is less light if they are reflective. The light from the sun can damage our eyes and therefore we should not look directly at the sun and can protect our eyes by wearing sunglasses or sunhats in bright light. Shadows are formed on a surface when an opaque or translucent object is between a light source and the surface and blocks some of the light. The size of the shadow depends on the position of the source, object and surface. **Key vocabulary-** reflect, shadow, source, opaque, translucent	**Properties and changes of materials** Some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment. Mixtures can be separated by filtering, sieving and evaporation. Some changes to materials such as dissolving, mixing and changes of state are reversible, but some changes such as burning wood, rusting and mixing vinegar with bicarbonate of soda result in the formation of new materials and these are not reversible. **Key vocabulary-** dissolve, state, reversible, formation, filter, evaporation **Animals including humans** **The Heart** The heart pumps blood in the blood vessels around to the lungs. Oxygen goes into the blood and carbon dioxide is removed. The blood goes back to the heart and is then pumped around the body. Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well out heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins. This content is also included in PSHE. **Key vocabulary-**vessels, oxygen, carbon dioxide, veins, arteries, deficiency	**Earth and Space** The Sun is a star. It is at the centre of our solar system. There are 8 planets orbiting around the Sun. Earth takes 365¼ days to complete its orbit around the Sun. The Earth rotates (spins) on its axis every 24 hours. As Earth rotates half faces the Sun (day) and half is facing away from the Sun (night). As the Earth rotates, the Sun appears to move across the sky. The Moon orbits the Earth. It takes about 28 days to complete its orbit. The Sun, Earth and Moon are approximately spherical. **Key vocabulary-** solar system, planet, orbit, satellite, rotate, axis **Forces-** When an object moves on a surface, the texture of the surface and the object affect how it moves. It may help the object to move better or it may hinder its movement. For some forces to act, there must be contact e.g. a hand opening a door. Levers and pulleys are simple machines that make moving heavy loads easier by reducing the effort force required A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement. The small force moves a long distance and the resulting large force moves a small distance, Pulleys, levers and gears are all mechanisms, also known as simple machines Air resistance, water resistance and friction are contact forces that act between moving surfaces. **Key vocabulary-** force, friction, gravity, pulley, lever, gears, resistance

Sail Class Year B	Britain in the Blitz	The Stone Age	Circle of Life
	Light and sight Light appears to travel in straight lines, and we see objects when light from them goes into our eyes. The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen. Objects that block light (are not fully transparent) will cause shadows. Because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object. **Key vocabulary-** travel, reflect, opaque, transparent, refract, spectrum, outline **Sound** A sound produces vibrations which travel through a medium from the source to our ears. Different mediums such as solids, liquids and gases can carry sound, but sound cannot travel through a vacuum (an area empty of matter). The vibrations cause parts of our body inside our ears to vibrate, allowing us to hear (sense) the sound. The loudness (volume) of the sound depends on the strength (size) of vibrations which decreases as they travel through the medium. Therefore, sounds decrease in volume as you move away from the source. A sound insulator is a material which blocks sound effectively. Pitch is the highness or lowness of a sound and is affected by features of objects producing the sounds. For example, smaller objects usually produce higher pitched sounds. **Key vocabulary-** vibration, volume, pitch, vacuum, insulator	**Rocks and Fossils** There are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. Rocks can be hard or soft. They may absorb water. Rocks can be different shapes and sizes. Soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). The type of rock, size of rock pieces and the amount of organic matter. Some rocks contain fossils. Fossils were formed millions of years ago. When plants and animals died, they fell to the seabed. Over time the dissolving animal and plant matter is replaced by minerals from the water. **Key vocabulary-** igneous, sedimentary, metamorphic, magma, lava, permeable, impermeable **Evolution and Inheritance** All living things have offspring of the same kind, as features in the offspring are inherited from the parents. Plants and animals have characteristics that make them suited to their environment. If the environment changes rapidly, some variations of a species may not suit the new environment and will die. If the environment changes slowly, animals and plants with variations that are best suited survive in pass their characteristics on to their young. Over time, these inherited characteristics become more dominant within the population. Fossils give us evidence of what lived on the Earth millions of year ago. Scientists such as Darwin and Wallace observed how living things adapt to different environments. **Key vocabulary-**offspring, evolution, inheritance, variations, adaptations, characteristics	**Living Things and their Habitats** Animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates). Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms. Plants can be divided broadly into two main groups: flowering plants; and non-flowering plants **Key vocabulary-** vertebrates, invertebrates, flowering, non-flowering, bacteria, micro-organism **Animals, including Humans-** Animals, unlike plants which can make their own food, need to eat in order to get the nutrients they need. Food contains a range of different nutrients – carbohydrates (including sugars), protein, vitamins, minerals, fats, sugars, water –and fibre that are needed by the body to stay healthy. A piece of food will often provide a range of nutrients. Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well out heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins. This content is also included in PSHE. **Key vocabulary-** nutrients, deficiency , proteins, vitamins, carbohydrates, minerals, fibre, fats, sugars

Sail Class Year C	Amazing Amazon	Ancient Egypt	Transport
	States of Matter Materials have different uses depending on their properties and state (liquid, solid, gas). Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets. A solid keeps its shape and has a fixed volume. A liquid has a fixed volume but changes in shape to fit the container. A liquid can be poured and keeps a level, horizontal surface. A gas fills all available space; it has no fixed shape or volume. Melting is a state change from solid to liquid. Freezing is a state change from liquid to solid. The freezing point of water is 0oC. Boiling is a change of state from liquid to gas that happens when a liquid is heated to a specific temperature. Water boils when it is heated to 100oC. **Key vocabulary-** hardness, transparency, conductivity, attraction, solid, liquid, gas. boiling point, freezing point **Plants-** Many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom. The roots absorb water and nutrients from the soil and anchor the plant in place. The stem transports water and nutrients/minerals around the plant and holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal. The leaves use sunlight and water to produce the plant's food. Pollen, which is produced by the male part of the flower, is transferred to the female part of other flowers (pollination). This forms seeds, sometimes contained in berries or fruits which are then dispersed in different ways. **Key vocabulary-** nutrient, photosynthesis, pollen, pollination, reproduce, dispersal	**The Water Cycle** The freezing point of water is 0oC. Boiling is a change of state from liquid to gas that happens when a liquid is heated to a specific temperature and bubbles of the gas can be seen in the liquid. Water boils when it is heated to 100oC. Evaporation is the same state change as boiling (liquid to gas), but it happens slowly at lower temperatures and only at the surface of the liquid. Evaporation happens more quickly if the temperature is higher, the liquid is spread out or it is windy. Condensation is the change back from a gas to a liquid caused by cooling. Water at the surface of seas, rivers etc. evaporates into water vapour (a gas). This rises, cools and condenses back into a liquid forming clouds. When too much water has condensed, the water droplets in the cloud get too heavy and fall back down as rain, snow, sleet etc. and drain back into rivers etc. This is known as precipitation. This is the water cycle. **Key vocabulary-**cycle, evaporation, precipitation, condensation. **Forces and Magnets** A magnet attracts magnetic material. Iron and nickel and other materials containing these, e.g. stainless steel, are magnetic. The strongest parts of a magnet are the poles. Magnets have two poles – a north pole and a south pole. If two like poles, e.g. two north poles, are brought together they will push away from each other – repel. If two unlike poles, e.g. a north and south, are brought together they will pull together – attract. Some forces can act at a distance e.g. magnetism. The magnet does not need to touch the object that it attracts **Key vocabulary-** magnet, magnetic field, repel, attract, poles	**Electricity-** Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. If you use a battery with a higher voltage, the same thing happens. Adding more bulbs to a circuit will make each bulb less bright. Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well. You can use recognised circuit symbols to draw simple circuit diagrams. **Key vocabulary-**circuit, symbols, cell/battery, voltage, amps, current, resistance **Animals including humans- The Circulatory System** Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products. Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. This is the human circulatory system. **Key vocabulary-** circulatory, nutrients, oxygenated, deoxygenated, carbon dioxide,

Sail Class Year D	The Romans	The Coast	The Dark Ages
	Animals including humans Food enters the body through the mouth. Digestion starts when the teeth start to break the food down. Saliva is added and the tongue rolls the food into a ball. The food is swallowed and passes down the oesophagus to the stomach. Here the food is broken down further by being churned around and other chemicals are added. The food passes into the small intestine. Here nutrients are removed from the food and leave the digestive system to be used elsewhere in the body. The rest of the food then passes into the large intestine. Here the water is removed for use elsewhere in the body. What is left is then stored in the rectum until it leaves the body through the anus when you go to the toilet. Humans have four types of teeth: incisors for cutting; canines for tearing; and molars and premolars for grinding (chewing). Living things can be classified as producers, predators and prey according to their place in the food chain. **Key vocabulary**- classified, digestion, saliva, oesophagus, intestine, rectum, molars, incisors, canine **Living things and their habitats** Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other livings things that do not fit into these groups e.g. microorganisms such as bacteria and yeast, and toadstools and mushrooms. Plants can make their own food whereas animals cannot. Plants can be divided broadly into two main groups: flowering plants; and non-flowering plants **Key vocabulary**- characteristics, microorganisms, bacteria, classification, species, kingdom.	**Living things and their habitats-** Living things can be grouped (classified) in different ways according to their features. Living things live in a habitat which provides an environment to which they are suited These environments may change naturally e.g. through flooding, fire, earthquakes etc. Humans also cause the environment to change. This can be in a good way (i.e. positive human impact, such as setting up nature reserves) or in a bad way (i.e. negative human impact, such as littering). These environments also change with the seasons; different living things can be found in a habitat at different times of the year. **Key vocabulary-**environment, biodiversity, impact, habitat, reserves. **Living things in their habitats** As part of their life cycle, plants and animals reproduce. Most animals reproduce sexually. This involves two parents where the sperm from the male fertilises the female egg. Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be born live, such as babies or kittens, and then grow into adults. In other animals, such as chickens or snakes, there may be eggs laid that hatch to young which then grow to adults. Some young undergo a further change before becoming adults e.g. caterpillars to butterflies. This is called a metamorphosis. **Key vocabulary-** gestation, pregnancy, lifecycle, sexual reproduction, non-sexual reproduction, metamorphosis.	**Animals, including humans-** Humans have four types of teeth: incisors for cutting; canines for tearing; and molars and premolars for grinding (chewing). Living things can be classified as producers, predators and prey according to their place in the food chain. **Key vocabulary-**incisors, canines, molars, premolars, grinding, chewing, producers, consumers, predators and prey **Animals, including humans-** Humans, and some other animals, have skeletons and muscles which help them move and provide protection and support. To straighten our arm, our biceps relax and our triceps contract. This straightens our arm. To bend our arm, our biceps contract and our triceps relax. This allows us to bend our arm at the elbow joint. When we stretch our muscles, they become longer and thinner. When we contract our muscles, they become shorter. **Key vocabulary-**skeleton, muscles, joints, contract, protection, support

Working scientifically	Skills Progression
EYFS	Ask questions about how and why things change Ask questions about how and why things are similar or different Ask questions about how things are and the way they work Ask questions to find out what people do and how things work Ask questions about why and how things are linked Decide what to observe to identify or sort things Sort objects by observable and behavioural features Use simple books and electronic media to find things out Begin to use scientific language to talk about what you have found out Begin to use scientific language to talk about how things are similar or different Use vocabulary related to the topic
Year 1	With help identify changes to observe and measure and suggest how to do it Identify simple changes and talk about them Make comparisons between simple features of objects, materials or living things With help notice links between cause and effect With help identify simple variables to change and measure Identify similarities and differences and talk about them With help make suggestions about how to find things out Record my sorting in sorting circles or tables Record in words and pictures what you find out Record observations in words or pictures or simple tables With help decide what patterns to observe and measure and suggest how to do it. Identify simple patterns and talk about them Make links between two sets of observations
Year 2	Use non-standard units and simple equipment to record changes Sequence the changes Use non-standard units and simple equipment to record data Suggest ways in which a test can be carried out Suggest ways in which to record tests Understand why a test should be fair Use my records to help sort or identify other things Talk about whether the information source was useful Record in words or pictures or in simple prepared formats such as tables and / or charts Record in words or pictures or in simple prepared formats such as tables, tally charts and maps Begin to use scientific language to talk about patterns Talk about whether the pattern was as expected Use non-standard units and simple equipment to record events that might be related
Year 3 and 4	Asks relevant questions and uses past knowledge when considering new investigation Can set up simple practical enquiries and understand a fair test. Can understand that changing only one variable is the best method for testing. Can make careful observations using notes and simple tables and drawing. In drawing can consider scale and detail. Can take accurate measurements using standard units of length, time and heat. Use mm and cm. Use negative numbers. labelled diagrams neatly, use keys, bar charts, and simple tables. Use headings to clarify what information is being collected. Draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

	Use scientific evidence to answer questions or to support their findings relate the results to scientific knowledge Use independent research including secondary sources to help them to answer questions Know how to use a microscope, magnifying lens, thermometer
Year 5 and 6	Asks relevant questions and uses past knowledge when considering new investigation Can set up simple practical enquiries and understand a fair test. Can understand that changing only one variable is the best method for testing. Can make careful observations using notes and simple tables and drawing. In drawing can consider scale and detail. Can take accurate measurements using standard units of length, time and heat. Use mm and cm. Use negative numbers. labelled diagrams neatly, use keys, bar charts, and simple tables. Use headings to clarify what information is being collected. Draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Use scientific evidence to answer questions or to support their findings relate the results to scientific knowledge Use independent research including secondary sources to help them to answer questions Know how to use a microscope, magnifying lens, thermometer
Plants	**Skills Progression**
EYFS	Make observations of plants and talk about changes
Year 1	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees in the local environment and other biomes Identify and describe the basic structure of a variety of common flowering plants, including trees.
Year 2	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
Year 3 and 4	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. Know that plants make their own food (produce glucose)
Year 5 and 6	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. Know that plants make their own food (produce glucose)

Animals including humans	**Skills Progression**
EYFS	Make observations of animals and talk about changes
Year 1	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals and invertebrates Identify and name a variety of common animals that are carnivores, herbivores and omnivores and understand how teeth can be used to recognise these animals Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets and invertebrates) Identify, name, draw and label the basic parts of the human body (eyes, ears, mouth, nose, skin, ankle, elbow, wrist, hip, waist,) and say which part of the body is associated with each sense.
Year 2	Notice that animals, including humans, have offspring which grow into adults including lifecycles for tadpoles, caterpillars etc 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
Year 3 and 4	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. 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. Incisors, molars, canines Construct and interpret a variety of food chains, identifying producers, predators and prey.
Year 5 and 6	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. 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. Incisors, molars, canines Construct and interpret a variety of food chains, identifying producers, predators and prey
Every day materials	**Skills Progression**
EYFS	Talk about the similarities and differences in relation to materials
Year 1	Distinguish between an object and the material from which it is made including manmade or natural 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.
Year 2	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.
Forces and magnets	**Skills Progression**
Year 3 and 4	Compare how things move on different surfaces and understand friction Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Identify some magnetic materials Describe magnets as having two poles
Year 5 and 6	Compare how things move on different surfaces and understand friction Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Identify some magnetic materials Describe magnets as having two poles
States of Matter	**Skills Progression**
Year 3 and 4	Compare and group materials together, according to whether they are solids, liquids or gases including states of water 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.

Year 5 and 6	Compare and group materials together, according to whether they are solids, liquids or gases including states of water 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.
Seasonal changes	**Skills Progression**
EYFS	Talk about the features of their own environment and how environments vary from one another
Year 1	Observe changes across the four seasons and relate to our local environment and other countries of the world Observe and describe weather associated with the seasons and how day length varies and relate to our local environment and other countries of the world Recognise the difference between weather and climate
Year 2	Observe changes across the four seasons and relate to our local environment and other countries of the world Observe and describe weather associated with the seasons and how day length varies and relate to our local environment and other countries of the world Recognise the difference between weather and climate
Light	**Skills Progression**
Year 3 and 4	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 a solid object Find patterns in the way that the size of shadows change. Know the term translucent, opaque and transparent
Year 5 and 6	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 a solid object Find patterns in the way that the size of shadows change. Know the term translucent, opaque and transparent
Sound	**Skills Progression**
Year 3 and 4	Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Recognise the difference between pitch, and volume
Year 5 and 6	Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Recognise the difference between pitch, and volume
Electricity	**Skills Progression**
Year 3 and 4	Identify common appliances that run on electricity Construct a simple series circuit, identifying/naming its basic parts, including cell, wire, bulb, switch and buzzer

	Draw the circuit as a pictorial representation including lamp and buzzer Precautions for working safely with electricity. Recognise that a switch opens and closes a circuit Recognise some common conductors and insulators, and associate metals with being good conductors.
Year 5 and 6	Identify common appliances that run on electricity Construct a simple series circuit, identifying/naming its basic parts, including cell, wire, bulb, switch and buzzer Draw the circuit as a pictorial representation including lamp and buzzer Precautions for working safely with electricity. Recognise that a switch opens and closes a circuit Recognise some common conductors and insulators, and associate metals with being good conductors.
Living things and their habitats	**Skills Progression**
EYFS	Know about the similarities and differences in relation to living things
Year 1	Know about the similarities and differences in relation to living things Explore and compare the differences between things that are living, dead, and things that have never been alive and relate to manmade or natural
Year 2	Explore and compare the differences between things that are living, dead, and things that have never been alive and relate to manmade or natural Identify that most living things live in habitats to which they are suited 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 micro-habitats Describe how animals obtain their food from plants and other animals Understand a simple food chain, and identify and name different sources of food.
Year 3 and 4	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things. Know the groups Vertebrates Amphibians, reptiles, birds, fish and mammals. Invertebrates insects, molluscs and arachnids
Year 5 and 6	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things. Know the groups Vertebrates Amphibians, reptiles, birds, fish and mammals. Invertebrates insects, molluscs and arachnids