Padiham Green Church of England Primary School

Jesus said, "Come, follow me." (Matthew 4:19)

Science Progression Map

Intent

In Science, we intend to inspire pupils with a curiosity and fascination about the world around them. We will develop their scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. We will develop their scientific language, alongside their increase their awareness of their environment and sustainability challenges that we may face. Enabling children to talk about their methods and explain their findings and conclusions. The curriculum will motivate them to become effective communicators of scientific ideas, facts and data whilst enhancing their practical skills of scientific enquiry.

Implementation

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Seasons							
Knowledge	Seasons: Autumn Spring Summer Winter	Knows when each of the four seasons occurs Knows what the features of autumn are and what happens to trees in this season	Knows when each of the four seasons occurs Knows what the features of autumn are and what happens to trees in this season Knows that days are longer in summer (sunshine hours) than in winter Observe changes across the four seasons				

Scientific Skills	They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	Demonstrate knowledge in different ways e.g. creating seasonal artwork	Gather and record data about weather conditions in autumn, drawing on observation and using simple equipment (such as a container to measure rainfall) Use data to create a pictogram and use this to describe changes in day length over the seasons. Use their evidence to describe some other features of the weather, surroundings, themselves, animals, and plants found in autumn. Demonstrate their knowledge in different ways e.g. creating seasonal artwork, creating a pictogram (and use this to ask and answer related questions) Use evidence to describe some other features of their surroundings, themselves, animals, plants that change over the seasons				

Plants							
Knowledge	To know how to care for growing plants.	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees	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 plants and animals in their habitats, including microhabitats. (Y2 – Living things and their habitats)	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 – Plants)	Recognise that living things can be grouped in a variety of ways. (Y4 – Living things and their habitats) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 – Living things and their habitats) Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 – Living things and their habitats) Recognise that living things can be grouped in a variety of ways. 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.		

Scientific Skills	The Natural World To plant seeds o observe the growth of seeds and talk about changes.	Gather and record data about weather conditions in autumn, drawing on observation and using simple equipment (such as a container to measure rainfall) Use their evidence to describe some other features of the weather, surroundings, themselves, animals, and plants found in autumn. Can sort and group parts of plants using similarities and differences e.g. the shape of leaves, the colour of the flower/blossom. Can use simple charts and Venn diagrams etc. to identify and classify plants. Use photographs and their own observations to talk about how plants change over time (e.g. seed to	Make close observations of seeds and bulbs Classify seeds and bulbs Research and plan when and how to plant a range of seeds and bulbs Look after the plants as they grow – weeding, thinning, watering etc. Make close observations and measurements of their plants growing from seeds and bulbs Make comparisons between plants as they grow Can spot similarities and difference between bulbs and seeds	Observe what happens to plants over time when the leaves or roots are removed. Observe the effect of putting cut white carnations or celery in coloured water. Investigate what happens to plants when they are put in different conditions e.g. in darkness, in the cold, deprived of air, different types of soil, different fertilisers, varying amount of space. Spot flowers, seeds, berries and fruits outside throughout the year. Observe flowers carefully to identify the pollen Observe flowers being visited by pollinators e.g. bees and butterflies in the summer.	Observe plants and animals in different habitats throughout the year and use recordings to compare and contrast the living things observed. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Classify living things found in different habitats based on their features. Create a simple identification key based on observable features. Use research to explore human impact on the local environment e.g. litter, tree planting. Use secondary sources to find out about how environments may naturally change. Use secondary sources to find out about human		

		sapling to tree) and over the year (deciduous and fruit bearing trees). Plant seeds and observe how they grow and change by making simple observations. Point to and name the parts of a plant, recognising that they are not always the same e.g. leaves and stems may not be green, the leaves are different shapes		Observe seeds being blown from the trees e.g. sycamore seeds. Research different types of seed dispersal. Classify seeds in a range of ways including by how they are dispersed. Create a new species of flowering plant Can explain observations made during investigations. Can look at the features of seeds to decide on their method of dispersal. Can draw and label a diagram of their created flowering plant to show its parts, their role and the method of pollination and seed dispersal.	impact, both positive and negative, on environments and write a report on this.		

Animals including humans							
Knowledge	Similarities and differences. Our bodies. Senses. Body parts and features.	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, 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. • 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. (Y2 – Living things and their habitats	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.	Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 – Animals, including humans) 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. Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the changes as humans develop to old age. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 – Living things and their habitats) Describe the life process of reproduction in some plants and animals. (Y5 – Living things and their habitats	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 – Living things and their habitats) Give reasons for classifying plants and animals based on specific characteristics. (Y6 – Living things and their habitats)

Scientific Skills	They make observations of and explain why some things occur, and talk about changes.	Make first hand close observations of animals from each of the groups (city farm) Compare the structure of two animals from the same or different group e.g. wings, feathers, vertebrates and invertebrates. Classify animals using a range of features e.g. lay eggs/give birth to live young, Herbivore, omnivore (these terms do not have to be explicitly taught). Identify animals by matching statements to named images. Take measurements of parts of the body and present results in a table to interpret. Conduct simple sense experiments. Which part of my body is good for feeling, which is not? Which food/flavours can	Ask questions and use Secondary sources to find out about the life cycles of some animals Observe animals growing over a period of time e.g. chicks, caterpillars, a baby Ask questions of a parent about how they look after their baby Investigate the effect of exercise on their bodies Classify food in a range of ways, including using the Eatwell guide Investigate washing hands, using glitter gel Describe, using diagrams, the life cycle of some animals, including humans, and their growth to adults e.g. by creating a life cycle book for a	Classify food in a range of ways Use food labels to explore the nutritional content of a range of food items Use secondary sources to find out the types of food that contain different nutrients Use food labels to answer enquiry questions e.g. How much fat do different types of pizza contain? How much sugar is in soft drinks? Plan a daily diet contain a good balance of nutrients and record and present findings Explore the nutrients contained in fast food Use secondary sources to research the parts and functions of the skeleton Investigate pattern seeking questions such	Construct and interpret a variety of food chains, identifying producers, predators and prey. Can create food chains based on research. Identifies differences, and similarities of different types of teeth according to herbivore, omnivore and carnivore. Can record the teeth in their mouth (make a dental record). Recreate the human stomach and observe representation of how food breaks down. Label the different parts of the body	Draw and label appropriate scientific diagrams following use of secondary sources and first hand observations relating to the life cycle of a humans. Compare and contrast the life cycles of different living things and present findings Use data to compare and find patterns, for example to compare the gestation times for mammals and look for patterns e.g. in relation to size of animal or length of dependency after birth Look for patterns between the size of an animal and its expected life span)	Plan and conduct a scientific enquiry to identify different food groups. Use labelled diagrams to support understanding of how nutrients and oxygen are delivered around the body. Use information to identify the main components of the heart. Predict what will happen to the heart during exercise. Construct and analyse the variables that make a fair test. Conduct a fair investigation on the effects of exercise on the heart. Use scientific equipment to track results and record data using tables and graphs. Analyse whole class data after investigation to compare and reflect on

		I identify by taste? Which smells can I match?	younger child Measure/observe how animals, including humans, grow. Collate what they know about looking after a baby/animal by creating a parenting/pet owners' guide Explain how development and health might be affected by differing conditions and needs being met/not met	as; Can people with longer legs run faster? Can people with bigger hands catch a ball better? Compare, contrast and classify skeletons of different animals			findings and draw conclusions. Use information acquired to write a scientific report on how the human circulatory system works.

Living things and their habitats							
Knowledge	Habitats Patterns and camouflage	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 – Plants) Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 – Plants) Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 – Animals including humans)	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. Notice that animals, including humans, have offspring which grow into adults. (Y2 – Animals including humans)		Recognise that living things can be grouped in a variety of ways. (Y4 – Living things and their habitats) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 – Living things and their habitats) Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 – Living things and their habitats) Recognise that living things can be grouped in a variety of ways. 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.	Describe the life process of reproduction in some plants and animals. (Y5 – Living things and their habitats) Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 – Living things and their habitats) Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (Y6 – Evolution and inheritance) Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 – Evolution and inheritance)

Scientific Skills	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 – Animals including humans) Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 – Animals, including humans) • Observe changes across the four seasons. (Y1 – Seasonal change)	Explore the outside environment regularly to find objects that are living, dead and have never lived Classify objects found in the local Environment Observe animals and plants carefully, drawing and labelling diagrams Create simple food chains for a familiar local habitat from first hand observation and research Create simple food chains from information given e.g. in picture books (Gruffalo etc.) Can sort into living, dead and never lived Can give key features that mean the animal or plant is suited to its microhabitat Using a food chain can explain what animals eat Can explain in simple terms why an animal or plant is suited to a habitat		Observe plants and animals in different habitats throughout the year and use recordings to compare and contrast the living things observed Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Classify living things found in different habitats based on their features. Create a simple identification key based on observable features. Use research to explore human impact on the local environment e.g. litter, tree planting. Use secondary sources to find out about how environments may naturally change. Use secondary sources to find out about human impact, both positive and negative, on environments and write a report on this.	Grow and observe plants that reproduce asexually e.g. strawberries, spider plant, potatoes organise mammals into different groups – sea and land and marsupials and use scientific evidence to refute/support correct/incorrect statements (such as 'dolphins are fish'). Draw and label appropriate scientific diagrams following use of secondary sources and first hand observations relating to the life cycle of a range of animals. Compare and contrast the life cycles of different living things and present findings identify which insects complete which type of metamorphosis and present findings identify the key differences between some amphibians – for example, toads and frogs, and present findings in different forms	Classify plants and animals and record conclusions from the use of classification keys. Use information about the characteristics of an unknown animal or plant to assign it to a group. Use secondary sources to learn about the formal classification system devised by Carl Linnaeus and why it is important. Research an unfamiliar animal or plant using its characteristics to establish where it belongs in the classification system.

Human Life Cycle and Evolution							
Knowledge						Describe the changes as humans develop to old age. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 – Living things and their habitats) Describe the life process of reproduction in some plants and animals. (Y5 – Living things and their habitats)	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Scientific Skills						Draw and label appropriate scientific diagrams following use of secondary sources and first hand observations relating to the life cycle of a humans. Compare and contrast the life cycles of different living things and present findings Use data to compare and find patterns, for example to compare the gestation times for mammals and look for patterns e.g. in relation to size of animal or length of dependency after birth/Look for patterns between the size of an animal and its expected life span)	Follow lines of enquiry to support the explanation of the process of evolution. Demonstrate an understanding, with specific examples, of how an animal or plant has evolved over time e.g. penguin, peppered moth. Identify characteristics that will make a plant or animal suited or not suited to a particular habitat. Compare the ideas of Charles Darwin and Alfred Wallace on evolution. Research the work of Mary Anning and understand how this provided evidence of evolution. Referring to and using examples of fossil evidence that support the theory of evolution.

Materials (Physic linked topics)							
Knowledge	To know that some things in the world are man-made and some things are natural	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 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.	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. 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. (Y3 - Forces and magnets) Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)	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	Compare and group together everyday materials by their properties, including hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	

Scientific Skills	To ask questions about the natural environment. To sort materials and objects in to similar groups .	Gather and record data about weather conditions in autumn, drawing on observation and using simple equipment (such as a container to measure rainfall) Use their evidence to describe some other features of the weather, surroundings, themselves, animals, and plants found in autumn. Can sort and group parts of plants using similarities and differences e.g. the shape of leaves, the colour of the flower/blossom. Can use simple charts and Venn diagrams etc. to identify and classify plants. Use photographs and their own observations to talk about how plants change over time (e.g. seed to sapling to tree) and	Make close observations of seeds and bulbs Classify seeds and bulbs Research and plan when and how to plant a range of seeds and bulbs Look after the plants as they grow – weeding, thinning, watering etc. Make close observations and measurements of their plants growing from seeds and bulbs Make comparisons between plants as they grow Can spot similarities and difference between bulbs and seeds	Observe what happens to plants over time when the leaves or roots are removed. Observe the effect of putting cut white carnations or celery in coloured water. Investigate what happens to plants when they are put in different conditions e.g. in darkness, in the cold, deprived of air, different types of soil, different fertilisers, varying amount of space. Spot flowers, seeds, berries and fruits outside throughout the year. Observe flowers carefully to identify the pollen Observe flowers being visited by pollinators e.g. bees and butterflies in the summer.	Observe plants and animals in different habitats throughout the year and use recordings to compare and contrast the living things observed. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Classify living things found in different habitats based on their features. Create a simple identification key based on observable features. Use research to explore human impact on the local environment e.g. litter, tree planting. Use secondary sources to find out about how environments may naturally change. Use secondary sources to find out about human		

		over the year (deciduous and fruit bearing trees). Plant seeds and observe how they grow and change by making simple observations. Point to and name the parts of a plant, recognising that they are not always the same e.g. leaves and stems may not be green, the leaves are different shapes		Observe seeds being blown from the trees e.g. sycamore seeds. Research different types of seed dispersal. Classify seeds in a range of ways including by how they are dispersed. Create a new species of flowering plant Can explain observations made during investigations. Can look at the features of seeds to decide on their method of dispersal. Can draw and label a diagram of their created flowering plant to show its parts, their role and the method of pollination and seed dispersal.	impact, both positive and negative, on environments and write a report on this.		

Forces (physic linked topics)							
Knowledge				Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	

Scientific Skills				Record and report on findings from investigations, involving how things move on different surfaces Compare and group materials following magnetic testing, recording findings and use the outcome to answer questions about which materials are magnetic. Make and Investigate predictions on whether two magnets will attract or repel, depending on which poles are facing.		Investigate the pull on different objects using a newton meter and record forces in Newtons (N). Report on conclusions relating to an object's mass and its weight in Newtons. Investigate the effect of friction in a range of contexts. Investigate the effects of water resistance in a range of contexts e.g. dropping shapes through water, pulling shapes e.g. boats along the surface of water. Investigate the effects of air resistance in a range of contexts e.g. parachutes, spinners, sails on boats. Explore how levers, pulleys and gears work. Research how the work of scientists such as Galileo Galilei and Isaac Newton helped to develop the theory of gravitation.	

Light and sound (physic linked topics)							
Knowledge				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. .	Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Scientific Skills				Observe and identify changes to the size and orientation of shadows, relative to their proximity to the light source. Observe and identify the difference in shadows of opaque, translucent and transparent objects/materials Observe how shadows are formed and affected by different circumstances. To notice that light can be reflected off surfaces and Replace with 'investigate the visibility of different materials (eg shiny; foil, mirrors and matt; sugar paper) in a darker environment according to which reflect most light.' Investigate the size of shadows according to times of day and year, by tracing shadows outside and	Experiment with at least three different instruments to observe and explore volume and pitch. Make predictions and draw conclusions about the pitch and volume of sounds. Note how vibrations make sounds of different volumes and travel to our ears. Identify and show how sound travels through particles and into the ear. Make own instruments that produce a range of pitches.	Use secondary sources to help create a model e.g. role play or using balls, to show the movement of the Earth around the Sun and the Moon around the Earth. Use secondary sources to create a model to show why day and night occur Make first-hand observations of how shadows caused by the Sun change through the day Make a sundial and report on findings following observation of the changing place of the shadow, making conclusions as to what this demonstrates and how the sundial was used to indicate the time. Research time zones Consider the views of scientists in the past and how evidence was	Plan and conduct a test to investigate how light travels and explain/present the findings. Investigate the use of mirrors to reflect light and record using straight line diagrams to indicate the direction of light. Use mirrors, torches and protractors to demonstrate and record how light is reflected in a mirror and how we see ourselves in a mirror. Measure and record the angle of incidence and angle of reflection using a protractor and detailed diagram

				Comparing differences. Classify materials according to opaque, transparent and translucent. Use oral and written explanations to report on why shadows are formed and how the length and size of a shadow can be changed. Investigates questions related to an object and the shadow it will cause		used to deduce the shapes and movements of the Earth, Moon and planets before space travel.	

Electricity (physic linked topics)							
Knowledge					Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the 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.		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.

Scientific Skills					Construct and investigate a range of circuits. Investigate which materials can be used instead of wires to make a circuit. Classify materials that conduct electricity and those that don't following investigation and record findings. Investigate the effect of a switch and combinations of switches in simple circuits. Investigate switches and consider variations for specific uses, such as a pressure switch for a burglar alarm. Apply their knowledge of conductors and insulators to design and make different types of switch		Draw circuit diagrams of a range of simple series circuits, using recognised symbols. Communicate structures of circuits using circuit diagrams with recognised symbols Make electric circuits and demonstrate, following investigation, how variation in the working of particular components can be changed. Plan and select resources for a fair scientific enquiry, deciding which variables to control. Record results from an experiment using tables and graphs Evaluate and explain their investigation, results and conclusions.

Impact							
	In Reception children will be able to identify similarities and differences in relation to places, objects, materials and living things. They are able to discuss the features of their own environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	In Year 1 children will be able to name, label and sort animals, plants and body parts into groups. They should be able to perform simple tests, gather data and discuss what they find out.	In Year 2 children will be able to experience and observe phenomena, looking more closely at world around them. They should be curious and ask questions about what they notice. They should be developing their scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things and carrying out simple tests.	In Year 3 children will be able to label the parts of a plant and have a secure knowledge of what a plant needs to survive. Undertake observations over a period of time, make predictions, present data and analyse findings. Explain how water transportation occurs. Children should be able to confidently compare and group together different kinds of rocks & fossils based on their appearance and physical features. To sort, name and identify magnetic and nonmagnetic objects. To understand light & shadows, patterns and reflection.	In Year 4 children will be able to explain how sound created by vibrations. Children have an understanding of different materials and their state of matter. Children have a deeper understanding of animals within their habitat and a food chain. Children should be able to scientific vocabulary to plan, carryout their own investigations.	In Year 5 children will use their knowledge of the solar system to explain regularly experienced natural processes such as day and night and gravity. They can explain similarities and differences between the life cycles of plants, animals and humans using appropriate scientific vocabulary.	In Year 6 children will use their scientific skills and vocabulary to plan, carry out and evaluate appropriate investigations to explore the wider world.