Science Progression of Knowledge and Skills

Key to understanding this document: Black = National Curriculum Objectives Blue = Knowledge Red = Skills to be taught Green = Key vocabulary

Area of Learning	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals Including Humans	Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; - Understand some important processes and changes in the natural world around them, I know that different animals have different body parts (some have no legs, some have lots) I know that different animals like different foods and live in difference places I know that some animals are big and some animals are small I know that butterflies do not start out looking like butterflies (undergo metamorphosis)	Pupils should be taught to: ♣ 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. **I know how to describe and compare observable features of animals from a range of groups** **I know how to group animals according to what they eat** I know how to identify and name a variety of common animals including fish,	Pupils should be taught to: ♣ notice that animals, including humans, have offspring which grow into adults ♣ find out about and describe the basic needs of animals, including humans, for survival (water, food and air) ♣ describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. **I know how to name and locate parts of the human body, including those related to the senses and describe them** **I know how to describe the basic needs of animals for survival and the main changes as offspring from young animals, including humans, grow into adults** **I know how to group animals according to what they eat, describe how animals get their food from other animals and/or plants, and use simple**	Pupils should be taught to: ♣ identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat ♣ identify that humans and some other animals have skeletons and muscles for support, protection and movement. I know how to identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat I know how to identify that humans and some other animals have skeletons and muscles for support, protection and movement	Pupils should be taught to: ♣ 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. I know how to describe the simple functions of the basic parts of the digestive system in humans I know how to identify the different types of teeth in humans and their simple functions I know how to construct and interpret a variety of food chains, identifying producers, predators and prey	Pupils should be taught to: ♣ describe the changes as humans develop to old age. I know how to describe the changes as humans develop to old age.	Pupils should be taught to: ♣ 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. I know how to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood I know how to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function I know how to describe the ways in which nutrients and water are transported within animals, including humans

	I know how to talk about different places an animals might live I know that some animals hibernate I know that some animals are adapted to live under the sea and that humans are adapted to live on land I know that if I wash my hands then that will kill off germs I know about the importance of a healthy diet I know I cannot eat unhealthy foods like chips and pizza everyday and I need a variety of food I know about the importance of a healthy exercise regime I know that exercise is good for my body.	amphibians, reptiles, mammals and birds I know how to identify and name a variety of common animals that are carnivores, herbivores and omnivores **I know how to name and locate parts of the human body, including those related to the senses** **I know how to describe and compare observable features of animals from a range of groups** I know how to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) I know how to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense I know how to take care of animals taken from their habitat and understand the need to return them safely to their homes I know how to use the vocabulary and identify: head, neck, arms, elbows, legs,	**food chains to describe these relationships** I know how to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene I know how to describe the basic needs of animals, including humans, for survival (water, food and air) I know how to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene I know how to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene **Resources:** Photos of stages of life – caterpillar, frog etc.				

		knees, face, ears, eyes, hair, mouth and teeth					
Key vocabulary	**Vocabulary:** Health (y), unhealthy, poorly, germs, healthy food, exercise, body, see, smell, taste, touch, hear.	**Vocabulary:** **Humans and animals:** Fish, reptile, mammal, amphibian, birds, carnivore, herbivore, omnivore, gill, scales, wings, feathers, senses, smell, taste, touch, hear, see, human body, neck, head, elbows, arms, legs, knees, face, ears, hair, toes, mouth, teeth	**Vocabulary:** **Humans and animals:** egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep, baby, toddler, child, teenager, adult, elderly, exercise, offspring, hygiene, survival and shelter.	**Vocabulary:** **Humans and animals:** Nutrition, skeleton, balanced, muscles, support, protection, movement.	**Vocabulary:** **Humans and animals:** Predator, producer, consumer, prey, digestive system, mouth, tongue, teeth, stomach, small intestine, large intestine, rectum anus, carnivores, herbivores, decay, canines, molars.	**Vocabulary:** **Humans and animals:** Growth, Puberty, gestation period	**Vocabulary:** **Humans and animals:** Diet, exercise, drugs, muscular, digestive system, smoking, caffeine, lungs
Everyday Materials	Children at the expected level of development will: - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. I know that objects are made from different materials I know about similarities and differences in relation to places, objects, materials and living things I know how to about the features of my	Pupils should be taught to: ♣ 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. **I know how to distinguish objects from materials, describe their**	Pupils should be taught to: ♣ 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. **I know how to distinguish objects from materials, describe their properties, identify and group everyday materials and compare**			Pupils should be taught to: ♣ compare and group together everyday materials on the basis of their properties, including their 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	

	immediate environment and how environments might vary from one another I know how to make observations of animals and plants and explain why some things occur, and talk about changes	**properties, identify and group everyday materials** I know how to distinguish between an object and the material from which it is made I know how to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock I know how to describe the simple physical properties of a variety of everyday materials I know how to compare and group together a variety of everyday materials on the basis of their simple physical properties	**their suitability for different uses** I know how to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses I know how to describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching **Resources:** House materials - Wood, stick, straw, stones, etc. Materials to bend, stretch, twist.			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. I know how to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets I know how to recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution I know how to use knowledge of solids, liquids and gases to decide how mixtures	

						might be separated, including through filtering, sieving and evaporating I know how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic I know how to demonstrate that dissolving, mixing and changes of state are reversible changes I know how to 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 **Resources:** Bicarbonate of soda, white vinegar, candles, triangular burning frames, salt, sugar, ice, chocolate, jelly, balloons, indigestion tablets.	
Key vocabulary	**Vocabulary:** Soft, hard, bendy, smooth, bumpy,	**Vocabulary**: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not	**Vocabulary:** Squash, bend, stretch, twist, solid.			**Vocabulary:** Hardness, solubility, transparency, conductivity, electrical, thermal, magnetic, filtering, sieving, evaporation, fair test,	

		waterproof; absorbent/not absorbent; opaque/transparent. brick, paper, fabrics, elastic, foil.				dissolving, mixing, reversible change, bicarbonate of soda.	
Light				Pupils should be taught to: ♣ recognise that they need light in order to see things and that dark is the absence of light ♣ notice that light is reflected from surfaces ♣ recognise that light from the sun can be dangerous and that there are ways to protect their eyes ♣ recognise that shadows are formed when the light from a light source is blocked by an opaque object ♣ find patterns in the way that the size of shadows change. I know how to recognise that he/she needs light in order to see things and that dark is the absence of light I know how to notice that light is reflected from surfaces			Pupils should be taught to: ♣ 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. I know how to recognise that light appears to travel in straight lines I know how to use the idea that light travels in straight lines to explain that objects

				I know how to recognise that light from the sun can be dangerous and that there are ways to protect eyes I know how to find patterns in the way that the size of shadows change I know that it is not safe to look directly at the sun, even when wearing dark glasses			are seen because they give out or reflect light into the eye I know how to 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 I know how to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
Key vocabulary				**Vocabulary:** Light source Opaque Translucent Transparent Shadow Reflect Protection			Simple comparisons: dark, dull, bright, very bright Comparative vocabulary: brighter, duller, and darker Superlative vocabulary: brightest, dullest, and darkest Opaque, translucent, transparent Shadow – block, absence of light Reflect – bounce, mirror, reflection See – light source Sun – sunset, sunrise, position
Forces and Magnets	Children at the expected level of development will: - Explore the natural world around them,			**Forces and Magnets:** Pupils should be taught to: ♣ compare how things move on different surfaces ♣		**Forces:** Pupils should be taught to: ♣ explain that unsupported objects fall towards the Earth because of	

	making observations. Understand some important processes and changes in the natural world around them, I know that magnets are 'sticky' without being sticky. I know magnets stick to certain materials (metals) I know how to find an object which a magnet will stick to			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. **Forces:** I know how to compare how things move on different surfaces I know how to notice that some forces need contact between two objects, but magnetic forces can act at a distance		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. **Forces:** I know how to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object I know how to identify the effects of air resistance, water resistance and friction, that act between moving surfaces I know how to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller	

				I know how to 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 I know how to describe magnets as having two poles I know how to predict whether two magnets will attract or repel each other, depending on which poles are facing. **Magnets:** I know how to compare how things move on different surfaces I know how to notice that some forces need contact between two objects, but magnetic forces can act at a distance I know how to compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet,		force to have a greater effect.	

				and identify some magnetic materials I know how to describe magnets as having two poles.			
Key vocabulary	**Vocabulary:** Magnet, magnetic			**Magnets Vocabulary:** Magnetic Force Poles Repel Attract North South **Forces vocabulary:** Surface Push Pull friction		**Vocabulary:** gravity, friction, air resistance, upthrust, weight Measuring forces: Newton meter, Newtons (N) Particles Surface area Push, pull Balance Mass – grams and kilograms Mechanical devices – gears, levers, pulleys, springs	
Electricity					Pupils should be taught to: ♣ 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		Pupils should be taught to: ♣ 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

					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. I know how to identify common appliances that run on electricity I know how to 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 I know how to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit		simple circuit in a diagram. I know how to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit I know how to 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 I know how to use recognised symbols when representing a simple circuit in a diagram

					I know how to recognise some common conductors and insulators, and associate metals with being good conductors		
Key vocabulary					**Vocabulary Magnets:** Bulb Switch Battery Light Circuit Insulator Conductor Motor Electricity		**Vocabulary magnets:** Volts Series circuit Cell Bulb (lamp) holder, Buzzer, crocodile clip, leads, wires, Component Resistance Voltage
Seasonal Changes	Children at the expected level of development will: - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. I know how to identify that it is Autumn, Winter, Summer and Spring I know how to identify seasonal colours I know that lots of new life begins in the Spring time I know how to choose appropriate clothing for the seasons	Pupils should be taught to: ♣ observe changes across the four seasons ♣ observe and describe weather associated with the seasons and how day length varies. **I know how to observe and describe changes across the four seasons** I know how to observe and describe weather associated with the seasons and how day length varies I know that it is not safe to look directly at the sun, even when wearing dark glasses. Resources: Class weather charts. iPad/camera Discovery					

		Walk Picture/ video evidence showing the seasons.					
Key vocabulary	**Key vocabulary:** Spring, Summer, Autumn, Winter, snow, flower, leaf, night, day, trees,	**Vocabulary Seasonal Change:** Seasons Spring Summer Autumn Winter Weather Day Night Change blossom					
Plants	Children at the expected level of development will: Explore the natural world around them, making observations and drawing pictures of animals and plants. I know that plants need sun to grow I know that plants need water to grow I know that most plants need soil and nutrients to grow I know some plants grow from seeds	Pupils should be taught to: ♣ 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. I know how to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees I know how to identify and describe the basic structure of a variety of common flowering plants, including trees I know how to identify and name a variety of common wild and garden plants, including	Pupils should be taught to: ♣ 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. **I know how to describe the basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plants** I know how to observe and describe how seeds and bulbs grow into mature plants I know how to find out and describe how plants need water, light and a suitable	Pupils should be taught to: ♣ identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers ♣ explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant ♣ investigate the way in which water is transported within plants ♣ explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. I know how to identify and describe the functions of different parts of flowering plants: roots,			

		deciduous and evergreen trees	temperature to grow and stay healthy	stem/trunk, leaves and flowers I know how to 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 I know how to investigate the way in which water is transported within plants I know how to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal			
Key vocabulary	**Vocabulary Plants:** Sun, water, soil nutrients, seeds.	**Vocabulary Plants:** **Plants**: leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem. Deciduous trees Evergreen trees	**Vocabulary Plants:** **bulbs. germination, reproduction (questions that recognise growth), growth, survival**	**Vocabulary Plants:** Flowering plants, nutrients, air, pollination, seed formation, seed dispersal, life cycle and transported.			
Living Things and their habitat	Children at the expected level of development will: - Explore the natural world around them,		Pupils should be taught to: ♣ explore and compare the differences between things that are living,		Pupils should be taught to: ♣ recognise that living things can be grouped in a variety of ways ♣ explore and use	Pupils should be taught to: ♣ describe the differences in the life cycles of a mammal, an amphibian, an insect	Pupils should be taught to: ♣ describe how living things are classified into broad groups according to

	making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; - Understand some important processes and changes in the natural world around them, I know about similarities and differences in relation to living things and their habitats I know how to talk about the features of my own immediate environment and how environments might vary from one another I know how to make observations of animals and plants and explain why some things occur, and talk about changes.		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. **I know how to identify whether things are alive, dead or have never lived** I know how to explore and compare the differences between things that are living, dead, and things that have never been alive		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 I know how to recognise that living things can be grouped in a variety of ways I know how to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment I know how to recognise that environments can change and that this can sometimes pose dangers and have an impact on living things	and a bird ♣ describe the life process of reproduction in some plants and animals. I know how to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird I know how to describe the life process of reproduction in some plants and animals	common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals ♣ give reasons for classifying plants and animals based on specific characteristics. I know how to 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 I know how to give reasons for classifying plants and animals based on specific characteristics

			I know how to name different plants and animals and describe how they are suited to different habitats I know how to 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 I know how to identify and name a variety of plants and animals in their habitats, including micro-habitats I know how to 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				
Key vocabulary	**Vocabulary:** Living things, habitat, environment, animals, plants.		**Vocabulary: Habitat:** A natural environment or home of a variety of plants and animals		**Vocabulary:** Classification Flowering plants Non -flowering plants Vertebrates Invertebrates Pollution	**Vocabulary:** Reproduction, Pollination Stigma Ovary Anther Stamen carpel Mammal, Amphibian Insect Bird	**Vocabulary:** Microorganism Classification Key Children will develop vocabulary through own research.

			Micro-habitat: A very small habitat, for example for woodlice under stones, logs or leaf litter Dead Alive Habitat Micro -habitat Food chain Seashore Woodland Ocean rainforest				
Rocks				Pupils should be taught to: ♣ compare and group together different kinds of rocks on the basis of their appearance and simple physical properties ♣ describe in simple terms how fossils are formed when things that have lived are trapped within rock ♣ recognise that soils are made from rocks and organic matter. I know how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties I know how to describe in simple terms how fossils are formed when things that have			

				lived are trapped within rock I know how to recognise that soils are made from rocks and organic matter.			
Key vocabulary				**Vocabulary Rocks:** Rock, soil, fossil ,sedimentary metamorphic igneous permeable impermeable appearance soft hard crystal rock formation mineral			
Sound					Pupils should be taught to: ♣ 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.		

					I know how to identify how sounds are made, associating some of them with something vibrating I know how to recognise that vibrations from sounds travel through a medium to the ear I know how to find patterns between the pitch of a sound and features of the object that produced it I know how to find patterns between the volume of a sound and the strength of the vibrations that produced it I know how to recognise that sounds get fainter as the distance from the sound source increases		
Key vocabulary:					**Sound vocabulary:** Pitch Sound vibrations Volume Medium Faint Insulator		
States of Matter					Pupils should be taught to: ♣ 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. I know how to compare and group materials together, according to whether they are solids, liquids or gases I know how to 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) I know how to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature		
Key Vocabulary:					**States of matter vocabulary:** States of matter Liquid Solid Gas Evaporation Condensation Water cycle Particles Freeze Melt		

Earth and Space						Pupils should be taught to: ♣ 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. I know how to describe the movement of the Earth, and other planets, relative to the Sun in the solar system I know how to describe the movement of the Moon relative to the Earth I know how to describe the Sun, Earth and Moon as approximately spherical bodies I know how to use the idea of the Earth's rotation to explain day and night and the	

						apparent movement of the sun across the sky I know that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006). I know that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).	
Key vocabulary						**Earth and space vocabulary:** Day and night - Earth, axis, rotate Solar system – Star, Sun, Planets, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune (Pluto was classified as Dwarf planet in 2006) Phases of the Moon - full moon, gibbous moon, half moon, crescent moon, new moon, waxing ,waning Moon's orbit: 29.5 days, lunar month Orbit, planets, revolve, sphere.	

Evaluation and Inheritance							Pupils should be taught to: ♣ 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. I know how to recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago I know how to recognise that living things produce offspring of the same kind, but normally offspring vary and are

							not identical to their parents I know how to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
Key vocabulary:							**Evolution and inheritance vocabulary:** Evolution, inheritance, animals, nutrition, reproduce, excrete, respiration, sensitivity, environment, Mrs Nerg / Mrs Gren, adaptation, Charles Darwin.
Famous Scientistc			Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.			They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall They should find out about how chemists create new materials, for example, Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton. Pupils should find out about the way that ideas about the solar	Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.

						system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus. Pupils might find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation.	

Working scientifically progression

National Curriculum Objectives	Throughout the EYFS the three characteristics of effective teaching and learning are: • playing and exploring - children investigate	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:	During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:	During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • planning different types of scientific enquiries to answer questions, including

	and experience things, and 'have a go' • active learning - children concentrate and keep on trying if they encounter difficulties, and enjoy achievements • creating and thinking critically - children have and develop their own ideas, make links between ideas, and develop strategies for doing things	• asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions		• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.		recognising and controlling variables where necessary • taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • using test results to make predictions to set up further comparative and fair tests • reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations • identifying scientific evidence that has been used to support or refute ideas or arguments.	
Skills progression Five types of experimental skills 1. Observe over time 2. Pattern seeking 3.Identifying, classifying and grouping	1. I can observe changes over time 2. I can observe changes and patterns 3. I can identify and classify 4. I can perform simple tests 4. I can perform a fair test with adult support	**1. I can observe changes over time** **2. I can observe changes and patterns** **3. I can identify and classify** 4. I can perform simple tests 4. I can perform a fair test with adult support	**1. I can use simple equipment to observe closely including changes over time** **2. I can use observations and ideas to suggest answers to questions noticing similarities, differences and patterns** **3. I can identify, group and classify**	1. I can make systematic and careful observations over time 2. I can ask questions surrounding patterns I have found in data. 3. I can gather, record, classify and present data in a variety of ways 4. I can set up simple practical enquiries,	1. I can make systematic and careful observations over time, looking at similarities and differences. 2. I can ask questions surrounding patterns I have found in data. 3. I can gather, record, classify and present data in a variety of ways to help in answering questions	1. I can observe over time, asking pertinent questions about similarities and differences. 2. I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. 3. I can classify, group and present data in a	1. I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time 2. I can ask questions surrounding patterns I have found in data as to why something I have observed has happened.

4. Comparative and Fair test 5. Research using secondary sources			**4. I can perform simple comparative tests** **5. I can gather and record data to help in answering questions including from secondary sources of information**	comparative and fair tests 5. I can use secondary sources with adult support to help clarify results seen.	4. I can set up simple practical enquiries, comparative and fair tests 5. I can use secondary sources with adult support to help clarify results seen.	series of ways to help in answering questions 4. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision. 5. I can use secondary sources to help interpret results seen.	3.I can develop and use keys and other information to classify and describe objects in ways to help answer questions 4. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate 5. I can use secondary sources to help interpret results seen.
Questions	I can ask simple questions	**I can ask simple questions and recognise that they can be answered in different ways** I can use my observations and ideas to suggest answers to questions **I can communicate my ideas, what I can do and what I can find out in different ways**	**I can ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum** I can communicate my ideas, what I can do and what I can find out in different ways	I can ask relevant questions to answer my questions in different ways using scientific language from the national curriculum. I can ask questions surrounding patterns I have found in data.	I can ask relevant questions and use different types of scientific enquiries to answer them using scientific language from the national curriculum I can ask questions surrounding patterns I have found in data. I can develop a deeper understanding through talk, asking questions about scientific phenomena, analysing functions and interactions more systematically.	I can plan different types of scientific enquiries to answer questions, including recognising variables where necessary I can ask questions surrounding patterns I have found in data as to why something I have observed has happened. I can observe over time, asking pertinent questions about similarities and differences.	I can plan different types of scientific enquiries to answer my own or others' questions, including recognising and controlling variables where necessary I can recognise things change over time, and can ask pertinent questions and suggest reasons for similarities and differences over time

Using Scientific equipment	I can use magnifying glasses to look at objects in more detail I can measure out ingredients using scientific and mathematic equipment	**I can use simple equipment to observe closely** I can use hand lenses and egg timers	**I can use simple equipment to observe closely including changes over time** **I can ask my own questions about what I notice** **I can use hand lenses and egg timers**	I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations over time I can take measurements using standard units, using a range of equipment. I can set up simple practical enquiries, comparative and fair tests	I can set up simple practical enquiries, comparative and fair tests. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision.	I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	I can take measurements, using a range of scientific equipment, including thermometers and data loggers, with increasing accuracy and precision, taking repeat readings when appropriate I can make my own decisions and select the most appropriate type of scientific enquiry to use and recognise how to set up a comparative and fair test.
Recording data	I can record observations in ways that are important and meaningful to me.	I can gather and record data to help in answering questions I can use simple scientific language such as: with help	**I can gather and record data to help in answering questions including from secondary sources of information**	I can gather, record, classify and present data in a variety of ways. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	I can gather, record, classify and present data in a variety of ways to help in answering questions. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I can use test results to set up further comparative and fair tests	I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I can use test results to make predictions to set up further comparative and fair tests
Reporting on findings				I can report on findings from enquiries, using presentations of results and conclusions I can use results to	I can report on findings from enquiries, including oral and written explanations, displays or presentations of	I can report and present findings from enquiries in oral and written forms such as displays and other presentations.	I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and

				draw simple conclusions. I can use secondary sources with adult support to help clarify results seen.	results and conclusions I can use results to draw simple conclusions, make predictions for new values and suggest improvements. I can use secondary sources with adult support to help clarify results seen. I can classify, group and present data in a series of ways to help in answering questions	I can use results to draw more complex conclusions, make predictions for new values and suggest improvements. I can use secondary sources to help interpret results seen. I can classify, group and present data in a series of ways to help in answering questions	degree of trust in results, in oral and written forms such as displays and other presentations I can use results to draw more complex conclusions, make predictions for new values and suggest improvements and raise further questions. I can use secondary sources to help interpret results seen. I can develop and use keys and other information to classify and describe objects in ways to help answer questions.
Using scientific evidence				I can identify differences, similarities or changes related to simple scientific ideas and processes I can use straightforward scientific evidence to answer questions or to support my findings	I can identify differences, similarities or changes related to simple scientific ideas and processes I can use straightforward scientific evidence to answer questions or to support my findings	I can identify scientific evidence that has been used to support or refute ideas or arguments	I can justify and evaluate my own and other people's scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources