Years 1 and 2

	Autumn A	Spring A	Summer A	Autumn B	Spring B	Summer B
Science Working scientifically objectives are ongoing throughout the year.	<u>Working Scientifically</u> 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			<u>Working Scientifically</u> 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		
	Animals, including humans <u>Year 1</u> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Name and talk about their members of immediate and extended family. Describe what is needed to healthy and clean. Use the senses to describe similarities and differences. Identify the parts of the body associated with the each of the senses. <u>Year 2</u> Draw and label the main parts of the human body and link body parts to the associated senses. 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, a balanced diet and hygiene, including how to look after teeth.	**Plants** <u>Year 1</u> Use senses to explore and talk about plants. Describe what a plant looks like. Identify, name and describe the basic structure of common plants, including garden plants and trees, both deciduous and evergreen. <u>Year 2</u> Observe and describe how seeds and bulbs grow into mature plants. Identify and describe the basic structure of a flowering plant including roots, stem/trunk, leaves and flowers. Find out about and describe what plants need to grow and stay healthy, including, water, light and temperature. Explore and compare the differences between things that are living, dead and things that have never been alive. Explore the habitats of living things, recognising the features of that habitat that meet the basic needs of the plants and animals that live there and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats.	**Materials** <u>Year 1</u> Name some familiar solids and liquids. Talk about some shapes that can be changed, e.g. by pinching, squashing, bending, twisting and stretching. Distinguish between an object and the material from which it is made. Identify and name some everyday materials. Use senses to explore a wide range of materials. <u>Year 2</u> Find out how the shapes of solid objects made from some materials can be changed, e.g. bending, twisting and stretching. melting, freezing and forces etc. Separate a solid from a liquid with support. Identify and name a variety of everyday materials, including wood, plastics, glass, metal, water and rock. Describe the physical properties of a range of everyday materials. Identify and compare the suitability of a range of everyday materials based on simple physical properties Talk about what common materials are used for, e.g. glass for windows Name and describe some simple solids and liquids.	**Animals, including humans** <u>Year 1</u> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Name and talk about their members of immediate and extended family. Describe what is needed to healthy and clean. Use the senses to describe similarities and differences. Identify the parts of the body associated with the each of the senses. <u>Year 2</u> Draw and label the main parts of the human body and link body parts to the associated senses. 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, a balanced diet and hygiene, including how to look after teeth. .	**Living things and their habitats** <u>Year 1</u> Identify, name and describe a variety of common animals including fish, amphibians, reptiles, birds and mammals, carnivores, herbivores and omnivores. Describe and compare the structure of common animals such as birds, fish, reptiles and pets. Identify and talk about a range of common animals. Talk about similarities between animals and plants and where some animals & plants are found. Talk about what animals eat. <u>Year 2</u> Name and talk about the young of humans and other animals. Identify and name a variety of common animals such as amphibians, mammals and invertebrates. Sort and group plants and animals according to simple features. Identify a range of similarities and differences between animals and plants. Describe how animals obtain their food from plants and other animals.	**Seasonal changes** <u>Year 1</u> Describe how the weather changes across the seasons. Observe and describe day length. Collect and record data about the weather. Identify signs of season change. Describe how day length changes across seasons. Identify changes in trees and clothing across seasons. Observe and describe weather. Explain how some animals adapt to seasons. <u>Year 2</u> Explain how to stay safe in different weather.
Science Key Vocabulary	**Year 1** Carnivore, Classify, Deciduous, Herbivore, Identify, Omnivore **Year 2** Absorbent, Habitat, Opaque, Transparent					

Years 3 and 4

	Autumn A	Spring A	Summer A	Autumn B	Spring B	Summer B
Science Working scientifically objectives are ongoing throughout the year	<u>Working Scientifically</u> 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.			<u>Working Scientifically</u> 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.		
	Forces, Electricity <u>Year 3</u> Compare how things move on different surfaces. Observe how magnets attract or repel each other and attract some materials and not others. Describe magnets as having two poles. Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.	**Light, Sound** <u>Year 3</u> Recognise that light is needed to see things and that dark is the absence of light. Recognise that shadows are formed when light from a light source is blocked by a solid object. Notice that light is reflected from surfaces. Recognise that light from the sun is dangerous and that there are ways to protect the eyes.	**Animals including humans** <u>Year 3</u> Recognise that living things grow and reproduce. Describe the basic conditions that plants and animals need in order to survive. Describe and compare features of living, dead and non-living things. Describe reasons for criteria for sorting and grouping, for example, number of legs, shape of leaf.	**Materials, Rocks** <u>Year 3</u> Identify and compare the uses of a range of common everyday materials and their properties. Compare and group different kinds of rocks based on appearance and simple physical properties. Compare how objects move on different surfaces. Talk about materials that are magnetic.	**Plants** <u>Year 3</u> Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Identify and describe the functions of different parts of flowering plants, including roots, stem/trunk, leaves and flowers. Explore the requirements of plants for life and growth (air, light, water, nutrients from	**Animals including humans** <u>Year 3</u> Identify and describe simple features of human and other animal skeletons, and how muscles are used for support, protection and movement. Describe in simple terms the changes that take place as animals grow. Identify that animals including humans need the right types and amount of nutrition and that they cannot make their

	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. Predict whether 2 magnets will attract or repel each other, depending on which poles are facing. Recognise that batteries are a source of electricity. Make circuits with more one than 1 bulb. Explain simply how the number of batteries affects the amount of electricity. Talk about the effect of making or breaking contacts in a circuit. Recognise common conductors and insulators. **Year 4** Recognise that pushes and pulls will bring an object to rest more quickly. Describe situations where friction is helpful and where it is not. Identify the effects of friction acting between moving surfaces Predict whether two magnets will attract or repel each other, depending on which poles are facing. Describe situations where there is more than one force acting on an object. Compare and group everyday materials that are magnetic and identify magnetic materials. Identify factors than increase resistance. Describe why a bulb won't light and identify the problem within the circuit. Construct and record a simple series circuit, and name its basic parts, including cells, wires, bulbs, switches and buzzers. Know that a bulb lights up when there is an effective conducting material in the circuit and is part of a complete circuit. Describe what happens when making and breaking a circuit, recognise that a switch opens and closes a circuit and link to the lighting of a bulb. Identify common appliances that run on electricity. Recognise common conductors and insulators and associate metals with being good conductors	Talk about how sound travels. Use the term vibration, when describing sounds and recognise that vibrations from sounds travel through a medium to the ear. Recognise that sounds get fainter as the distance from the sound source increases. **Year 4** Describe what happens to a light source in the dark. Find patterns that determine the size of shadows. Describe the way in which light is reflected from surfaces. Describe in simple terms how light travels and what happens. Describe in detail how sound travels and how it can be changed. 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 produce it.	Recognise and talk about different living things found in different places, for example, ponds, woods. Use a simple food chain, identifying and naming different sources of food. Identify ways in which an animal or plant is suited to its environment, for example, a fish having fins to help it swim. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. **Year 4** Describe basic life processes, e.g. growth and reproduction. Identify and discuss in simple terms things that can cause illness or decay. Identify and talk about known micro- organisms Describe differences and similarities between a range of living and non- living things. Describe features of plants and animal and compare similarities and differences between sub-groups, recognising that all living things can be grouped in different ways. Explore and use classification keys to help to group, identify and name a variety of living things in the local and wider environment. Construct and interpret a variety of food chains, identifying producers, predators and prey. Recognise that environments can change and that this can pose dangers to living things.	Recognise that soils are made from rocks and organic matter. Describe processes that can be used to change the shape of some materials, Identify a range of simple reversible and irreversible changes, Recognise that some things dissolve. Compare different kinds of rocks based on their appearance. Group together different kinds of rocks on the basis of their 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 **Year 4** Use knowledge and understanding of materials to sort and group materials. Identify and describe the features of sub-groups within a material with the same properties, Describe why materials are used for different purposes, Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when heated or cooled and that some can be reversed,and that some are irreversible, Measure or research the temperature at which materials change state when heated or cooled. Describe the difference between solids and liquids. Describe in simple terms the separation of solids by filtration. Explaining the fossilisation process and by comparing fossils to the animals they belong to. Explaining how soil is formed. Understanding the difference between natural and human-made rocks.	soil and room to grow) and how these vary from plant to plant and the way in which water is transported in plants. **Year 4** Explore in detail the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Identify and describe detail the functions of different parts of flowering plants, including 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 these vary from plant to plant and the way in which water is transported in plants.	own food, that they need nutrition from what they eat. Describe the link between an animal's diet and their type of teeth. **Year 4** Name and describe key features of the human body, including organs, skeleton and muscles. Talk in simple terms about how animals grow & reproduce. Describe the simple functions of the human digestive system in humans. Identify the different types of teeth in humans and their simple functions.
Science Key Vocabulary	**Year 3** Absorbent, Attract, Dispersal, Friction, Nutrition. Pollination, Reflective, Repel, Reproduction, Transportation **Year 4** Amphibians, Circuit , Condensation, Conductors, Evaporation, Insulators, Invertebrates, Oesophagus, Particles, Pitch, Series, Tone, Vertebrates, Vibration, Volume, Wave						

Years 5 and 6

	Autumn A	Spring A	Summer A	Autumn B	Spring B	Summer B
Science Working scientifically objectives are ongoing throughout the year.	<u>Working Scientifically</u> Planning different types of scientific enquiries to answer questions, including 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 results, explanations of and 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.			<u>Working Scientifically</u> Planning different types of scientific enquiries to answer questions, including 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 results, explanations of and 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.		

	Materials **Year 5** Identify and give reasons why materials are used for a specific task or purpose. Compare and group everyday materials based on evidence from comparative and fair tests, based on hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets. Demonstrate that dissolving, mixing and changes of state are reversible changes. 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. 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 vinegar (acid) on bicarbonate of soda. Describe in detail the properties of liquids, solids and gases. **Year 6** Explain how the differences between the properties of different materials can be used to classify substances. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago. Describe evaporation and condensation in the water cycle making the link between the rates of evaporation with temperature. Use developing knowledge of solids, liquids and gases to describe how mixtures might be separated, including through filtering, sieving and evaporating. **Scientists and Inventors**	**Electricity** **Year 5** Record and construct a series electrical circuit, identifying and naming its basic parts. Identify whether or not a bulb will light in a simple series circuit based on whether or not the bulb is part of a complete loop with a battery. Explain how to/what happens when you connect more than 1 battery. Describe the use of conductors & insulators in wires. **Year 6** Record and construct a parallel and series electrical circuit, identifying and naming its basic parts. Explain the link between the brightness of a bulb or 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 diagram. Identify whether or not a bulb will light in a simple parallel or series circuit based on whether or not the bulb is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and the impact on a bulb within a series circuit. Use by knowledge of conductors & insulators to construct wires. **Scientists and Inventors** **RSE**	**Animals, including humans** **Year 5** Describe scientifically the function of the main organs in the body, including muscles, the skeleton and their main functions. Describe the changes that take place as humans develop from birth to old age. Learn about the changes that take place during puberty. Use scientific terms to describe the key features of a healthy diet, including main food groups. Draw a timeline to indicate stages in the growth and development of humans. **Year 6** Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood. Recognise that normally the offspring of a living thing will not be identical to its parents. Recognise the impact of diet, exercise, drugs and lifestyle on the functions of the body Describe the ways in which nutrients and water are transported within animals, including humans. **Evolution and Inheritance** **Year 6** 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.	**Living things and their habitats** **Year 5** Represent and describe feeding relationships as a food chain beginning with a green plant (consumer and producer) Draw a detailed food chain from a range of habitats. Describe relationships using food chains, for example, predator and prey. Generate a key to identify the animals and plants in a range of habitats. **Year 6** Identify and describe the environmental factors needed to support a given plant or animal. Describe the feeding relationships between plants and animals in a range of habitats. **Forces** **Year 5** 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. Recognise that weight is a force and is measured in Newtons. Use a Force meter accurately. Recognise that when an object is at rest the forces are balanced. Recognise that unsupported objects fall to Earth because of the force of gravity acting between the Earth and the falling object. **Year 6** Identify the effects of air and water resistance that act between moving surfaces. Recognise that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs. Explain how motion is affected by forces such as gravitational attraction, magnetic attraction and friction. Describe motion in detail, in terms of balanced and unbalanced forces. Describe how gravity acts between the Earth and a falling object.	**Light** **Year 5** Use the terms transparent & opaque when describing light. Use scientific terms to describe shadows, including the way in which they are formed and can be altered. Use scientific terms to describe the functions of the eye. **Year 6** Recognise and explain how light appears to travel in straight lines. Use the idea that light travels in straight lines to explain why shadows have the same shape as the object that casts them. Use knowledge of how light travels to explain the formation of shadows. Use the idea that light travels in straight lines to explain that objects can be seen because they give out or reflect light into the eye. Explain that things are seen because light travels from light sources to the eye or from light sources to objects and then to the eye. **Earth and Space** **Year 5** Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. 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. **RSE**	**Classification** **Year 5** Describe the life process of reproduction in some plants and animals. Use scientific vocabulary to describe life processes. Identfiy the key features of living and non-living things in detail. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Use keys based on external features to help identify and group living things systematically. Explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird. **Year 6** Recognise that micro-organisms feed, grow and reproduce like other organisms. Recognise and suggest ways of preventing the spread of harmful micro-organisms. Identify an increasing range of features of living and non-living things in detail. 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. Give reasons for classification of plants and animals based on specific characteristics.
Science Key Vocabulary	**Year 5** Amphibian, Conductivity, Constellation, Embryo, Foetus, Gestation, Reproduction, Resistance, Rotation, Solubility, , Transparency **Year 6** Amps, Arteries, Cell, Circulatory, Conductors , Deoxygenated, Insulators , Oxygenated, Refraction, Respiration, Spectrum , Vessels, , Veins, Volts, Valve					