	EYFS Science Overview				
	Autumn	**Winter**	**Spring**	**Summer**	**Exploration opportunities**
Knowledge	Understanding the World: The Natural World • 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, including the seasons and changing states of matter.				
Progression into Year 1	• identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense • describe the simple physical properties of a variety of everyday materials • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies	• observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	• observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies • identify and describe the basic structure of a variety of common flowering plants, including trees • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets	• compare and group together a variety of everyday materials on the basis of their simple physical properties • distinguish between an object and the material from which it is made • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies	• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees • identify and name a variety of common animals that are carnivores, herbivores and omnivores • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies
Skills	I can explore how we see I can explore light and dark I can explore how we hear I can explore how we smell I can explore how we feel I can explore how we taste	I can talk about changes to the environment I can spot different birds in the UK in winter I can make a bird feeder I can describe what waterproof is I can describe what happens when something freezes I can discuss what happens when something melts	I can talk about changes to my environment I can observe the parts of a spring plant I can observe the life cycle of a chicken. I can discuss what different creatures need to survive I can discuss what different creatures need to survive	I can name food which is healthy and unhealthy I can see patterns in nature I can create shadows I can explore floating I can explore sinking I can test floating and sinking	I can talk about features of my environment I can talk about ways to look after our school I can look closely at natural objects I can talk about why things happen I can make observations about my surroundings
Please note that in EYFS we follow the children's interests and so these skills are all explorational opportunities.					
Working scientifically	I can ask **questions**. I can **describe** objects, materials and living things. I can **explore** the world around me. I can put objects into **groups** I can **answer** simple questions. I can find **patterns.**				

	Year 1 Science Overview				
	Biology		Chemistry	Physics	
	Plants	**Animals including humans**	**Everyday materials**	**Seasonal changes (Winter to spring)**	**Seasonal changes (Spring to summer)**
Knowledge	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	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.	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.	Pupils should be taught to: Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies	
Skills	I can describe how to plant a bean I can identify and name common wild plants I can identify and name some garden plants I can identify trees by their leaves I can sort deciduous and evergreen leaves I can identify and describe the parts of plants and trees I can talk about how my bean plant has grown I can say what plants need to grow well and give reasons for my answers	I can draw my body and label my body parts. I know which parts of my body I use to see, hear, taste, smell and feel. I can use my senses to do tests. I can identify common animals. I can describe and compare the structure of common animals. I can name common animals that are carnivores, herbivores and omnivores.	I can identify and name different materials I can tell the difference between an object and the materials it is made from. I can describe the properties of everyday materials I can identify which materials have certain properties. I can test different materials I can sort objects by their properties	I can describe how the weather changes across the seasons I can describe day length in autumn I can observe and describe the weather in autumn I can collect and record data about the weather in autumn. I can identify signs of autumn I can describe how day length varies from autumn to winter. I can identify changes in the trees and in clothes that we wear from autumn to winter. I can observe and describe the weather in winter I can collect and record data about the weather in winter. I can explain how some animals adapt in winter	I can describe how day length varies from winter to spring. I can identify changes in the trees and in clothes that we wear from winter to spring. I can observe and describe the weather in spring I can collect and record data about the weather in spring. I can identify signs of spring I can describe how day length varies from spring to summer. I can identify changes in the trees and in clothes that we wear from spring to summer. I can observe and describe the weather in summer. I can collect and record data about the weather in summer I can explain how to stay safe in the sun
Working scientifically	I can ask simple **questions** I can **observe** closely using simple equipment I can perform simple **tests** and **investigations** I can **identify** and **sort** different objects, materials and living things I can gather and **record** data to help in answering questions I can use my **observations** and ideas to suggest **answers** to questions I can make **predictions**				

	Year 2 Science Overview			
	Biology			Chemistry
	Living things and habitats	**Animals including humans**	**Plants**	**Everyday materials**
Knowledge	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.	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.	Pupils should be taught to: 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.	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.
Skills	I can look closely at plants and trees and record what I see. I can plant seeds and bulbs and suggest how to care for them. I can explain the life cycle of plants. I can describe what plants need to grow and stay healthy. I can use my observations to explain what plants need. I can observe and describe the growth of different plants.	I can describe how animals change as they grow. I can describe how humans change as they grow. I can describe the basic needs of humans and animals. I can identify healthy and unhealthy food, and say how much of them I should eat. I can give reasons why humans need to exercise. I know how and why I should keep myself clean.	I can compare the differences between things that are living, dead and have never been alive. I can map a habitat and identify what is in it. I can identify animals in their habitats. I can describe a habitat and identify animals live in it. I can identify how an animal is suited to its habitat. I can describe how animals get their food.	I can identify uses of different everyday materials. I can identify and group the uses of everyday materials I can compare the suitability of different everyday materials I can explain how the shapes of objects made from some materials can be changed. I can explain the process of recycling. I can tell you about the inventor John McAdam
Working scientifically	I can ask simple **questions** I can **observe** closely using simple equipment I can perform simple **tests** and **investigations** I can **identify** and **sort** different objects, materials and living things I can gather and **record** data to help in answering questions I can use my **observations** and ideas to suggest **answers** to questions I can make **predictions**			

	Year 3 Science Overview				
	Biology		**Chemistry**	**Physics**	
	Plants	**Animals including humans**	**Rocks**	**Light**	**Forces and Magnets**
Knowledge	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, 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.	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.	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	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.	Pupils should be taught to: Compare how things move on different surfaces. Notice that some forces need contact between 2 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 2 poles. Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.
Skills	I can name the different parts of flowering plants. I can explain the function of different parts of flowering plants. I can explain how pollination and fertilisation occur in flowers. I can plan and set up an investigation into what plants need to grow well. I can investigate the way in which water is transported within plants. I can order the stages of the life cycle of a flowering plant. I can understand the stages of the life cycle of a flowering plant.	I can explain how living things obtain food. I can state why animals, including humans, need the right type of nutrients. I can sort animals based on their skeletons. I can identify and name certain bones. I can identify and explain the three main functions of a skeleton. I know why we need muscles to move.	I can compare different types of rocks. I can group rocks based on their properties. I can explain how fossils are formed. I can explain Mary Anning's contribution to palaeontology. I can explain how soil is formed. I can observe the permeability of soils.	I can recognise that I need light to see things, and that dark is the absence of light. I can investigate which surfaces reflect light. I can use a mirror to reflect light and explain how mirrors work I know that light from the sun can be dangerous and that there are ways we can protect our eyes. I can investigate which materials block light to form shadows. I can find patterns when investigating how shadows change size.	I can identify the forces acting on objects. I can investigate how a toy car moves over different surfaces. I can sort magnetic and non-magnetic materials. I can investigate the strength of magnets. I can explore magnetic poles. I can observe how magnets attract some materials.
Working scientifically	I can ask relevant **questions** and use different types of scientific enquiries to answer them I can make systematic and careful **observations** I can take accurate **measurements** using a range of equipment, including thermometers and data loggers. I can set up simple practical **enquiries** and **investigations** using **comparative** and **fair tests**. 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 use straightforward scientific evidence to **answer** questions. I can identify **differences, similarities** or changes. I can use results to draw simple **conclusions**, make predictions for new values, suggest improvements and raise further questions.				

	Year 4 Science Overview				
	Biology		**Chemistry**	**Physics**	
	Animals including humans	**Living things and habitats**	**States of Matter**	**Sound**	**Electricity**
Knowledge	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.	Pupils should be taught to: 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.	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.	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.	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 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.
Skills	I can identify and name parts of the human digestive system. I can explain the functions of the digestive system. I can identify the types and functions of teeth. I can identify producer, predator and prey. I can construct and interpret food chains.	I can group living things in a range of ways I can identify the different types of vertebrates. I can use a classification key to identify vertebrates and invertebrates. I can identify invertebrates by observing their similarities and differences. I can create a classification table for living things. I can show the characteristics of living things in classification key. I can recognise positive and negative changes to the local environment. I can record and report findings of our local environment. I can describe environmental dangers to endangered species.	I can sort and describe materials. I can investigate gases and explain their properties. I can investigate materials as they change state. I can explore how water changes state I can investigate how water evaporates. I can identify and describe the different stages of the water cycle.	I can describe different sound sources. I can explain how sound travels. I can explore ways to change the pitch of a sound. I can explore how sound changes over distance. I can investigate ways to absorb sound. I can make different sounds by investigating pitch.	I can explain where electricity comes from. I can identify electrical appliances and the types of electricity they use. I can identify complete and incomplete circuits I can identify and sort materials into electrical conductors or insulators. I can explain how a switch works and why they are needed I can record and report on a switch investigation.
Working scientifically	I can ask relevant **questions** and use different types of scientific enquiries to answer them I can make systematic and careful **observations** I can take accurate **measurements** using a range of equipment, including thermometers and data loggers. I can set up simple practical **enquiries** and **investigations** using **comparative** and **fair tests**. 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 use straightforward scientific evidence to **answer** questions. I can identify **differences, similarities** or changes. I can use results to draw simple **conclusions**, make predictions for new values, suggest improvements and raise further questions.				

	Year 5 Science Overview				
	Biology		**Chemistry**	**Physics**	
	Animals including humans	**Living things and habitats**	**Materials**	**Forces and Magnets**	**Earth and Space**
Knowledge	Pupils should be taught to: Describe the changes as humans develop to old age.	Pupils should be taught to: 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.	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 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.	Pupils should be taught to: 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.	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.
Skills	I can describe the stages of human development. I can explain how babies grow and develop. I can describe and explain the main changes that occur during puberty, I can identify the changes that take place in old age. I can compare the gestation periods of humans and other animals. I can compare the life expectancies of humans with other animals.	I can describe how some plants reproduce. I can describe the life cycles of different mammals I can explain what Jane Goodall discovered about chimpanzees. I can compare the life cycles of amphibians and insects. I can compare the life cycles of plants, mammals, amphibians, insects and birds.	I can compare materials according to their properties I can investigate thermal conductors and insulators I can investigate which electrical conductors make a bulb shine brightest. I can investigate materials which will dissolve I can use different processes to separate mixtures of materials I can identify and explain irreversible chemical changes	can identify forces acting on objects I can explore the effect gravity has on objects and how the first theory of gravity was developed. I can investigate the effects of air resistance I can explore the effects of water resistance I can investigate the effects of friction. I can explore and design mechanisms.	I can explain why we know the Sun, Earth and Moon are spherical. I can name and describe features of the planets in our solar system I can explain how planets move in our solar system. I can explain day and night and the apparent movement of the sun across the sky I can investigate night and day in different parts of the Earth I can explain the movement of the Moon
Working scientifically	I can plan different types of scientific **enquiries** to answer questions, including recognising and controlling variables where necessary. I can take **measurements** using a range of scientific equipment, with increasing accuracy and precision. I can take repeat readings when appropriate. I can plan different types of scientific **enquiries** to answer questions, including recognising and controlling **variables** where necessary. 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 **report** and **present** findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. I can use test results to make **predictions** to set up further comparative and fair tests. I can **evaluate** my findings.				

Year 6 Science Overview

	Biology			Chemistry	Physics
	Animals, including humans	**Living things and habitats**	**Evolution and Inheritance**	**Light**	**Electricity**
Knowledge	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.	Pupils should be taught 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. Give reasons for classifying plants and animals based on specific characteristics.	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.	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.	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 simple circuit in a diagram.
Skills	I can identify and name the parts of the human circulatory system. I can describe the functions of the main parts of the circulatory system I can explain how water and nutrients are transported within the body. I can describe how diet and exercise impact on human bodies. I can explain the impact of drugs and alcohol on the body. I can describe how scientific evidence highlighted the dangers of smoking.	I can describe how scientific evidence highlighted the dangers of smoking I can give reasons for classifying animals based on their similarities and differences I can describe how living things are classified into groups I can identify the characteristics of different types of animals I can describe and investigate helpful and harmful microorganisms I can identify the characteristics of different types of microorganisms. I can classify organisms found in my local habitat.	I can represent a simple circuit in a diagram using recognised symbols. I can observe and explain the effects of differing volts in a circuit when testing the brightness of a lamp. I can observe and explain the effects of differing volts in a circuit when testing the loudness of a buzzer. I can plan an electricity investigation.	I can explain that light travels in straight lines from light sources to our eyes, and from light sources to objects and then to our eyes. I can understand how mirrors reflect light, and how they can help us see objects I can investigate how refraction changes the direction in which light travels. I can investigate how a prism changes a ray of light. I can investigate how light enables us to see colours. I can explain why shadows have the same shape as the object that casts them.	I can explain the scientific concept of inheritance. I can demonstrate understanding of the scientific meaning of adaptation. I can identify the key ideas of the theory of evolution I can identify evidence for evolution from fossil records. I can understand how human beings have evolved. I can explain how adaptations can result in both advantages and disadvantages
Working scientifically	I can plan different types of scientific **enquiries** to answer questions, including recognising and controlling variables where necessary. I can take **measurements** using a range of scientific equipment, with increasing accuracy and precision. I can take repeat readings when appropriate. I can plan different types of scientific **enquiries** to answer questions, including recognising and controlling **variables** where necessary. 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 **report** and **present** findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. I can use test results to make **predictions** to set up further comparative and fair tests. I can **evaluate** my findings.				