Skills and knowledge progression: Science

key progression points:

Animals Including humans (Incl. Y6 Evolution and Inheritance)						
Reception	Y1	Y2	Y3	Y4	Y5	Y6
• Can talk about some of the things they have observed, such as plants, animals, natural and found objects • Developing an understanding of growth, decay and changes over time • Make observations of animals and plants and explain why some things occur and talk about changes	• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	• notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	• 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	• describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey	• describe the changes as humans develop to old age	• 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 • 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

Plants (inc. Y5 Living things and their habitats)				
Reception	Y1	Y2	Y3	Y5
• Can talk about some of the things they have observed, such as plants, animals, natural and found objects • Developing an understanding of growth, decay and changes over time • Make observations of animals and plants and explain why some things occur and talk about changes	• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees	• observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	• identify and 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	• describe the life process of reproduction in some plants and animals

Living things and their habitats				
Reception	Y2	Y4	Y5	Y6
• Can talk about some of the things they have observed, such as plants, animals, natural and found objects • Developing an understanding of growth, decay and changes over time • Make observations of animals and plants and explain why some things occur and talk about changes • Talk about the features of their own environment and how environments might vary from one another	• 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	• recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things	• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals	• describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics

Materials					
Reception	Y1	Y2	Y3	Y4	Y5
• Create collaboratively sharing ideas, resources and skills (ART) • I can show interest in and describe the texture of things. (ART) • I can use various construction materials. (DT) • I can begin to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. (DT) • I can join construction pieces together to build and balance. (DT) • I can use available resources to create props to support role-play. (DT)	• distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties	• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe in simple terms how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter	• compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	• compare and group together everyday materials 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

Forces		
Reception	Y3	Y5
• Know similarities and differences in relation to places, objects, materials and living things • Can talk about some of the things they have observed, such as natural and found objects	• 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	• 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

Electricity		
Reception	Y4	Y6
• Know similarities and differences in relation to places, objects, materials and living things • Can talk about some of the things they have observed, such as natural and found objects	• identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors	• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • use recognised symbols when representing a simple circuit in a diagram

Light (inc. Y1 Animals including humans)			
Reception	Y1	Y3	Y6
• Know similarities and differences in relation to places, objects, materials and living things	• identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	• 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	• 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

Sound (inc. Y1 Animals including humans)		
Reception	Y1	Y4
• Know similarities and differences in relation to places, objects, materials and living things	• identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	• 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

Seasonal Changes (inc. Y5 Earth & Space)		
Reception	Y1	Y5
• Know similarities and differences in relation to places, objects, materials and living things • Understand the effect of changing seasons on the natural world around them.	• observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies	• 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

How we do this…

(Sticky knowledge)

Animals Including humans (Incl. Y6 Evolution and Inheritance)

Reception	Y1	Y2	Y3	Y4	Y5	Y6
• Can talk about some of the things they have observed, such as plants, animals, natural and found objects • Developing an understanding of growth, decay and changes over time • Make observations of animals and plants and explain why some things occur and talk about changes	• To name the five senses. • To know what those five senses do and which body part they link with. • To know why are senses are important and how we use them. • To discuss how are senses may differ to other peoples. • To know the sense we use with our eyes. • To label parts of the eye. • To know what it means to be blind. • To identify, name, draw and label the basic parts of the human body. • To know some of the amazing things that our bodies can do. Eg jumping, running, throwing, catching. • To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • To describe and compare the structure of a variety of common animals. • To identify and name a variety of common animals that are carnivores, herbivores and omnivores. • To know what a pet is and the different types of pets we may have in England.	• Notice that animals, including humans, have offspring which grow into adults. Identifying and classifying • To match, sort and group young animals and their adults. • Gathering and recording data to help in answering questions. • To find out how animals change as they grow into adults. • To compare the stages of the human life cycle. • To research and describe what animals, including humans, need to survive. • To investigate the importance of healthy eating and hygiene	• I understand that I need to eat a variety of foods to be healthy. • I understand that nutrition means eating a healthy and balanced diet. • I understand that animals also need a healthy and balanced diet. • I understand that meat-eating animals are called carnivores, plant-eating animals are called herbivores and animals which eat both are called omnivores. (recap) • I understand that many animals have skeletons to protect vital organs inside the body, allow movement and support the body and stop it from falling on the floor. • I can understand that movable joints connect bones • I can understand that muscles are connected to bones and move them when they contract. • I can understand that humans need to exercise, eat a healthy diet and be hygienic.	• To understand that a carnivore is an animal that only eats other animals. (recap) • To understand that a herbivore is an animal that only eats plants. (recap) • To understand that an omnivore is an animal that eats both animals and plants. (recap) • To understand what a food chain is. • To understand that a producer is • To understand that a consumer is • To be able to identify different types of teeth: incisors, canines, premolars and molars. • To understand the teeth of animals (including humans) are designed to eat different foods depending on the diet of the animal. • To know that humans have 2 sets of teeth during their lifetime. • To understand it is important to look after their teeth or they will start to rot. • To understand how to keep their teeth healthy (brushing, flossing, eating less sugar etc.).	• I can describe the stages of human growth and development e.g. fertilisation, prenatal, infancy, childhood, adolescence, early adulthood, middle adulthood, late adulthood/ old age. • I understand that babies grow at different rates. • I know the main changes that occur in puberty and that it prepares our bodies for being adults and reproduction. • I understand the changes that happen to a person in old age. • I know that different types of animals have different gestation periods and that the average length of gestation in humans is 40 weeks. • I know that different types of animals have different life expectancies and that in humans, on average in the UK, this is around 80 years of age.	• To know that in order to be healthy we need a balanced diet. • To name the different food groups. • To know how each different food group helps to keep our bodies healthy. • To know which types of food are included in each food group and why a variety of food is important for a healthy diet. • To know that the circulatory system transports blood and nutrients to the different parts of the body and I can explain how it works. • To know that the heart pumps blood around the body. • To know that the lungs take in Oxygen when we breathe in and expel waste gases (including Carbon Dioxide) when we breathe out. • To know what happens to the human heart when we exercise, and why. • To know that muscles work in pairs to move different parts of the skeleton. • To know that when muscles exercise they need an increased flow of blood because the muscles are working harder. • To be aware of the negative effects of drugs, tobacco and alcohol on the body. • To name some inherited characteristics in living things. • To name some ways in which offspring may vary from their parents.

				• To understand that the digestive system breaks down food. • To be able to name some main parts of the digestive system (tongue, oesophagus, stomach, pancreas etc.) • To understand that food is broken down by the teeth and further in the stomach and intestines where nutrients go into the blood; the blood takes nutrients around the body. • To start to understand how some parts of the digestive system work.		• To identify how animals and plants are adapted to suit their environment in different ways. • To understand that adaptation of plants and animals to suit their environment may lead to evolution. • To recognise that living things have changed over time and that a number of factors can affect a species' evolution. • I know how fossil evidence helps to explain the process of evolution. • To understand how humans have evolved over time. • To know that human behaviour can affect change in species over time.

Plants (inc. Y5 Living things and their habitats)				
Reception	Y1	Y2	Y3	Y5
• Can talk about some of the things they have observed, such as plants, animals, natural and found objects • Developing an understanding of growth, decay and changes over time • Make observations of animals and plants and explain why some things occur and talk about changes	• To know what a plant is. • To identify and describe the basic structure of a common flowering plant. • To identify and name a variety of common wild and garden plants. • To identify and name a variety of deciduous and evergreen trees. • To describe the basic structure of a tree. • To know the four basis things plants need to grow. •	• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. • Performing simple tests. Using their observations and ideas to suggest answers to questions. • Observe and describe how seeds and bulbs grow into mature plants. Observing closely, using simple equipment.	• I know the main parts of a flowering plant. • I know why the roots are an important part of a plant. • I know where plants get water from. • I know what parts of a plant transport water. . I know what plants need to create their own food. • I know why the leaves are an important part of the plant. • I know what each part of the flower does. • I know one of the ways a plant reproduces. • I know where the seeds are formed in a plant. • I know why plants need to disperse their seeds. • I know some of the ways a plant disperses its seeds. • I know how some seeds are dispersed by their appearance. • I know the different parts of a seed and their functions. • I know why seeds are an important food source for animals.	• I know the difference between sexual (where offspring inherit information from both parents) and asexual (by making a copy of a single parent) reproduction in plants. • I know what a life cycle is and can compare plant and animal life cycles.

Living things and their habitats				
Reception	Y2	Y4	Y5	Y6
• Can talk about some of the things they have observed, such as plants, animals, natural and found objects • Developing an understanding of growth, decay and changes over time • Make observations of animals and plants and explain why some things occur and talk about changes • Talk about the features of their own environment and how environments might vary from one another	• 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 • 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	• Understand that a habitat is the natural home or environment of an animal, plant or organism. • Understand that an organism is a living thing. • Recognise that organisms live in a habitat that is most suited to their needs. • Understand that animals are grouped according to their similarities (a classification system). • Recognise that animals can be grouped in a variety of different ways depending on their characteristics. • To understand that a vertebrate is any animal that has a backbone. • To understand that an invertebrate is any animal that doesn't have a backbone. • To understand that animals can be classified into different groups and that these groups are either vertebrates or invertebrates. • Understand what a classification key is and that it can be used to help classify animals. • Understand that classification keys can be useful to identify unfamiliar animals and plants. • To understand how to use classification keys to identify vertebrates and invertebrates found in the local and wider environment. • To generate questions to sort animals into a classification key. • Understand that plants can also be grouped in a variety of different ways according to their characteristics. • To recognise that environments can change and that this can sometimes pose dangers to living things.	• I know the difference between sexual (where offspring inherit information from both parents) and asexual (by making a copy of a single parent) reproduction in plants. • I understand that mammals use sexual reproduction to produce live young. • I know how Jane Goodall raised the profile of endangered animals. • I know that amphibians and insects use metamorphosis to transform from immaturity to an adult form. • I know what a life cycle is and can compare plant and animal life cycles.	• To be able to give reasons for classifying animals based on their similarities and differences. • To be able to classify organisms according to broad characteristics. • To find ways to distinguish between organisms that are similar. • To use appropriate scientific vocabulary to describe organisms and their features • To be able to classify plants according to their characteristics. • To know what micro-organisms are and how they can be grouped. • To know about Carl Linnaeus and his classification system. (context)

		• To understand that deforestation is when trees are cut down for timber. • To understand that humans can have both positive and negative impacts on the environment.		

Materials (inc. Y3 Rocks)					
Reception	Y1	Y2	Y3	Y4	Y5
• Create collaboratively sharing ideas, resources and skills (ART) • I can show interest in and describe the texture of things. (ART) • I can use various construction materials. (DT) • I can begin to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. (DT) • I can join construction pieces together to build and balance. (DT) • I can use available resources to create props to support role-play. (DT)	• To distinguish between an object and the material it is made from. • To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • To describe simple properties of a variety of everyday materials. • To compare and group together a variety of everyday materials on the basis of their simple physical properties. • To know what opaque and transparent mean and which materials are opaque and transparent.	• 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, by identifying the uses of different materials. • I can identify uses of different everyday materials. • To identify and classify the uses of everyday materials, in the context of the local area. • I can identify and group the uses of everyday materials. To gather and record data to help in answering questions, by exploring the purposes of different objects. • I can record my observations. • 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 know rocks can be used for a variety of purposes. • I can identify some common rocks. • I can identify rocks that are naturally occurring and those that are manmade. • I can identify some common rocks. • I know that rocks can be groups by their characteristics. • I know that rocks can be put into categories • I know 'erosion' means the process of material worn away and moved to another place. • I know 'permeable' means allowing water and gas to pass through something. • I know that rocks can be groups by their characteristics. • I know that rocks can be put into categories . I know soil is made up of rocks and decaying matter. . I know there are different types of soil. . I know there are different layers of soil underground. I know rocks move in a continuous cycle. I know a fossil is the remains of a plant or animal embedded in rock. . I know how fossils are formed. I can recognise a variety of fossils. . I know where fossils are usually found and why.	• To know that a solid retains its own shape. It is rigid and has a fixed volume. • To know that a liquid fits the shape of the container it's in. Liquids are not rigid and can be poured. They also have a fixed volume. • To be able to identify a range of solids and liquids. • To know that a gas will fill all the available space it can, are often visible and can be compressed. • To understand the difference between solids, liquids and gases. • To know the difference between the particles in solids, liquids and gases. • To understand the process of melting and freezing. • to understand that some materials can change from one state to another and back again. . To know that liquid water freezes at 0°C. . To know that solid water will melt at 0°C. • To understand that different materials have different temperatures at which they will melt. • To understand that evaporation is when a liquid turns into a gas. • To understand that all materials have a specific	• I can compare materials based on their properties, including hardness, permeability, transparency, magnetism and flexibility. • I can investigate thermal conductors and insulators. • I can investigate which electrical conductors make a bulb shine brightest. • I can identify which materials dissolve to form a solution. • I can separate mixtures of materials using sieving, filtering, evaporating and magnetism. • I can identify irreversible chemical changes and understand that a new material is formed.

		• I can explain the process of recycling.		boiling point when their liquid state turns into a gas. • To know that water boils at 100°C. • To understand that condensation is when a gas cools. • To understand that water vapour will condense when it hits a cold or cool surface. • To understand what the water cycle is and its process. • To understand how the process of evaporation and condensation works within the water cycle.	

Forces		
Reception	Y3	Y5
• Know similarities and differences in relation to places, objects, materials and living things • Can talk about some of the things they have observed, such as natural and found objects	• I know what a force is. • I can identify pushes and pulls. • I know that forces need contact between two objects. • I understand that different surfaces have an effect on force. • I understand that forces are measured in Newtons. • I can understand magnets exert attractive and repulsive forces on each other. • I know that a magnet has two poles and that opposites attract. • I can understand magnets exert non-contact forces, which work through some materials. • I can understand magnets exert attractive forces on some materials which are affected by magnet strength, object mass, distance from object and object material. • I know what a compass is and its function.	• I understand that forces are pushes and pulls. (recap) • I can identify forces working on an object, including gravity, friction, water resistance and air resistance. • I understand how gravity is measured and who discovered gravity. • I know that air resistance is a force against motion caused by objects having to move air out of the way. • I know that water resistance is a force against motion caused by objects having to move water out of the way. • I can investigate the effects of friction and know that friction is a force against motion caused by two surfaces rubbing against each other. • I understand how different mechanisms (including gears, pulleys and levers) work to help move an object.

Electricity		
Reception	Y4	Y6
• Know similarities and differences in relation to places, objects, materials and living things • Can talk about some of the things they have observed, such as natural and found objects	• To understand electricity can be generated through a variety of sources. • To identify common appliances powered by electricity. • To understand that electrical appliances can be powered by either battery or mains. • To identify potential electricity hazards and explain why they are dangerous. • To understand the difference between battery and mains electricity. • To understand the components that make up a simple circuit (wires, cell, bulb). • To understand a complete circuit is needed for electricity to flow through it and devices to work. • To know that a conductor allows electricity to flow through it. • To know that an insulator stops electricity from flowing through it. • To be able to recognise some conductors and insulators and suggest everyday uses for them. • To understand that a closed switch makes a complete circuit and therefore allows electricity to flow through it. • To understand that an open switch breaks the circuit and therefore electricity cannot flow through it.	• To know what electricity is. (recap) • To understand the difference between current and static electricity. • To know the difference between a series and a parallel circuit. • To know that a series circuit will not work if a lamp is broken or a wire is disconnected. • To be able to draw a working circuit. • To identify the conventional symbols used for drawing circuits. • To be able to draw a circuit using symbols. • To know that batteries are a store of energy and this energy pushes electricity around the circuit. • To be able to explain the effects of differing volts in a circuit. • To know that the brightness of the bulb in a circuit can be altered by changing the wires • To be able to suggest questions to investigate, decide what to do and what equipment to use to test the question. • To be able to draw conclusions from a set of results. • To be able to build a working circuit for a particular purpose.

Light (inc. Y1 Animals including humans)			
Reception	Y1	Y3	Y6
• Know similarities and differences in relation to places, objects, materials and living things	• To know the sense we use with our eyes. • To label parts of the eye. • To know what it means to be blind.	• I know light is needed to be able to see things. • I know that dark is the absence of light. • I know a variety of things which create light. • I know the sun gives out potentially harmful rays called UVA. • I know what things can help protect my eyes and skin from the sun. • I know shadows are created when light is blocked. • I know transparent means it is see-through, translucent means partially see-through and opaque means isn't see through. • I know where a shadow may be from the position of the sun. • I know why shadows created by the sun change position over the course of the day. • I can find patterns in the way the size of a shadows changes. • I know light travels in straight lines. • I know we can see objects when light is reflected from a surface. • I know all objects reflect light to some degree. • I know what a highly reflective surface is. • I can identify a highly reflective surface. • I know ways in which reflective surfaces can be useful.	• To identify light sources (recap) • To know that light travels in a straight line (recap) • To understand how shadows are formed (recap) • To know that without light, we cannot see. • To be able to name the parts of the eye. • To describe what the main parts of the eye do to help us see. • To understand how we see objects. • To know that light travels from the source in a straight line, reflects off an object and then travels to our eye. • To know what the word reflect means. • To understand that the angle of incidence is equal to the angle of reflection. • To be able to explain how a periscope allows you to see objects you would not usually be able to see. • To know how light is refracted. • To understand that white light can be split into a spectrum of seven colours • To be able to name the seven colours that light can be split into

Sound (inc. Y1 Animals including humans)		
Reception	Y1	Y4
• Know similarities and differences in relation to places, objects, materials and living things	• To name the five senses. • To know what those five senses do and which body part they link with.	• To understand that sound is made when objects or materials vibrate. • To understand that the louder the sound, the bigger the vibration. • To understand that vibrations from sound sources travel through different materials to the ear. • To know that sound can travel through solids, liquids and gases. • To understand that some materials allow sound to pass through them more easily than others. • To understand that sounds get fainter as the distance from the sound source increases. • To understand why it is sometimes necessary to prevent sounds from travelling. • To know that soundproofing is when a special material is used to prevent sound from passing through it. • To know that the term 'pitch' describes how high or low a sound is. • To know that the term 'volume' is how loud or quiet something sounds. • To understand that the pitch of a stringed instrument depends on the length, thickness and tightness of the string.

Seasonal Changes (inc. Y5 Earth & Space)		
Reception	Y1	Y5
• Know similarities and differences in relation to places, objects, materials and living things • Understand the effect of changing seasons on the natural world around them.	• To name the four seasons and the months they occur in. • To observe changes across the four seasons. • To observe and describe weather associated with the seasons. • To observe and describe how day length varies in different seasons.	• I know the history of Space Travel (context) • I can give a reason for how we know the Earth, Moon and Sun are approximately spherical. • I know the names of the planets of the solar system. • I can explain how the planets move in the solar system relative to the sun (ie that the sun is at the centre of the solar system and all the planets move in an elliptical orbit around it). • I can explain how night and day occurs with reference to the rotation of the Earth. • I can explain why there are different time zones around the world due to the rotation of the Earth. • I can describe the movement of the Moon relative to the Earth (ie that it orbits every 27/28 days and spins at the same rate, thereby only showing one face to Earth).

Working Scientifically Skills Progression Grid:

R/KS1	LKS2	UKS2
● asking simple questions and recognising that they can be answered in different ways	● asking relevant questions and using different types of scientific enquiries to answer them	• planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
● performing simple tests	● setting up simple practical enquiries, comparative and fair tests	● using test results to make predictions to set up further comparative and fair tests
● observing closely, using simple equipment	● making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers	● taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
● using their observations and ideas to suggest answers to questions ● gathering and recording data to help in answering questions	● 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	● recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
	● 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	● 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 and classifying	● identifying differences, similarities or changes related to simple scientific ideas and processes	● identifying scientific evidence that has been used to support or refute ideas or arguments
	• using straightforward scientific evidence to answer questions or to support their findings.	