SCIENCE PROGRESSION MAP

Year Group and Topics	Learning Objectives NC-Unit/Scheme Knowledge-Skill Objectives	Key Vocabulary	Assessment of Core Knowledge and Skills/End Goal
Reception			
See separate EYFS Progression Map			
Year 1			
Animals Including Humans	**KS1 National Curriculum Objectives** ● To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. ● To identify and name a variety of common animals that are carnivores, herbivores and omnivores. ● To 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. **Scientific Knowledge and Understanding** ● To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. ● To compare a variety of common animals including fish, amphibians, reptiles, birds and mammals. ● To identify and name a variety of common animals that are carnivores, omnivores and herbivores. ● To identify, name, draw and label the basic parts of the human body. ● To identify which part of the body is associated with each sense. ● To compare humans. **Working Scientifically Objectives** ● To ask questions ● Venn diagrams ● To make predictions using senses ● To observe features of the human body	animal, herbivore, carnivore, omnivore. mammal, bird, fish, reptile, amphibian, living, beak wing. senses, see, hear, smell, touch, taste, paws, feathers, fur, scales, claws, talons, fly, swim, crawl, run. climb	**Assessment of Core Knowledge** ● To be able to discuss the features of different common animals using scientific language such as feathers, beak, scales, fins etc. ● To identify similarities and differences between different animals. ● When focusing on humans, to identify body parts and linking these to senses as well as discussing the similarities and differences between humans.

Plants	**KS1 National Curriculum Objectives** ● To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. ● To identify and describe the basic structure of a variety of common flowering plants, including trees. **Scientific Knowledge and Understanding** ● To identify different plants. ● To identify and describe the basic structure of plants. ● To understand that plants can grow. ● To name a variety of common and wild plants. ● To sort a variety of plants. ● To name a variety of common plants that we can eat. ● To identify , name and describe the basic structure of deciduous and evergreen trees. **Working Scientifically Objectives** ● To ask simple questions and recognise that they can be answered in different ways. ● To observe closely. ● To perform simple tests, using simple equipment. ● To identify and classify. ● To use their observations and ideas to suggest answers to questions ● To gather and record data to help in answering questions.	plant, tree, deciduous, evergreen, flower, roots, stem and leaf	**Assessment of Core Knowledge** ● To label the basic features of different wild and common plants. ● To identify wild plants in their local area and discuss plants that we can eat. ● To recognise the difference between deciduous and evergreen trees.
Materials	**KS1 National Curriculum Objectives** ● To distinguish between an object and the material from which it is made. ● To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. ● To describe the simple physical 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. **Scientific Knowledge and Understanding** ● To identify a variety of everyday materials. ● To describe the physical properties of a variety of everyday materials. ● To distinguish between an object and the material from which it is made. ● To compare and group together a variety of everyday materials on the basis of their simple physical properties. ● To investigate the properties of different materials. ● To investigate the properties of different fabrics.	material, fabric, object, fragile, waterproof, hard, oft, rough, smooth	**Assessment of Core Knowledge** ● To identify objects made from different materials. ● To identify the difference between an object and the material from which it is made. ● To group and sort different materials based on their properties. ● To investigate different materials to see which material would be best to make an umbrella and curtains.

	Working Scientifically Objectives ● To ask simple questions and recognise that they can be answered in different ways. ● To observe closely, using simple equipment. ● To perform simple tests. ● To identify and classify. ● To use their observations and ideas to suggest answers to questions. ● To gather and record data to help in answering questions.		
Seasonal Changes	**KS1 National Curriculum Objectives** ● Observe changes across the four seasons. ● Observe and describe weather associated with the seasons and how the day length varies. **Scientific Knowledge and Understanding** ● To observe and describe changes across the four seasons. ● To observe and describe weather associated with the seasons and how the day length varies. ● To observe and describe changes across the four seasons. ● To observe and describe weather associated with the seasons and how the day length varies. ● To observe how the day's length varies. **Working Scientifically Objectives** ● To complete careful observational drawings of leaves. ● To talk about autumn weather and pack an appropriate suitcase for a trip in autumn. ● To talk about what they have learnt about autumn. ● To explain what weather feels like. ● To record results in a simple weather diary. ● o talk about what they have learnt about winter. ● To record different signs of spring using labelled diagrams and pictures. ● To record different signs of summer using labelled diagrams and pictures. ● To ask simple questions about what is going on and make careful observations.	spring, summer, autumn, winter, rain, sun, change and daylight hours	**Assessment of Core Knowledge** ● To identify signs of Autumn. ● To identify typical weather types associated with autumn. ● To identify and sort through events that happen during autumn. ● To observe how crystals form over time. ● To observe features of winter weather. ● To identify and sort through events that happen during winter. ● To identify signs of spring on a spring walk. ● To identify the signs of summer.

Year 2			
Animals Including Humans	**KS1 National Curriculum Objectives** ● 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) ● To describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene **Scientific Knowledge and Understanding** ● To find out about and describe the basic needs of animals, including humans, for survival. ● To notice that animals including humans have offspring which grow into adults. ● To gather and record data. ● To describe the importance for humans to exercise. ● To describe the importance for humans to eat the right amounts of different types of food. ● To describe the importance for humans to have good hygiene. ● To describe the importance for humans to look after themselves. **Working Scientifically Objectives** ● To ask simple questions and recognise that they can be answered in different ways. ● To observe closely, using simple equipment. ● To perform simple tests. ● To identify and classify. ● To use their observations and ideas to suggest answers to questions. ● To gather and record data to help in answering questions.	basic needs, diet, exercise, hygiene, illness, medicine, offspring, seven basic needs, survive	**Assessment of Core Knowledge** ● To understand the basic needs that all humans need to survive and live. ● To describe the importance of exercise, a healthy diet and good hygiene as ways to keep us healthy. ● To identify offspring of different animals and how they develop and change into adults as they grow.
Living Things and Their Habitats	**KS1 National Curriculum Objectives** ● 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 micro-habitats	alive, dead, living. habitat. microhabitat, conditions, adapted, food chain, omnivore, herbivore, carnivore, animal, adaptation, features, suited, nutrition, human, reproduction, movement,	**Assessment of Core Knowledge** ● To examine whether things are living, dead or have never been alive. ● To examine microhabitats and larger habitats to identify some animals that may live there. ● To discuss how living things adapt to their environment.

	Scientific Knowledge and Understanding ● To explore and compare the differences between living, dead and things that have never been alive. ● To identify and name a variety of plants and animals in their habitats, including microhabitats. ● To identify and name various plants and animals in their habitats. ● To observe closely and use observations to answer questions. ● To identify that most living things live in a habitat to which they are suited. ● To construct a simple food chain. **Working Scientifically Objectives** ● To ask questions ● To draw basic conclusions ● To record observations ● To use tables and pictograms ● To interpret results ● To communicate feelings	differences, similarities, respiration, growth, prefer, plant, sensitivity, survive, ocean, woodland, forest, jungle, savanna, desert, mountain and compare	● To examine food chains within habitats.
Materials	**KS1 National Curriculum Objectives** ● Identify and compare the sustainability 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. **Scientific Knowledge and Understanding** ● To identify a variety of everyday materials. ● To distinguish between an object and the material it is made from. ● To investigate the properties of different materials. ● To investigate the properties of different materials. **Working Scientifically Objectives** ● To ask simple questions and recognise that they can be answered in different ways. ● To observe closely, using simple equipment. ● To perform simple tests. ● To identify and classify. ● To use their observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.	material, fabric, object, fragile, waterproof, hard, soft, rough, smooth, flexible, rigid, bend, stretch and twist.	**Assessment of Core Knowledge** ● To identify the properties of different materials. ● To conduct investigations to explore how different materials are better suited for different objects. ● To explore how materials can be changed by squashing, bending, twisting and stretching them.
Plants	**KS1 National Curriculum Objectives** ● Observe and describe how seeds and bulbs grow into mature plants.	plant, tree, flower, roots, stem, leaf, seed and bulb	**Assessment of Core Knowledge**

	● Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. **Scientific Knowledge and Understanding** ● To identify that fruit, vegetables and herbs are a type of plant that we eat. ● To observe and describe how seeds grow into mature plants. ● To know what plants need to grow and stay healthy. ● To explain the life cycle of plants. **Working Scientifically Objectives** ● To ask simple questions and recognise that they can be answered in different ways. ● To observe closely, using simple equipment. ● To perform simple tests. ● To identify and classify. ● To use their observations and ideas to suggest answers to questions. ● To gather and record data to help in answering questions.		● To identify different seeds and bulbs and plants we can eat. ● To identify what plants need to grow and what they need to continue to grow and stay healthy.
Seasonal Changes	**KS1 National Curriculum Objectives** ● Observe changes across the four seasons ● Observe and describe weather associated with the seasons and how the day length varies **Scientific Knowledge and Understanding** ● To observe and describe changes across the four seasons. ● To read the information in a bar chart. **Working Scientifically Objectives** ● To communicate my results and talk about what I have learnt. ● To record and talk about what I have learnt. ● To communicate my results and talk about what I have learnt.	spring, summer, autumn, winter, rain, Sun, change, daylight hours, temperature, thermometer and rain gauge	**Assessment of Core Knowledge** ● To observe time and research the difference between autumn and winter. ● To observe time and research the difference between spring and summer. ● To observe time and research the difference in daylight hours during different seasons.

Year 3			
Animals Including Humans	**KS2 National Curriculum Objectives** ● 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. **Scientific Knowledge and Understanding** ● To identify that humans have bones for support, protection and movement. ● To set up a simple practical enquiry and communicate the results. ● To identify that humans have muscles for support, protection and movement. ● To identify that some other animals have bones for support, protection and movement. ● To understand that animals, including humans, need the right type of nutrition. **Working Scientifically Objectives** ● To ask relevant questions and use different types of scientific enquiries to answer them. ● To set up simple practical enquiries, comparative and fair tests. ● To make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. ● To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ● To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	nutrition, skeleton, muscles, healthy, unhealthy, diet, bones, vertebrate and invertebrate	**Assessment of Core Knowledge** ● To understand the structure of the human skeleton and how the muscles work alongside the skeleton to support and protect the human body. ● To explore how skeletons differ in different animals. ● To recognise the importance of eating a healthy diet.
Forces and Magnets	**KS2 National Curriculum Objectives** ● Compare how things move on different surfaces ● Notices that some forces need contact between two objects, but magnetic forces can act at a distance. ● Observe how magnets attract or repel each other and attract some materials and not others.	force, magnet, contact, non-contact, attract, repel, magnetic. non-magnetic and iron	**Assessment of Core Knowledge** ● To explore simple pushes and pulls. ● To describe how the texture of an object or the surface it is on can affect how the object moves.

	● Compare and group a variety of everyday materials together based on whether they are attracted to a magnet and identify some magnetic materials. ● Describe magnets as having two poles. ● Predict whether two magnets will attract or repel each other, depending on which poles are facing. **Scientific Knowledge and Understanding** ● To compare how different things move. ● To plan and conduct a fair test to compare how objects move on different surfaces ● To explore how magnetic forces act at a distance ● To compare and group various everyday materials based on whether they are attracted to a magnet. ● To predict whether two magnets will attract or repel each other, depending on which poles are facing. ● To record my findings using simple scientific vocabulary and use my results to draw simple conclusions. **Working Scientifically Objectives** ● To set up simple, practical enquiries, comparative and fair tests. ● To gather, record, classify and present data in a variety of ways to help in answering questions. ● To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. ● To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.		● To investigate different magnets and how they can pull (attract) and push (repel) at a distance without contact.
Light	**KS2National Curriculum Objectives** ● 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 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 a solid object ● Find patterns in the way that the size of shadows change **Scientific Knowledge and Understanding** ● To recognise that there needs to be light in order to see things and that darkness is the absence of light ● To notice that light is reflected from surfaces.	Light source, dark, reflect, shadow, opaque, translucent, transparent, luminous	**Assessment of Core Knowledge** ● To recognise that they need light in order to see things and that dark is the absence of light. ● To identify light sources, explore what happens when light reflects off mirrors or other reflective materials and think of ways to protect themselves from the Sun. ● To identify which materials make the best/worst shadows and describe the relationship between the height of a light source and the length of shadow.

	● To recognise that light from the Sun can be dangerous and that there are ways to protect your eyes from the Sun. ● To recognise that shadows are formed when light from a light source is blocked by an opaque object. ● To know that shadows take on the shape of the opaque object. ● To predict where a shadow will form in relation to an opaque object and a light source. ● To find patterns in the way that the length of shadows change. ● To know that light is reflected from surfaces (mirrors) **Working Scientifically Objectives** ● To set up simple practical enquiries, comparative and fair tests. ● To gather, record, classify and present data in a variety of ways to help in answering questions. ● To make systematic and careful observations and where appropriate, take accurate measurements using standard units, using a range of equipment. ● To use results to make simple conclusions, make predictions for new values, suggest improvements and raise further questions.		
Plants	**KS2 National Curriculum Objectives** ● 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. **Scientific Knowledge and Understanding** ● To explore the requirements of plants for life and growth. ● To identify, locate and describe the function of different parts of flowering plants. ● To identify, locate and describe the function of the roots in plants. ● To investigate the way in which water is transported within plants. ● To explore the part that flowers play in the life cycle of flowering plants, including pollination. ● To explore the part that flowers play in the life cycle of flowering plants, including seed formation and seed dispersal.	plant, tree, flower, roots, stem, leaf, seed, bulb, nutrients, pollination, formation and dispersal	**Assessment of Core Knowledge** ● To identify and describe the functions of the different parts of the plants. ● To explore what plants need for life and growth. ● To describe how water is transported through plants. ● To describe the different ways that plants disperse their seeds.

	Working Scientifically Objectives ● To ask relevant questions and use different types of scientific enquiries to answer them. ● To set up simple practical enquiries, comparative and fair tests. ● To make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. ● To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ● To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.		
Rocks	**KS2 National Curriculum Objectives** ● 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 **Scientific Knowledge and Understanding** ● To compare and group together different kinds of rocks on the basis of their appearance. ● To compare and group together different kinds of rocks on the basis of their physical properties. ● To explain how some rocks are formed. ● To explain how the Earth is made up of different layers of rocks and soils. ● To investigate different soils. ● To describe how fossils are formed when things that have lived are trapped within rock. **Working Scientifically Objectives** ● To ask relevant questions and use different types of scientific enquiries to answer them. ● To set up simple practical enquiries, comparative and fair tests. ● To make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. ● To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ● To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	rock, soil, fossil, appearance, physical properties, igneous rock, sedimentary rock and metamorphic rock	**Assessment of Core Knowledge** ● To explore different rocks and soils. ● To classify and group together rocks based on their appearance and physical properties. ● To recognise how the Earth is made up of different rocks and fossils. ● To begin to explain how some of the different rocks are formed. ● To understand what fossils are and how they are formed in rock.

Year 4			
Animals Including Humans	**KS2 National Curriculum Objectives** ● 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 **Scientific Knowledge and Understanding** ● To name the basic parts of the digestive system and describe their functions. ● To identify the different teeth and describe their functions. ● To plan and carry out an investigation. ● To communicate my results. ● To construct and interpret a variety of food chains. ● To understand what producers, predators and prey are. ● To construct and interpret a variety of food chains. ● To understand what producers, predators and prey are. **Working Scientifically Objectives** ● To set up simple practical enquiries, comparative and fair tests. ● To make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. ● To gather, record, classify and present data in a variety of ways to help answer questions. ● To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ● To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. ● To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	canines, carnivore, digestion, herbivore, incisor, large intestines, molars, oesophagus, omnivore, peristalsis, predator, prey, producer, saliva, small intestines and stomach	**Assessment of Core Knowledge** ● To name the parts and functions of each part of the digestive system. ● To identify the different types of teeth in humans and describe their purpose. ● To plan and conduct an investigation about which drink causes the most tooth decay. ● To construct and interest a variety of food chains, identifying producers, predators and prey.
Changing States	**KS2 National Curriculum Objectives** ● 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.	change, collection, condensation, evaporation, freeze, gas, heat, liquid, precipitation, property, solid, temperature and thermometer	**Assessment of Core Knowledge** ● To compare and group materials according to whether they are solids, liquids or gases. ● To describe how some materials change state when they are heated or cooled and be able to

	● Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. **Scientific Knowledge and Understanding** ● To identify solids, liquids and gases. ● To make careful observations. ● To communicate my results. ● To take accurate measurements using thermometers. ● To observe that some materials change state when they are heated or cooled. ● To identify the part played by evaporation and condensation in the water cycle. ● To plan and carry out a fair test. ● To associate the rate of evaporation with temperature. **Working Scientifically Objectives** ● To set up simple practical enquiries, comparative and fair tests. ● To make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. ● To gather, record, classify and present data in a variety of ways to help answer questions. ● To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. ● To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.		identify and name these processes as melting, freezing, evaporating or condensing. ● To identify the part played by evaporation and condensation in the water cycle. ● To plan and conduct investigations involved melting and evaporation.
<u>Electricity</u>	**<u>KS2 National Curriculum Objectives</u>** ● 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. **Scientific Knowledge and Understanding** ● To identify common appliances that use electricity. ● To construct a simple circuit and name the parts of the circuit. ● To identify if a bulb will light up in a circuit.	appliance, battery, circuit, components, conductor, current, electrical, insulator, mains power, portable, pylon, switch	**Assessment of Core Knowledge** ● To sort common electrical appliances into battery and mains powered. ● To construct simple series circuits containing a variety of components and understand the difference between complete and incomplete circuits. ● To identify whether or not a bulb will light in a simple series circuit and suggest ideas to fix incomplete circuits.

	• To recognise common conductors and insulators. • To investigate switches. **Working Scientifically Objectives** • To ask relevant questions and use different types of scientific enquiries to answer them. • To set up simple practical enquiries, comparative and fair tests. • To make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • To record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. • To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • To use straightforward scientific evidence to answer questions or to support their findings.		• To plant and conduct an investigation to discover which materials make good insulators.
Living Things and Their Habitats	**KS2 National Curriculum Objectives** • Recognise that living things can be grouped in various ways. • Explore and use classification keys to help group, identify and name various living things in their local and wider environment. • Recognise that environments can change and sometimes pose dangers to living things. **Scientific Knowledge and Understanding** • To develop descriptions using relevant scientific language and vocabulary. • To recognise that living things can be grouped in various ways. • To explore and name various living things in my local environment. • To explore and use classification keys to help group, identify and name various living things in my local environment. • To recognise that environments can change and sometimes pose dangers to living things. **Working Scientifically Objectives** • To observe characteristics of living things. • To identify similarities and differences in characteristics. • To gather and record data in a table. • To record observations from scientific enquiry. • To ask relevant questions to clarify things. • To use evidence to answer questions and present findings. • To record findings about endangered species.	environment, classify, vertebrate, invertebrate, exoskeleton, key, adaptation, pollution	**Assessment of Core Knowledge** • To recognise the seven life processes common to all living things. • To sort living things using a variety of criteria and extend use of scientific vocabulary to describe the features and characteristics of animals and plants. • To conduct a local habitat search and identify unknown living things using a classification key.

Sound	**KS2 National Curriculum Objectives** ● 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. **Scientific Knowledge and Understanding** ● To identify how sounds are made, associating some of them with something vibrating. ● To recognise that vibrations from sounds travel through a medium to the ear. ● To recognise that vibrations from sounds travel to the ear. ● To investigate if the size of the pinna affects the volume of the sound. ● To report my findings from enquiries. ● To find patterns between the pitch of a sound and features of the object that produced it. ● To find patterns between the volume of a sound and the strength of the vibrations that produced it. ● To set up simple fair tests. **Working Scientifically Objectives** ● To set up simple practical enquiries, comparative and fair tests. ● To make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. ● To report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. ● To use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	vibrate/vibrations, volume, pitch, pinna, cochlea and eardrum	**Assessment of Core Knowledge** ● To describe how vibrations cause sounds and how sounds travel through different mediums at different speeds. ● To explore how sounds can change in pitch and loudness and be able to explain this using scientific language. ● To explain what happens to sound vibrations when they reach the ear.

Year 5			
Forces	**KS2 National Curriculum Objectives** ● Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling objects.. ● Identify the effects of air resistance, water resistance and friction that act between moving surfaces. ● Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. **Scientific Knowledge and Understanding** ● To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and falling objects. ● To identify the effect of friction between moving objects. ● To plan different types of scientific enquiries to answer questions, including recognising and controlling variables. ● To take measurements using a range of scientific equipment. ● To identify the effect of air resistance. ● To identify the effect of water resistance. ● To recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect. **Working Scientifically Objectives** ● To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ● To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. ● To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. ● To use test results to make predictions to set up further comparative and fair tests. ● To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.	force, friction, gravity, pull, push, repel, resistance, drag, streamlined, upthrust, buoyancy, Newton(N), gear, lever and pulley	**Assessment of Core Knowledge** ● To name individual forces e.g gravity, friction, upthrust. ● To describe frictional forces e.g air resistance and water resistance. ● To identify what a mechanism is and describe how pulleys, levels, gears are used to allow a smaller force to have a greater effect.
Materials	**KS2 National Curriculum Objectives**	soluble, insoluble, saturation, solution, filtration, boiling,	**Assessment of Core Knowledge**

	• Compare and group everyday materials based on 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 we might separate mixtures, 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 the bicarbonate of soda. **Scientific Knowledge and Understanding** • To compare and group materials according to whether they are solids, liquids or gases and name their properties. • To describe the properties of materials using scientific vocabulary. • To investigate the thermal insulation of different materials. • To compare and group materials based on their response to magnets. • To know some materials dissolve in a liquid to make a solution. • To predict how I could separate mixtures. • To explain why some changes are irreversible. **Working Scientifically Objectives** • To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • To use test results to make predictions to set up further comparative and fair tests. • To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. • To identify scientific evidence used to support or refute ideas or arguments.	condensing, evaporation, freezing, melting point, chemical change, physical change, reversible change and irreversible change	• To describe the properties of materials using scientific language. • To investigate which materials make the best thermal insulators. • To describe the properties of materials (e.g soluble and insoluble). • To investigate how to separate materials using these properties. • To name separation methods (filtering, sieving, evaporation, magnets) and decide on the most efficient method for separating a mixture of materials.

Animals Including Humans	**KS2 National Curriculum Objectives** ● Describe the changes as humans develop to old age. **Scientific Knowledge and Understanding** ● To describe the human life cycle. ● To understand how a foetus develops in the womb. ● To describe what happens when I am a teenager. ● To describe what happens when I am a senior. **Working Scientifically Objectives** ● To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ● To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. ● To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. ● To use test results to make predictions to set up further comparative and fair tests. ● To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. ● To identify scientific evidence that has been used to support or refute ideas or arguments.	birth, conception/fertilisation, death, develop, egg, foetus, uberty, sperm and womb	**Assessment of Core Knowledge** ● To identify the different stages of the human life cycle. ● To discuss a simple timeline and explain what happens in the womb, during puberty and when you are older.
Living Things and Their Habitats	**KS2 National Curriculum Objectives** ● Describe the differences in the life cycles of a mammal, an amphibian, a reptile, an insect and a bird. ● Describe the life process of reproduction in some plants and animals. **Scientific Knowledge and Understanding** ● To compare similarities and differences between how animals and plants perform the seven life processes. ● To discuss the work of a naturalist. ● To explain how mammals reproduce. ● To explain how animals reproduce. ● To understand reproduction in plants. ● To describe the differences in the life cycles of mammals, amphibians, reptiles, insects and birds. ● To explain the life cycle of plants. **Working Scientifically Objectives** ● To use oral and written forms to report conclusions.	fertilisation, pollination, pollen, stamen, pistil, seed dispersal and reproduction	**Assessment of Core Knowledge** ● To learn the seven life processes that distinguish living from nonliving things. ● To compare and describe differences in the life cycles of mammals, amphibians, reptiles, birds and insects. ● To compare differences and similarities between five different animal groups.

	● To present data in a variety of different ways to help answer my questions. ● To ask relevant questions and find ways to answer them and make accurate and relevant predictions. ● To suggest next steps based on the weakest aspects of the enquiry. ● To record my results using a bar chart and explain the results.		
Earth and Space	**KS2 National Curriculum Objectives** ● 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. **Scientific Knowledge and Understanding** ● To describe the planets in the solar system. ● To describe the Sun, Earth and Moon as approximately spherical bodies. ● To describe the movement of the Earth, and other planets, relative to the Sun in the solar system. ● To describe the movement relative to the Earth. ● To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. ● To describe the movement of the Moon relative to the Earth. **Working Scientifically Objectives** ● To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ● To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. ● To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. ● To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. ● To identify scientific evidence that has been used to support or refute ideas or arguments.	orbit, axis, day, month, planet, solar system, year and gravity	**Assessment of Core Knowledge** ● To learn that the Earth is part of the Solar system and that the Sun is at the centre of that system. ● To name the other planets (based on their distance from the Sun). ● To be able to describe the movement of Earth (and other planets) in relation to the Sun. ● To explain why there is day and night on Earth and related this to time.

Year 6			
Animals Including Humans	**KS2 National Curriculum Objectives** ● 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. **Scientific Knowledge and Understanding** ● To identify and name the main parts of the human circulatory system. ● To identify and name the main parts of the heart. ● To investigate which activity increases my heart rate the most. ● To describe how water and nutrients are transported in humans. ● To identify how humans can live a healthy lifestyle. **Working Scientifically Objectives** ● To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ● To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. ● To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. ● To use test results to make predictions to set up further comparative and fair tests. ● To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. ● To identify scientific evidence that has been used to support or refute ideas or arguments.	heart, lungs, blood, veins, arteries and heart rate	**Assessment of Core Knowledge** ● To describe how the human circulatory system transports oxygen around our body. ● To identify parts of the heart and how it is an important muscle in our bodies. ● To explain how different activities can increase the heart rate. ● To describe how humans can lead a healthy lifestyle and learn about what people do that can cause them to be unhealthy.
Electricity	**KS2 National Curriculum Objectives** ● 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.	appliance, battery, circuit, components, conductor, electrical, insulator, mains power, pylon, renewable energy and non-renewable energy	**Assessment of Core Knowledge** ● To construct simple series circuits and draw scientific symbols. ● To conduct investigations to determine how the voltage in a circuit affects the brightness of a bulb.

	Scientific Knowledge and Understanding ● To use symbols when drawing a simple circuit diagram. ● To associate the brightness of a lamp with the number and voltage of cells used in the circuit. ● To investigate variations in how components function. ● To investigate variations in how components function and write a conclusion. ● To name renewable and non-renewable sources of energy. **Working Scientifically Objectives** ● To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ● To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. ● To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. ● To use test results to make predictions to set up further comparative and fair tests. ● To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. ● To identify scientific evidence that has been used to support or refute ideas or arguments.		● To explain the difference between renewable and non-renewable energy sources.
Light	**KS2 National Curriculum Objectives** ● Recognise that light appears to travel in straight lines. ● Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. ● Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. ● Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. **Scientific Knowledge and Understanding** ● To recognise that light appears to travel in straight lines. ● To 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. ● To predict which materials make good reflectors. ● To 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.	dark, reflect, shadow, opaque, translucent, transparent, luminous, scattering, absorption and refraction	**Assessment of Core Knowledge** ● To explore the way light behaves, including light sources, reflection and shadows. ● To make predictions and investigate the relationship between light sources, objects and shadows and understand how the eye works.

	● To explain how the eye works. ● To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. ● To explain how shadows change during the day. ● To use the idea that light travels in straight lines to explain that we can see objects because they give out or reflect light into the eye. ● To 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. **Working Scientifically Objectives** ● To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ● To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. ● To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. ● To use test results to make predictions to set up further comparative and fair tests. ● To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.		
Living Things and Their Habitats	**KS2 National Curriculum Objectives** ● Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. ● Give reasons for classifying plants and animals based on specific characteristics. **Scientific Knowledge and Understanding** ● To describe how living things can be classified into broad groups. ● To understand how I can use classification keys to help group, identify and name a variety of living things. ● To describe how living things can be classified into broad groups. ● To understand that microorganisms are also living things. ● To describe how living things can be classified into broad groups. ● To know that scientists have developed different ways to classify living things. **Working Scientifically Objectives**	classify, vertebrate, invertebrate, exoskeleton, vascular, non-vascular and taxonomy.	**Assessment of Core Knowledge** ● To describe how living things including microorganisms can be classified. ● To use the names and identify characteristics of the main groups used to classify animals, plants and microorganisms. ● To use a classification key and create their own key using yes/no questions. ● To explain how yeast is a microorganism. ● To explain the importance of Carl Linnaeus' standard classification system.

	● To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. ● To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. ● To identify scientific evidence that has been used to support or refute ideas or arguments.		
Evolution	**KS2 National Curriculum Objectives** ● Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. ● Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. ● Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. **Scientific Knowledge and Understanding** ● To identify how plants are adapted to their environment. ● To identify how animals are adapted to their environment. ● To explain natural selection and how it may lead to evolution. ● To explain natural selection and how it may lead to evolution. ● To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. ● 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. **Working Scientifically Objectives** ● To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. ● To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	adaptation, environment, evolution, gene, natural selection, inheritance, organism and species	**Assessment of Core Knowledge** ● To explore how animals and plants are adapted to the environment in which they live. ● To describe how adaptations occur over time and may lead to a species evolving. ● To describe how certain adaptations occur in response to environmental conditions. ● To explain what natural selection is and how this links to inheritance and how some characteristics are inherited from parents and some are not.