SCIENCE PROGRESSION OF KEY SKILLS RECEPTION

	RECEPTION
	As Scientists, we are learning to:
SCIENTIFIC ENQUIRY	- ask simple questions - observe closely, using simple equipment - perform simple tests - identify and classify
ANIMALS INCLUDING HUMANS	- name body parts and the skeleton - observe how we change as we grow - keep healthy – through exercise and the food we eat - explore the natural world around them, making observations and drawing pictures of animals - sort and classify animals, minibeasts etc into simple groups using Venn diagrams - sort, classify and label domestic and wild animals into groups - ask simple questions and explore answers e.g. how will I change as I grow? How many legs do insects have? Why are some animals kept in a zoo?
PLANTS	- make observations of plants and name parts of the plant (leaf, flower, stalk, root) and what is needed for a plant to grow (sun, water, soil) - develop an understanding of growth, decay and changes over time. - notice differences between features of living things - explore the natural world around them, making observations and drawing pictures of plants - identify and sort plants into different groups e.g. what we can eat / not eat - observe and record changes in the trees around school during the different seasons - ask questions and observe and record the effects of different conditions upon a plant (dark, warm, cold) - observe closely, using simple equipment and record observations in a simple table
EVERYDAY MATERIALS **CHANGING STATES OF MATTER**	- use descriptive terms such as smooth, rough, floating, sinking, solid, liquid. - sort a variety of objects into groups using size, colour, texture and function - observe and record findings from observations from changing state of matter (melting, freezing, heating, mixing) - ask questions and explore answers e.g. what will happen if I add more water to the sand? Can melted chocolate become solid again? - observe closely, using simple equipment and record findings using drawings and simple tables
OTHER TOPIC AREAS **LIVING THINGS AND THEIR HABITATS** **SEASONS OF THE YEAR**	- make observations about mini-beasts and answer questions, looking closely at similarities differences and how they change - observe and compare minibeasts and record findings in a simple table - understand that mini-beasts live in different habitats - know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. - understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

	- observe and record changes in the outdoor school environment over the seasons using simple equipment, photographs, drawings, labels, tables - ask questions relating to the weather
AREAS OF STUDY	Naming body parts and the skeleton How we change as we grow Keeping healthy – exercise and food Investigate everyday materials Investigating the changing seasons Investigate and record changing states of matter Naming different parts of a plant Looking at conditions for plant growth Looking at where different plants grow Naming different insects Looking at and comparing habitats Comparing how mini beasts travel Comparing wild and domestic animals

SCIENCE PROGRESSION OF KEY SKILLS KEY STAGE ONE

	YEAR ONE	YEAR TWO
	As Scientists, we are learning to:	**As Scientists, we are learning to:**
SCIENTIFIC ENQUIRY	- ask simple questions and recognising that they can be answered in different ways - observe closely, using simple equipment - perform simple tests - identify and classifying - use our observations and ideas to suggest answers to questions - gather and record data to help in answering questions	- ask simple questions and recognising that they can be answered in different ways - observe closely, using simple equipment - perform simple tests - identify and classifying - use our observations and ideas to suggest answers to questions - gather and record data to help in answering questions
ANIMALS INCLUDING HUMANS	- 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
PLANTS	- 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
EVERYDAY MATERIALS	- 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
OTHER TOPIC AREAS	**SEASONAL CHANGES** - observe changes across the four seasons - observe and describe weather associated with the seasons and how day length varies	**LIVING THINGS AND THEIR HABITATS** - 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.
AREAS OF STUDY	Common animals – identify and name common animals and carnivores, herbivores and omnivores Explore the human body and senses Identify, name and describe common wild and garden plants Exploring materials and physical properties of everyday materials The Weather – identify seasonal and daily weather patterns	Understanding basic needs of animals for survival Investigating habitats and food chains and sources of food Exploring materials and their suitability for particular uses Investigating plants – seeds, bulbs and conditions for growth

SCIENCE PROGRESSION OF KEY SKILLS LOWER KEY STAGE TWO

	YEAR THREE	YEAR FOUR
	As Scientists, we are learning to:	**As Scientists, we are learning to:**
SCIENTIFIC ENQUIRY	- ask relevant questions and use different types of scientific enquiries to answer them - set up simple practical enquiries, comparative and fair tests - make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - gather, record, classify and present data in a variety of ways to help in answering questions - record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions - identify differences, similarities or changes related to simple scientific ideas and processes - use straightforward scientific evidence to answer questions or to support their findings	- ask relevant questions and use different types of scientific enquiries to answer them - set up simple practical enquiries, comparative and fair tests - make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - gather, record, classify and present data in a variety of ways to help in answering questions - record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions - identify differences, similarities or changes related to simple scientific ideas and processes - use straightforward scientific evidence to answer questions or to support their findings
ANIMALS INCLUDING HUMANS	- 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
LIVING THINGS:	**PLANTS** - 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	**LIVING THINGS AND THEIR HABITATS** - 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

MATERIALS	**ROCKS** - 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	**STATES OF 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
LIGHT AND SOUND	**LIGHT** - 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	**SOUND** - 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
	FORCES AND MAGNETS - 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	**ELECTRICITY** - 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
AREAS OF STUDY	Understanding animals – nutrition, skeletons and muscles Investigating forces and magnets, lights and shadows. Exploring different rocks – appearance and physical properties and how fossils are formed Investigating plants – functions of different parts, life cycles of flowering plants, requirements for growth for different plants	Understanding animals – food chains (producers, predators and prey), teeth and the digestive system Investigating sounds, vibrations and pitch Exploring states of matter – solids, liquids and gases Investigating electricity – circuits, conductors and insulators

SCIENCE PROGRESSION OF KEY SKILLS UPPER KEY STAGE TWO

	YEAR FIVE	YEAR SIX
	As Scientists, we are learning to:	**As Scientists, we are learning to:**
SCIENTIFIC ENQUIRY	- plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary - take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - use test results to make predictions to set up further comparative and fair tests - 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 - identify scientific evidence that has been used to support or refute ideas or arguments.	- plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary - take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - use test results to make predictions to set up further comparative and fair tests - 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 - identify scientific evidence that has been used to support or refute ideas or arguments.
LIVING THINGS AND THEIR HABITATS **ANIMALS, INCLUDING HUMANS**	- 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 the changes as humans develop to old age	- 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 - 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
	PROPERTIES AND CHANGES OF MATERIALS - 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	**EVOLUTION AND INHERITANCE** - 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

	- 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	- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
	EARTH AND SPACE - 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	**LIGHT** - 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
	FORCES - 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** - 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
AREAS OF STUDY	Investigating life cycles and reproduction Investigating Earth, Sun and Space – day and night, the Solar System Exploring states of matter – solids, liquids and gases Understanding change of state – reversible and irreversible Investigating forces – gravity, air resistance, water resistance and friction	Investigating life cycles and reproduction Investigating Earth, Sun and Space – day and night, the Solar System Exploring states of matter – solids, liquids and gases Understanding change of state – reversible and irreversible Investigating forces – gravity, air resistance, water resistance and friction