Science

Summary of Knowledge/Enquiry EYFS

Understanding the World										
Animals, excluding humans	**Humans**	**Living Things and their habitats**	**Plants**	**Seasonal Changes**	**Materials, including changing materials**	**Electricity**	**Light**	**Forces**	**Sound**	**Earth and Space**
- Name and describe animals that live in different habitats. - Describe different habitats.	-Describe people who are familiar to them. -Learn how to take care of themselves.	-Explore the plants/animals in the surrounding natural environment. -Explore plants/animals in a contrasting natural environment.	-Plant a seed and observe it grow.	-Play and explore outside in all seasons and in different weather. -Observe living things throughout the year.	-Explore a range of materials, including natural materials. -Make objects from different materials. -Observe, measure and record how materials change when heated and cooled. -Compare how materials change over time and in different conditions.		-Explore shadows. -Explore rainbows.	-Explore how things work. -Explore how the wind can move objects. -Explore how objects move in water.	-Listen to sounds outside ad identify the source. -Make sounds.	-Learn about the Earth, Sun, Moon, planets and stars. -Learn about space travel.

Progression in Knowledge Y1

Plants	Animals, including humans	Properties of Materials	Seasonal 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	▪ identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals including pets) ▪ identify and name a variety of common animals that are carnivores, herbivores and omnivores	▪ distinguish between an object and the material from which it is made ▪ compare and group together a variety of everyday materials on the basis of their simple physical properties ▪ describe the simple physical properties of a variety of everyday materials ▪ identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	▪ observe changes across the four seasons ▪ observe and describe weather associated with the seasons and how day length varies

Progression in Knowledge Y2

Living things in their habitats	Plants	Animals, including humans	Uses of everyday materials
▪ explore and compare the differences between things that are living, dead, and things that have never been alive ▪ identify and name a variety of plants and animals in their habitats, including micro-habitats ▪ 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 ▪ 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	▪ find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. ▪ observe and describe how seeds and bulbs grow into mature plants	▪ 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, air) ▪ describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	▪ 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

Progression in Knowledge Y3

Plants	Animals, including humans	Rocks	Forces and Magnets	Light
▪ 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 role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	▪ 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	▪ compare and group together different kinds of rocks on the basis of their simple physical properties ▪ recognise that soils are made from rocks and organic matter ▪ describe in simple terms how fossils are formed when things that have lived are trapped within rock	▪ compare how things move on different surfaces ▪ notice that some forces need contact between two objects but magnetic forces 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 two poles ▪ predict whether two magnets will attract or repel each other, depending on which poles are facing	▪ 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 shadows are formed when a light source is blocked by a solid object ▪ find patterns in the way that the size of shadows change ▪ recognise that light from the Sun can be dangerous and that there are ways to protect our eyes

Progression in Knowledge Y4

Animals, including humans	Living things and their habitats	States of matter	Electricity	Sound
▪ 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	▪ 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 constantly changing and that this can sometimes pose dangers to specific habitats	▪ 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	▪ identify common appliances that run on electricity ▪ construct a simple series electrical circuit identifying and naming the basic parts of a simple electrical circuit, 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	▪ identify how sounds are made, associating some of them with something vibrating ▪ recognise that vibrations from sound travel through a medium to the ear ▪ recognise that sounds get fainter as the distance from the sound source increases ▪ 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.

Progression in Knowledge Year 5

Animals, including humans	Living things and their habitats	Properties and changes of materials	Earth and space	Forces
▪ describe the changes as humans develop to old age	▪ describe the difference 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	▪ compare and group together everyday materials based on evidence from comparative and fair tests, 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, include changes associated with burning and the action of acid on bicarbonate of soda	▪ 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	▪ explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object ▪ identify the effect 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

Progression in Knowledge Y6

Animals, including humans	Evolution and Inheritance	Living things and their habitats	Light	Electricity
▪ identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood (including the pulse and clotting). ▪ 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	▪ 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	▪ 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	▪ 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