Science – Yearly Whole School Overview

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	**The Natural World -** ● Seasons – Autumn – differences and changes over time – weather, animals and plants	**The Natural World** ● Exploring light and dark. ● How can we see in the dark? Nocturnal animals – making sense of habitats. Which animals are nocturnal?	**The Natural World** ● Draw information from a simple map, where we might find different animals ● Care and concern for living things. ● Care and concern for our planet	**The Natural World** ● What is growing in our garden? What would be the same and different around the world? ● Introduce the children to recycling and how it can take care of our world. Look at what rubbish can do to our environment and animals. Create opportunities to discuss how we care for the natural world around us	**The Natural World** ● Planting Sunflowers, beans and other flowers ● Looking at different habitats ● How to care for animals • Understand the effects of changing seasons on the world around them	**The Natural World -** ● Explore the natural world around them, making observations and drawing pictures of animals and plants. ● Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. ● Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter
Year 1		**Animals** ● Know and can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals e.g. cat, robin, adder, frog, salmon. ● Know and can identify and name a variety of common animals that are carnivores, herbivores and omnivores.	**Seasonal Changes** ● Know when each of the four seasons occurs ● Know what the features of autumn are and what happens to trees in this season ● Know that days are longer in summer (sunshine hours) than in winter ● Observe changes across the four seasons	**Materials** ● Distinguish between an object and the material from which it is made. EG This chair is made from metal and plastic ● Identify and name a variety of materials (wood, plastic, glass, metal, water, and rock) and describe their physical properties (vocabulary)	**Plants and habitats** ● Can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees ● Can identify and describe the basic structure of a variety of common flowering plants, including trees. **Seasonal Changes**	

		● Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets e.g. some have wings, feathers or vertebrates/ invertebrates		● Compare and sort everyday materials according to their physical properties ● why and how the properties of materials make them particularly useful for specific purposes (for example, stone is a hard, heavy and durable material so is useful for construction of buildings). ● Know how the properties of a material can make it useful for a range of different purposes (for example, plastic is waterproof so it can be used to coat fabric for clothing but can also be used for outdoor play equipment) ● know that different materials can share the same properties (for example glass and plastic can both be transparent).	● Know about and can describe weather in different seasons over a year. ● Know and can describe the features of different seasons and how they change through the year	
Year 2		**Living Things and their Habitats** ● 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	**<u>Animals</u> (not humans)** ● 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)	**Plants** ● 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	**Materials** ● 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	**Animals <u>including humans</u>** ● describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene

		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				
Year 3	**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	**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	**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	**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	**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	**Plants** ● explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

Year 4	**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)	**States of Matter – The Water Cycle** ● identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	**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	**Animals including humans Digestion and teeth** ● 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	**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	**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
Year 5	**Lever pulleys and Gears** ● recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	**Properties 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	**Earth and Space -phase of the moon, heliocentric, geocentric, shadows investigation, solar system etc** ● describe the movement of the Earth and other planets relative to the sun in the solar system	**living things and their habitats** **Plants and habitats - life cycles and the process of reproduction in some plants and animals** ● describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	**Forces - air and water resistance, friction, gravity** ● 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	**Animals including humans: describe the changes as humans develop to old age** ● describe the changes as humans develop to old age

		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	● 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	● describe the life process of reproduction in some plants and animals	act between moving surfaces	
Year 6	**Evolution and adaptation** ● recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	**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,	**Light** ● recognise that light appears to travel in straight lines ● use the idea that light travels in straight lines to explain that objects are		**Animals including humans Circulatory System** ● identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	**Living things and their habitats** **Classification** ● describe how living things are classified into broad groups according to common observable

	● 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	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	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		● 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	characteristics and based on similarities and differences, including micro-organisms, plants and animals ● give reasons for classifying plants and animals based on specific characteristics