Science

Year Group	Autumn	Spring	Summer
KS1 – Year A	Living things and their habitats **Overarching key question** What features do animals have that allow them to thrive in their environment?	Everyday Materials Y1 PZAZ unit **Overarching key question** What are the things I use made from?	Animals including humans Y1 PZAZ unit **Overarching key question** Do animals all have the same parts?
Key Knowledge	**I know how to identify whether things are alive, dead or have never lived. I know how to name different plants and animals and describe how they are suited to different habitats.**	**I know how to distinguish objects from materials, describe their properties, identify and group everyday materials.**	**I know how to describe and compare observable features of animals from a range of groups.** **I know how to group animals according to what they eat.** **I know how to name and locate parts of the human body, including those related to the senses.** **I know how to describe and compare observable features of animals from a range of groups.**
Working scientifically	**Observing over time** **Pattern seeking** **Identifying, classifying & Grouping** **Comparative & Fair Testing** **Researching using secondary sources**	**Pattern seeking** **Identifying, classifying & Grouping** **Comparative & Fair Testing**	**Pattern seeking** **Identifying, classifying & Grouping** **Comparative & Fair Testing**
KS1 – Year B	Animals including humans Y2 PZAZ unit **Overarching key question** How do humans stay healthy?	Uses of everyday materials Y2 PZAZ unit **Overarching key question** Why do we make things out of certain materials?	Plants **Overarching key question** What ways can I identify a plant?

Key Knowledge	**I know how to name and locate parts of the human body, including those related to the senses and describe them.** **I know how to describe the basic needs of animals for survival and the main changes as offspring from young animals, including humans, grow into adults.** **I know how to group animals according to what they eat, describe how animals get their food from other animals and/or plants, and use simple food chains to describe these relationships.**	**I know how to distinguish objects from materials, describe their properties, identify and group everyday materials and compare their suitability for different uses.**	**I know how to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.** **I know how to identify and describe the basic structure of a variety of common flowering plants, including trees.** **I know how to describe the basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plants.**
Working Scientifically	**Observing over time** **Pattern seeking** **Identifying, classifying & Grouping** **Comparative & Fair Testing** **Researching using secondary sources**	**Pattern seeking** **Identifying, classifying & Grouping** **Comparative & Fair Testing**	**Observing over time** **Pattern seeking** **Identifying, classifying & Grouping** **Comparative & Fair Testing** **Researching using secondary sources**
	Seasonal change **Overarching key question** What is it like in each season? →	**Seasonal change**	**Seasonal change**
Key Knowledge	**I know how to observe and describe changes across the four seasons.**	**I know how to observe and describe changes across the four seasons.**	**I know how to observe and describe changes across the four seasons.**
Working Scientifically	**Observing over time** **Pattern seeking** **Comparative & Fair Testing** → **Researching using secondary sources**		

Lower KS2 – Year A	Forces and Magnets **Overarching key question** How do moving objects slow down? What materials are attracted to magnets?	Living things and their habitats – Human impact Classification & Extinction **Overarching key question** What happens to living things when their habitats change? Sound **Overarching key question** How are sounds made?	States of matter **Overarching key question** What happens when we heat solids? What happens to puddles after it rains? Rocks **Overarching key question** Why are there different rocks?
Key Knowledge	**Forces** **I know how to compare how things move on different surfaces.** **I know how to notice that some forces need contact between two objects, but magnetic forces can act at a distance.** **I know how to 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.** **I know how to describe magnets as having two poles.** **I know how to predict whether two magnets will attract or repel each other, depending on which poles are facing.**	**Classification** **I know how to recognise that living things can be grouped in a variety of ways.** **I know how to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.** **Extinction** **I recognise that environments can change and that this can sometimes pose dangers to living things.** **Sound** **I know how to identify how sounds are made, associating some of them with something vibrating.** **I know how to recognise that vibrations from sounds travel through a medium to the ear.** **I know how to find patterns**	**States of matter** **I know how to compare and group materials together, according to whether they are solids, liquids or gases.** **I know how to 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).** **I know how to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.** **Rocks** **I know how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.** **I know how to describe in simple terms how fossils are formed when things that have lived are trapped within rock.** **I know how to recognise that soils are made from rocks and organic matter.**

		between the pitch of a sound and features of the object that produced it. **I know how to find patterns between the volume of a sound and the strength of the vibrations that produced it.** **I know how to recognise that sounds get fainter as the distance from the sound source increases.**	
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Lower KS2 – Year B	Electricity **Overarching key question** What materials conduct electricity? Light **Overarching key question** What is a shadow?	Animals including humans **Overarching key question** How can animals move? What is in food? What happens to food when we eat it?	Plants **Overarching key question** What do different parts of a plant do?
Key Knowledge	**Electricity** **I know how to identify common appliances that run on electricity.** **I know how to 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.**	**Animals** **I know how to 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.** **I know how to identify that humans and some other animals have skeletons and muscles for support, protection and movement.**	**Plants** **I know how to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.** **I know how to 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.** **I know how to investigate the way in which water is transported within plants.** **I know how to explore the part that**

	I know how to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. **I know how to recognise some common conductors and insulators, and associate metals with being good conductors.** **Light** **I know how to recognise that he/she needs light in order to see things and that dark is the absence of light.** **I know how to notice that light is reflected from surfaces.** **I know how to recognise that light from the sun can be dangerous and that there are ways to protect eyes.** **I know how to find patterns in the way the size of shadows change.** **I know that it is not safe to look directly at the sun, even when wearing dark glasses.**	**I know how to describe the simple functions of the basic parts of the digestive system in humans.** **I know how to identify the different types of teeth in humans and their simple functions.** **I know how to construct and interpret a variety of food chains, identifying producers, predators and prey.**	**flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.**
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Upper KS2 – Year A	Light **Overarching key question** How does light travel?	Living Things & their Habitats **Overarching key question** How are living things grouped together? How do living things make copies of	Properties & change of materials **Overarching key question** What is a mixture and how do I separate it into its parts?

		themselves? Animals, including Humans **Overarching key question** What affects the health of humans? How do humans change as they get older?	
Key Knowledge	**I know how to recognise that light appears to travel in straight lines.** **I know how 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.** **I know how to 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.** **I know how to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.**	**Living Things & their Habitats** **I know how to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.** **I know how to describe the life process of reproduction in some plants and animals.** **I know how to 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.** **I know how to give reasons for classifying plants and animals based on specific characteristics.** **Animals Including Humans** **I know how to describe the changes as humans develop to old age.** **I know how to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.** **I know how to recognise the impact of diet, exercise, drugs and lifestyle**	**I know how to 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.** **I know how to recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.** **I know how to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.** **I know how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.** **I know how to demonstrate that dissolving, mixing and changes of state are reversible changes.** **I know how to 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.**

		on the way their bodies function. **I know how to describe the ways in which nutrients and water are transported within animals, including human.**	
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Upper KS2 – Year B	Electricity **Overarching key question** How do humans use electricity? Earth & Space **Overarching key question** How does the moon appear to change shape?	Forces **Overarching key question** How do machines work?	Evolution & Inheritance **Overarching key question** What happens to species over a long time?
Key Knowledge	**Electricity** **I know how to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.** **I know how to 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.** **I know how to use recognised symbols when representing a simple circuit in a diagram.** **Earth & Space** **I know how to describe the movement of the Earth, and other planets, relative to the Sun in the**	**I know how to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.** **I know how to identify the effects of air resistance, water resistance and friction, which act between moving surfaces.** **I know how to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.**	**I know how 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.** **I know how to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.** **I know how to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution**

	solar system. I know how to describe the movement of the Moon relative to the Earth. I know how to describe the Sun, Earth and Moon as approximately spherical bodies. I know how to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. I know that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006). I know that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).		
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Skills Progression

Five types of experimental skills

1. Observe over time
2. Pattern seeking
3. Identifying, classifying and grouping
4. Comparative and Fair test
5. Research using secondary sources

"You have filled by heart with greater joy" Psalm 4:7