St Peter's CE (VA) Primary School

Key Knowledge Progression Map – Science

Topic	Year 1/2	Year 3/4	Year 5/6
Plants	• The difference between deciduous and evergreen trees • That plants come from seeds • Know what a plant needs to grow. • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.	• Identify and describe the functions of different parts of flowering plants including the roots, stem/trunk, leaves and flowers. • Describe how water is transported in plants • Recognise that environments can change and that this can sometimes pose dangers to living things.	• Functions of a flower, including pollination, seed formation and dispersal. • Describe what a plant needs to grow and explain why. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Animals	• Explain what a habitat is and why living things live there. • Categorise living things: fish, amphibians, reptiles, birds and mammals. • Explain what a food chain is. • Explain the difference between something not alive, alive and dead, • Understand the difference between carnivores, herbivores and omnivores.	• Understand what nutrition is and how we obtain it. • Know that a skeleton provides support, protection and movement. • Explain what a food chain is, including the terms: producers, predators and prey. • Explain how changes in climate affects living things.	• Explain what evolution is, as an adaptation to surrounding environment over time. • Explain what a life cycle is with an example • Describe the ways in which nutrients and water are transported within animals.
Humans	• Identify parts of the body • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. • Understand how offspring develop into adults. • Describe what we need to survive.	• Describe the simple functions of the basic parts of the digestive system. • Explain why we need nutrition and where we get it from. • Identify and name the different teeth in humans and their simple function. • Understand that skeletons and muscles are for support, protection and movement.	• Recognise that living things have changed over time. • Explain why living things produce offspring of the same kind and how they vary: DNA half from each parent and genes. • Describe the changes as humans develop to old age. • Identify and name the main parts of the human circulatory system and their function in transporting nutrients, oxygen and water.
Materials	• Identify and name a variety of everyday materials and their suitability. • Describe the simple physical properties of a variety of everyday materials.	• Understand the difference between solids, liquids and 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). • Explain the stages of the water cycle.	• Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • Explain that dissolving, mixing and changes of state are reversible changes and that some changes are irreversible. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.

Key Knowledge Progression Map – Science KS2

Topic	LKS2	UKS2
Electricity	• Describe how a simple electrical circuit functions, naming its basic parts, including cells, wires, bulbs, switches and buzzers. • Explain why a switch opens and closes a circuit. • Explain the difference between conductors and insulators. • Name materials which are good insulators and conductors.	• Explain why a higher voltage cell makes a bulb light up more or a buzzer sound louder. • Name a variety of different materials and their properties, including response to magnets.
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.	• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Recognise that they need light in order to see things and that dark is the absence of light. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.
Forces	• Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Explain which materials are attracted to magnets. • Describe magnets as having two poles. • Understand two magnets will attract or repel each other, depending on which poles are facing. • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	• Explain how materials can be grouped, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • Describe what air resistance, water resistance and friction are. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
Light/Sound	• Describe that light is reflected from surfaces and we see because it reflects into our eyes. • Recognise that light appears to travel in straight lines. • Explain how we hear by identifying that sounds are made through vibrating. • Recognise that sounds get fainter as the distance from the sound source increases.	• Explain how shadows are formed and why the patterns and size of shadows change. • 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 why shadows have the same shape as the objects that cast them. • Explain how louder sounds have stronger vibrations.