

Science Progression Grid Class 5- 6

Cycle 1

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Living things and their habitats (6)</p> <p>Focusing on classifying plants</p>	<p>Light (3)</p> <p>Focusing on light and shadows.</p>	<p>Evolution and inheritance (6)</p> <p>Focusing on evolution.</p>	<p>Forces (5)</p> <p>Focusing on gravity</p>	<p>Electricity (6)</p> <p>Focusing on changes in circuits</p>	<p>Animals including humans (6)</p> <p>Focusing on the circulatory system.</p>
Minimum vocabulary shown in bold			Minimum learning is highlighted in yellow		
<p>FOCUS</p> <p>To know how to classifying animals based on their similarities and differences</p>	<p>FOCUS</p> <p>To know that humans need light in order to see things and that dark is the absence of light.</p> <p>Absence - When something is away and not there.</p>	<p>FOCUS</p> <p>To know and explain the scientific concept of inheritance.</p> <p>Inheritance – This is when characteristics are passed on to offspring from their parents.</p>	<p>FOCUS</p> <p>To know the different forces that act upon on objects.</p>	<p>FOCUS</p> <p>To know the symbols when representing a simple circuit in a diagram.</p> <p>Symbol - A visual picture that stands for something else.</p> <p>Circuit - A path that an electrical current can flow around</p>	<p>FOCUS</p> <p>To know and identify the main parts of the human circulatory system</p> <p>Circulatory system - A system which includes the heart, veins, arteries and blood transporting substances around the body.</p>
<p>To know the characteristics of different types of animals</p> <p>Characteristics - Special qualities or appearances that make an individual or group of things different to others.</p>	<p>To know that light is reflected from surfaces.</p> <p>Reflected – to bounce off something.</p>	<p>To know the scientific understanding of adaptation.</p> <p>Adaptation – This is a trait (or characteristic) changing to increase a living thing’s chance of surviving and reproducing.</p>	<p>To know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Gravity - A pulling force exerted by the Earth (or anything else which has mass).</p>	<p>To know the importance of the major discoveries in electricity.</p>	<p>To know and label the parts of the circulatory system on a diagram of the human body.</p>

<p>To know the reasons for classifying plants and animals based on specific characteristics.</p> <p>Classifying - To sort things into different groups.</p>	<p>To know that light from the sun can be dangerous and that there are ways to protect their eyes.</p>	<p>To know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago;</p> <p>Fossils – The remains or imprint of a prehistoric plant or animal, embedded in rock and preserved.</p> <p>Inhabited - A person, animal, or group living or occupying a place or an environment.</p>	<p>RECAP</p> <p>To know the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> <p>Friction - A force that acts between two surfaces or objects that are moving, or trying to move, across each other.</p>	<p>To know and explain the effects of differing volts in a circuit</p> <p>Voltage - The force that makes the electric current move through the wires. The greater the voltage, the more current will flow.</p>	<p>To know and explain the functions of the heart, blood vessels, blood, arteries, veins, oxygen, lungs.</p> <p>Heart - An organ which constantly pumps blood around the circulatory system.</p> <p>Blood vessels - The tube-like structures that carry blood through the tissues and organs. Veins, arteries and capillaries are the three types of blood vessels.</p>
<p>RECAP</p> <p>To know 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.</p>	<p>To know that shadows are formed when the light from a light source is blocked by an opaque object;</p> <p>Shadow – An area of darkness where light has been blocked.</p> <p>Opaque – Describes objects that do not let any light pass through them.</p>	<p>RECAP</p> <p>To know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents (inheritance, genes, DNA)</p>	<p>To know that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</p> <p>Mechanisms - Mechanisms are simple machines with moving parts that change input forces and movement into a set of useful output forces. Examples of mechanisms are pulleys, gears and levers.</p>	<p>To know how to conduct an investigation, record my data and report my findings.</p>	<p>RECAP</p> <p>To know the impact of diet, exercise, drugs and lifestyle on the way the body functions.</p> <p>Drugs - A substance containing natural or man-made chemicals that has an effect on your body when it enters your system.</p>
<p>To know how to describe and investigate harmful and helpful micro-organisms</p>	<p>RECAP</p> <p>To know that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</p>	<p>To know that animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>		<p>RECAP</p> <p>To be able to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p>	<p>To know that regular exercise is important for a healthy body and how it affects the heart.</p>
	<p>To know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</p>			<p>To know how to compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of</p>	<p>To know the ways in which nutrients and water are transported within animals, including humans.</p>

				<p>buzzers and the on/off position of switches.</p> <p>Component - a part that combines with other parts to form something bigger.</p>	
<p>One lesson of each half term is about the Scientist named below, children to investigate the scientist and why they are famous. Children to know about the different types of scientists and what they study- Botanist, Palaeontologist, Astronomer, Seismologist, Hydrologist, Zoologist, Audiologist</p>					
<p>Scientist Focus: Carl Linnaeus- published a system of classifying and grouping all living things</p>	<p>Scientist Focus: Christiaan Huygens</p>	<p>Scientist Focus: Charles Darwin</p>	<p>Scientist Focus: Sir Isaac Newton- gravity</p>	<p>Scientist Focus: Stephen Grey – electrical conduction</p>	<p>Scientist Focus: William Harvey- circulatory system</p>
<p>Disciplinary Knowledge</p>					
<p>Pupils might work scientifically by using classification systems and keys to identify some animals and plants in the immediate environment. They could also research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.</p>	<p>Pupils might work scientifically by looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.</p>	<p>Pupils might work scientifically by: observing and raising questions about local animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example cactuses, penguins and camels.</p>	<p>Pupils might work scientifically by: exploring falling paper cones or cupcake cases, and designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. They might explore resistance in water by making and testing boats of different shapes. They might design and make products that use levers, pulleys, gears and/or springs and explore their effects.</p>	<p>Pupils might work scientifically by: systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.</p>	<p>Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.</p>
<p>Some key words will appear more than once which is deliberate across the progression grids as the children are consolidating their learning in different year groups. They will constantly be revisiting learning and embedding their understanding in the subject using key words.</p>					