

Science Progression Grid Class 5- 6

Cycle 2

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Living things and their habitats (6)</p> <p>Focusing on micro-organisms</p>	<p>Light (3)</p> <p>Focusing on how light travels.</p>	<p>Evolution and inheritance (6)</p> <p>Focusing on adaptation.</p>	<p>Forces (5)</p> <p>Focusing on the different types of forces acting on things.</p>	<p>Electricity (6)</p> <p>Focusing on altering brightness and volume.</p>	<p>Animals including humans (6)</p> <p>Focusing on how your body reacts to diet drugs and lifestyle.</p>
Minimum vocabulary shown in bold			Minimum learning is highlighted in yellow		
<p>RECAP</p> <p>To know how to give reasons for classifying animals based on their similarities and differences</p>	<p>RECAP</p> <p>To know that humans need light in order to see things and that dark is the absence of light. Furthermore, the pupil is the black part of the eye.</p> <p>Pupil – the black part of the eye that lets light in.</p>	<p>RECAP</p> <p>To know the scientific concept of inheritance.</p>	<p>RECAP</p> <p>To know and identify forces acting on objects.</p>	<p>RECAP</p> <p>To know which symbols to use when representing a simple circuit in a diagram.</p> <p>Symbols - A visual picture that stands for something else</p>	<p>RECAP</p> <p>To know and name the main parts of the human circulatory system.</p>
<p>To know the characteristics of different types of animals</p>	<p>To know that light is reflected from surfaces and light appears to travel in straight lines.</p>	<p>To know and understand what adaptation means.</p> <p>Adaptation - To change, or to change something, to suit different conditions or uses.</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>Protect – to look after something.</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>FOCUS</p> <p>To know and identify the effects of air resistance, water resistance and friction, that act between moving surfaces;</p>	<p>To know the effects of differing volts in a circuit</p>	<p>To know and explain the functions of the heart, blood vessels, blood, arteries, veins, oxygen and lungs.</p> <p>Arteries - Arteries carry oxygenated blood away from the heart.</p>

		Inhabited - A person, animal, or group living or occupying a place or an environment.	Air resistance - A type of friction caused by air pushing against any moving object. Water resistance - A type of friction caused by water pushing against any moving object.		Veins - Veins carry deoxygenated blood towards the heart.
<p>FOCUS</p> <p>To know how to classify living things into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</p> <p>Characteristics - Special qualities or appearances that make an individual or group of things different to others.</p> <p>Micro-organisms - An organism that can only be seen using a microscope, e.g. bacteria, mould and yeast.</p>	<p>To know that shadows are formed when the light from a light source is blocked by an opaque object and to find patterns in the way that the size of shadows change.</p>	<p>FOCUS</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>Produce – means to create something.</p> <p>Identical – 2 or more things that look exactly the same.</p>	<p>To know that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p> <p>Gears - A mechanical part with teeth that interlock with another gear or belt to transfer motion and power while changing speed, or direction in a mechanical system.</p> <p>Pulleys - It guides a rope, belt, or cable and changes the direction of or the amount of force that is needed to lift an object.</p> <p>Levers - a simple mechanism that uses a bar to pivot around a fixed point called a fulcrum</p>	<p>To know how to conduct an investigation, record data and record findings.</p>	<p>FOCUS</p> <p>To know and recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function;</p> <p>Diet - eating a wide variety of foods in the right proportions, and consuming the right amount of food and drink to achieve and maintain a healthy body weight.</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>Micro-organisms - An organism that can only be seen using a microscope, e.g. bacteria, mould and yeast.</p>	<p>FOCUS</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 that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>	<p>To know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>Adapted - To change, or to change something, to suit different conditions or uses.</p> <p>Evolution – adaptation over a long period of time.</p>		<p>FOCUS</p> <p>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>Brightness - how much light appears to shine from something.</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 understand that regular exercise is important for a healthy body and how it affects the heart.</p>

	<p>Shadow - An area of darkness where light has been blocked.</p> <p>Straight – moving in one direction only.</p>				
				To know 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;	To know the ways in which nutrients and water are transported within animals, including humans. Nutrients - Substances that animals need to stay alive and healthy. Transported – taken from one place to another.

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

Focused scientist: Carl Linnaeus	Focused scientist: Thomas Young	Focused scientist: Alfred Russel Wallace	Focused scientist: Michael Faraday	Focused scientist: Lewis Howard Latimer	Focused scientist: William Harvey
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Disciplinary knowledge

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.	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.	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.	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.	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.	Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.
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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.