



This year in Science we will be learning:		This links to:	Key Vocabulary:	
1	<p><b>Organisms 1 (Biology)</b></p> <ul style="list-style-type: none"> <li>Multicellular organisms are composed of cells. There are many types of cells with different structures to help them carry out their specific functions.</li> <li>You will develop your observational skills using microscopes to view cells.</li> <li>Reproduction in animals involves a fusion of male and female gametes. The menstrual cycle prepares the female body for reproduction. The developing foetus relies on the mother to provide it with oxygen and nutrients.</li> </ul>	<p>You will build on your knowledge of reproduction from key stage 2. You have previously learnt about the seven life processes (MRS GREN) and what makes something living; in this unit you will see how all living things are made of cells, how similar cells are grouped together to form tissues, different tissues are grouped together to form organs and different organs form organ systems, which enable the body to carry out the seven life processes.</p>	<ul style="list-style-type: none"> <li>Fertilisation</li> <li>Respiration</li> <li>Menstrual cycle</li> <li>Microscope</li> <li>Gamete</li> <li>Ovulation</li> </ul>	<ul style="list-style-type: none"> <li>Nucleus</li> <li>Cell membrane</li> <li>Cytoplasm</li> <li>Chloroplast</li> <li>Vacuole</li> <li>Cell wall</li> <li>Mitochondria</li> </ul>
2	<p><b>Energy and electricity (Physics)</b></p> <ul style="list-style-type: none"> <li>Use an energy model where energy is transferred from one store to another, considering the conserved and dissipated energy.</li> <li>Current is a movement of electrons in a circuit. It divides between loops in a parallel circuit, lights up bulbs and makes components work.</li> <li>You will develop your working scientifically skills by building electrical circuits and exploring energy transfers in different contexts.</li> </ul>	<p>You will build on your knowledge of electricity and simple circuits from key stage 2, learning about different types of circuit and measurements associated with circuits (current, potential difference and resistance). You will increase your understanding of energy as a quantity that can be quantified and calculated and relate this to food, appliances, fuels and energy resources.</p>	<ul style="list-style-type: none"> <li>Current</li> <li>Charge</li> <li>Parallel</li> <li>Series</li> <li>Potential difference</li> <li>Resistance</li> </ul>	<ul style="list-style-type: none"> <li>Energy</li> <li>Power</li> <li>Renewable</li> <li>Non-renewable</li> <li>Efficiency</li> <li>Dissipated</li> </ul>
3	<p><b>Matter 1 (Chemistry)</b></p> <ul style="list-style-type: none"> <li>Properties of solids, liquids and gases can be described in terms of particle movement. Changes of state can be explained in terms of changes to the arrangement of these particles.</li> <li>The method chosen to separate a mixture depends on which physical properties of the substances are different. You will develop your working scientifically skills by investigating different separating techniques.</li> </ul>	<p>Building on your knowledge of the three states of matter at key stage 2, you will learn how the particle arrangement in these states explains the properties of the substances and how the states change. You will build on previous investigations into solubility, filtration, evaporation, distillation and chromatography using laboratory equipment.</p>	<ul style="list-style-type: none"> <li>Evaporation</li> <li>Condensation</li> <li>Particle</li> <li>Kinetic energy</li> <li>Diffusion</li> <li>Mixture</li> </ul>	<ul style="list-style-type: none"> <li>Melting point</li> <li>Boiling point</li> <li>Distillation</li> <li>Chromatography</li> <li>Solution</li> <li>Solubility</li> </ul>
4	<p><b>Organisms 2 (Biology)</b></p> <ul style="list-style-type: none"> <li>Organs of the digestive system are adapted to break large food molecules into small ones and absorb nutrients which can be used for life processes.</li> <li>In gas exchange oxygen and carbon dioxide move between the lungs and blood to supply cells with oxygen for respiration</li> <li>The uses of nutrients needed by the body for a balanced diet.</li> </ul>	<p>You will know the main parts of the digestive and circulatory system from key stage 2; in this unit, you will explore in more detail how these organs are adapted to carry out their functions in these systems and how they are helped by other molecules such as enzymes. This topic also builds on 'Organisms 1'.</p>	<ul style="list-style-type: none"> <li>Nutrient</li> <li>Gas exchange</li> <li>Carbohydrate</li> <li>Deficiency</li> <li>Lipid</li> </ul>	<ul style="list-style-type: none"> <li>Protein</li> <li>Enzyme</li> <li>Protease</li> <li>Carbohydrase</li> <li>Lipase</li> </ul>
5	<p><b>Forces (Physics)</b></p> <ul style="list-style-type: none"> <li>Unbalanced forces cause an object to speed up, slow down or change direction.</li> <li>Forces can change an object's form, causing it to be stretched or compressed.</li> <li>Pressure acts in a fluid in all directions and increases with depth due to the increased weight of the fluid. Objects sink or float depending on whether the weight of the object is bigger or smaller than the upthrust.</li> </ul>	<p>You will have learnt about how friction, drag and gravity affect the motion of objects and you will build on this to include some quantitative measurements to extend your ability to understand these phenomena. You will also build your skills by using graphical descriptions of motion in distance-time graphs.</p>	<ul style="list-style-type: none"> <li>Distance-time graph</li> <li>Resultant force</li> <li>Speed</li> <li>Relative motion</li> <li>Acceleration</li> <li>Deceleration</li> </ul>	<ul style="list-style-type: none"> <li>Force</li> <li>Newtons</li> <li>Interaction pairs</li> <li>Reaction force</li> <li>Gravitational force</li> <li>Non-contact</li> </ul>
6	<p><b>Matter 2 (Chemistry)</b></p> <ul style="list-style-type: none"> <li>All matter is made of atoms and each element is made up of a different type of atom.</li> <li>The difference between compounds, elements and mixtures.</li> <li>How the periodic table shows how elements behave and patterns in reactivity.</li> </ul>	<p>This unit builds on the knowledge gained in Matter 1, when you learnt about particle arrangements in different states of matter. Now you will learn that these particles are atoms and the differences between elements, compounds and mixtures.</p>	<ul style="list-style-type: none"> <li>Element</li> <li>Compound</li> <li>Mixture</li> <li>Atom</li> </ul>	<ul style="list-style-type: none"> <li>Periodic table</li> <li>Polymer</li> <li>Alkali metal</li> <li>Halogen</li> </ul>

Target Grade:

AP1:

AP2:

AP3: