

## YEAR 7 OVERVIEW 2020/21 - SCIENCE

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7	<b>Matter</b>	<b>Chemical Methods</b>	<b>Systems (1)</b>	<b>Systems (2)</b>	<b>Natural World</b>	<b>Electricity &amp; Magnetism</b>
	The Particle Model of Matter: everything is made of particles and exists in one of three states of matter: solid, liquid or gas. Matter can change between these states. The particles that everything is made of are actually called 'atoms'.	Chemical mixtures can be separated by: filtration, evaporation, distillation & chromatography. A solute will dissolve in a solvent to form a solution.	Respiration is essential for life and is how cells access energy. Glucose and Oxygen react to form Carbon Dioxide and Water. The Digestive System allows us to get the Glucose from our diet. The Respiratory System allows us to get the Oxygen from the air.	The male and female reproductive systems undergo many changes during puberty in response to hormones. In females, an egg is released from the ovary each month. During fertilisation, a sperm cell can join with this egg in the Fallopian Tube.	Plants take in light energy and make Glucose in the process of Photosynthesis. Leaves have adaptations that help this process to happen. Producers carry out photosynthesis and are consumed by animals in an ecosystem. Toxic substances can accumulate through food chains/webs in an ecosystem. Energy is also transferred between organisms in a food chain/web.	Electricity is produced by renewable and non-renewable sources. Components in an electrical circuit are represented by symbols. Circuits can be set up in Series or Parallel – the current & potential difference follow different rules in each. Magnets have poles which create magnetic fields. Magnetism is a non-contact force.
	<b>Atoms &amp; Elements</b>	<b>Bonding &amp; Molecules</b>	<b>Cells</b>	<b>Disease</b>	<b>Energy</b>	<b>Forces</b>
	Atoms have protons, neutrons and electrons. Atoms form elements, compounds and mixtures. Elements & compounds can react to form different elements & compounds. Mixtures can be separated using various chemical methods as they are not chemically bonded.	Molecules contain bonds. In a chemical reaction, bonds are broken, and new bonds are formed.  <b>Reactions &amp; Energy</b>  Reactants react to form products. These reactions can be shown in word equations. Reactions can happen in a lab using chemical compounds, mixtures and elements, or they can happen naturally inside cells, for example: respiration.	Every living thing is made of cells. Animal cells contain organelles, as do plant cells. Respiration takes place in the mitochondria. There are specialised animal & plant cells: <ul style="list-style-type: none"> <li>• Sperm &amp; Egg Cells</li> <li>• Red Blood Cells &amp; White Blood Cells</li> <li>• Palisade Cells</li> </ul>	Pathogens are microorganisms that cause disease. Pathogens can be passed on through direct touch, body fluids, coughing and sneezing and contaminated food/drink. The Immune System protects the body against disease. White Blood Cells are the specific part of the Immune System that fights against disease.	Photosynthesis takes in light energy; light energy is one form of energy – there are many different forms of energy stores and transfers. Energy can come from renewable & non-renewable sources.	Forces are categorised into contact and non-contact forces. Forces can be represented by arrows and free body diagrams. Gravity acts on all objects and pulls towards the centre of the Earth.  <b>Space</b>  Different planets have different strengths of gravitational pull. Different objects have different weights on different planets due to Gravity. Moon orbit planets and planets orbit the Sun. The Earth's tilt and orbit gives us our seasons and night/day. We are part of a galaxy called "The Milky Way".