



Year 8 – Science – Curriculum grid



Science	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8	<p>L1/L2 – Living things 10.1 – Variation (Genes) -State the causes of variation. -Characteristics are inherited or environmental. -Variation - continuous and discontinuous -Variation helps species to survive environmental changes.</p> <p>10.2 – Human reproduction (Genes) -Changes that take place during puberty. -Structures and functions of male and female reproductive systems. -Structure and function of gametes. -Process of fertilisation. -Male and female fertility issues. -Gestation -What happens during gestation and birth. -Substances passed from mother and the fetus. -The length and main stages of the menstrual cycle.</p>	<p>3.1 – Energy costs (Energy) -Unit of energy content of food. -Energy in food compared to energy needed for activities. -Energy resources used to generate electricity. -Advantages and disadvantages of energy resources. -Energy transferred to an electrical device. -Understanding electricity bills. -Energy usage and cost of running devices. Investigation: Testing a range of appliances using a consumption meter.</p> <p>L1/L2 – Everyday materials -Materials made from -Types of materials -Properties</p> <p>3.2 – Energy transfer (Energy) -Energy of an object. - Energy transfer between stores and complete. -Energy dissipation in a range of situations.</p> <p>L1/L2 – Forces and magnets 1.3 – Contacted forces (Forces) - Factors which affect the</p>	<p>8.3 – Breathing (Organisms) -Functions and adaptations of the gas exchange system. -Breathing rate and volume changes. -Process of inhaling and exhaling. -Breathing using the bell-jar model. -Exercise, smoking, and affects on the gas exchange system. Breathing -Medicinal and recreational drugs -Effects of drugs, smoking and alcohol on health or behaviour. Investigation: Creating the bell-jar model for breathing.</p> <p>8.4 – Digestion (Organisms) -Components of a healthy diet and functions in the body. -Nutritional content of different foods. -Effects of deficiencies or excesses of nutrients. -Test food for starch, lipids, sugar and protein. -How you get ad use energy. -Health issues caused by an unbalanced diet. -What happens during digestion. -Structure and function of the</p>	<p>4.1 – Sound (Waves) -Speed of sound, what it can and cannot travel through. -How sound is produced and travels. -Links between loudness and amplitude -Sound is reflecting or absorbed by different media. -Link between frequency and pitch -Name parts of the ear and how it works. -How hearing can be damaged. Investigation: Use a decibel meter to explore a range of sounds.</p> <p>4.2 – Light (Waves) -Light rays on different medium. -Speed of sound. -Eclipses and what is seen by observers in different places. -How light is reflected by a mirror. -Refraction of light -Name parts of the eye and how lenses correct vision -Difference between different colours in terms of frequency. Investigation: Creating a spectrum of light using a prism.</p>	<p>4.3 – Wave effects (Waves) -How sound transfers energy. -Link between amplitude and frequency of energy. -Electromagnetic spectrum. -Effects of radiation on living cells. -Radiation and energy Investigation: Use a thermal imaging camera.</p> <p>4.4 – Wave properties (Waves) -Transverse and longitudinal waves -Superpose of waves -Modelling waves to show wave behaviour. Investigation: Modelling waves using a slinky.</p>	<p>6.1 – Acids and Alkalis (Reactions) -Characteristics of chemical reactions. -Why chemical reactions are used and the physical changes they make. -Handling acids and alkalis safely and hazards. -Difference between concentrated and dilute solutions of acid. -Acid, alkalis and neutral solutions of the pH scale. -Factors affecting the pH of a solutions -Naming a range of strong and weak acids. -Products forms in a reaction of acid and alkalis. -Products formed in the reaction of an acid and base (salts). Investigation: Creating and testing a range of plant indicators in acid and alkali solutions.</p> <p>6.2 – Metals and non-metals (Reactions) -Name a range of magnetic elements. -Liquid metal and non metal at room temperature. -Chemical reaction of metals and non metals. -What is form when metals</p>

		<p>size of the drag forces and friction. -Force diagrams for contact forces. -Friction and drag reductions. -Forces deforming objects. -Solid forces provide a support force. -Use Hooke's law. -Meaning of a 'moment' (turning forces)</p> <p>Investigation: Testing Hooke's law, extension of a spring and the force.</p> <p>L1/L2 – States of matter -Solid, liquid or gas -Properties -Heated -Cooled</p> <p>1.4 – Pressure (Forces) -Fluids exert a pressure in all directions. (gases) -How atmospheric pressure changes with height. -Pressure in liquids changes with depth. -Float and sinking, area affecting upthrust. -Meaning of 'stresses' on solid objects. Investigation: Testing expansion of air in marshmallows.</p>	<p>digestive system. -Role of bacteria and enzymes in digestion.</p> <p>Investigation: Testing a range of different foods for nutrients.</p>			<p>and acids react. -What is formed when metals and oxygen react. The reactivity series and what it shows. -Oxidation, displacement and metal- acid reactions. Investigation: Testing a range of metals in hydrochloric acid. Observing potassium in water.</p>
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