

Year 8 SCIENCE Curriculum Map 2022-2023

Topic Overview	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
	Plants and their reproduction	Food and Nutrition	Combustion	Breathing and Respiration	Energy Transfers	Light	Earth and Space	Metals and their uses	The periodic table	Fluids	Unicellular Organisms	Rocks
<b>Focus</b>	Interpret scientific organism names, and classify them. Compare the differences between sexual and asexual reproduction. Explain pollination and the structures of a plant that allow for reproduction. Describe how pollination leads to fertilisation, describe how seeds and fruits are formed. Discover what happens in germination and explain why seeds need resources.	Recall the nutrients needed in our diets. Find out the different sources of foods for different nutrients. Describe the benefits of a balanced diet, and explain how types of malnutrition are caused and their effects. Recall the parts of the digestive system, and explain why enzymes are useful for digestion. Explain how diffusion enables absorption by the small intestine.	Describe the reactions of hydrogen and hydrocarbons with oxygen. Describe oxidation reactions with metals and non-metals. Use the fire triangle to explain how to control a fire, and identify hazard symbols. Identify different pollutants that are formed by burning fuels. Explain these pollutants effects in the environment. Describe the greenhouse effect and how it may be caused by human activity.	Recall what happens in aerobic respiration. Recall the functions of the organs in the gas exchange system. Describe the effects of exercise on breathing and heart rates, describe the causes and effects of reduced oxygen supply. Recall how to detect aerobic respiration, and describe gas exchange. Recall what happens in anaerobic respiration, and describe the effects.	Explain how internal energy and temperature are different. Explain what happens to particles when a liquid evaporates. Describe how energy is transferred by radiation, conduction and convection. Recall ways to reduce energy transfers. Describe and calculate power and efficiency. Explain how electricity is charged for by companies, calculate pay-back times.	Compare light and sound waves, describe what happens to light when it hits different surfaces. Describe how light is reflected by surfaces. Recall uses of lenses and use a model to explain how they work. Recall and compare the parts of the eye and camera. Investigate how to make a spectrum, and explain why objects appear coloured.	Explore the ideas of the structure of the universe, how the model of the solar system developed. Discover why only some planets have day and night, as well as the reason for the Seasons on Earth. Learn how to calculate weight, and discuss vast interstellar distances using light-years.	Name common metals and their properties. Describe and explain what happens during corrosion. Describe the reactions of metals with water, investigate the reactivity series. Describe the reactions of metals with acids, write word and symbol equations. Explain what alloys are and why they are used, use models to explain the properties of alloys.	Discover the history of the periodic table, identify different elements from their symbols. Explain the difference between physical and chemical changes. Write chemical formula. Use the periodic table to predict properties. Explain melting, freezing and boiling points. Investigate the reactions of some elements and water to identify trends.	Learn about the particle model, and discover the wonder of Brownian Motion. Find out about how atoms move to change state, and discuss pressure in fluids. Investigate what causes objects to float and sink in water. Explain how drag can affect different objects that move in fluids.	Discover the 5 different kingdoms, compare unicellular and multicellular organisms. Describe how yeasts are used in baking and brewing. Describe how bacteria reproduce, and why anaerobic bacteria make yoghurt and cheese. Describe the functions of the common parts of proctist cells. Explain the importance of decomposers using the carbon cycle.	Describe and compare different types of rocks. Understand the formation and composition of both igneous and metamorphic rocks. Explain different weathering effects which can cause erosion. Explain what sedimentary rocks are, and how they form. Link to the rock cycle. Explain how metals are obtained from the Earth.
<b>Assessment</b>	<b>30 Minute end of topic knowledge question assessment</b>											
	<b>End of term assessment</b> 60 Mark written assessment covering topics				<b>End of term assessment</b> 60 Mark written assessment covering topics				<b>End of term assessment</b> 60 Mark written assessment covering topics			