

## CURRICULUM MAP: Science Year 8 Long Term Plan 2022 - 2023

**EXAM BOARD: Pearson (exploring science) – 25% Working Scientifically; 25% Biology, 25% Physics and 25% Chemistry**



Throughout Year 8, pupils will study four Biology, four Chemistry and four Physics units. Each group will rotate through the subjects switching at the end of each school term. All units include planning investigations, recording and analysing data, drawing graphs, writing conclusions and evaluations. Pupils will also need to use their maths skills in Science lessons. Students will also partake in 3 core practical investigations focusing on science-specific skills. Pupils will regularly review content and knowledge throughout their studies. The Year 8 curriculum is designed to be engaging, contextual and assessable to all students and builds the foundations for later study of the sciences as it covers key concepts of all three disciplines which are revisited in more detail at GCSE level.

	Autumn Term 1 Weeks: 7	Autumn Term 2 Weeks: 7	Spring Term 1 Weeks: 6	Spring Term 2 Weeks: 6	Summer Term 1 Weeks: 6	Summer Term 2 Weeks: 7
<b>Key Concepts</b>	Physics	Physics	Chemistry	Chemistry	Biology	Biology
<b>Themes</b>	<p><b>Fluids</b> – the particle model, calculations with density, state changes, pressure in fluids, floating and sinking, the force of drag.</p> <p><b>Light</b> – how light travels, the use of ray diagrams, ways of investigating light, reflection and refraction, the science behind cameras and eyes, explaining colour.</p> <p><b>Energy Transfers</b> – the difference between internal energy and temperature, transferring energy by heating, controlling energy transfers, power and efficiency, calculating the cost of energy, the effect of energy use on the planet.</p> <p><b>Earth and Space</b> – models of the solar system, understanding what causes the seasons, the Earth’s magnetic field, gravity in space, beyond the solar system, studying space.</p>		<p><b>Combustion</b> – burning fuels, reacting metals with oxygen, stopping combustion reactions, air pollution, global warming, reducing pollution.</p> <p><b>The Periodic Table</b> – Dalton’s atomic model, reactions of elements, chemical formulae, Mendeleev’s table, groups of the modern periodic table, physical properties and trends, chemical properties and trends.</p> <p><b>Metals and Their Uses</b> – metal properties, catalysts, rusting and corrosion, metals and water, the reactivity series, metals and acids, pure metals and alloys.</p> <p><b>Rocks</b> – rocks and their uses, the formation of igneous and metamorphic rocks, weathering and erosion, the formation of sedimentary rocks, materials in the Earth.</p>		<p><b>Food and Nutrition</b> – nutrients in food, testing foods, uses of nutrients, balanced diets, deficiency diseases, starvation, obesity, the digestive system, gut bacteria, enzymes, absorption of food, small intestine adaptations.</p> <p><b>Plants and their Reproduction</b> – classification and biodiversity, sampling techniques, types of reproduction, pollination, cross-pollination, fertilisation and dispersal, germination and growth.</p> <p><b>Breathing and Respiration</b>- aerobic respiration, gas exchange, measuring respiration, internal transportation of oxygen, gas exchange in different organisms, anaerobic respiration.</p> <p><b>Unicellular Organisms</b> – unicellular vs multicellular, microscopic fungi, bacteria cells, protocista, decomposers and the carbon cycle, recycling carbon.</p>	

<b>Writing Whole School Literacy Focus</b>	Presenting scientific information, how to prepare a presentation, choosing the correct language for your audience, making strong scientific arguments.		The difference between information and explanation text, structuring sentences to clearly explain ideas, using adjectives to describe materials, assessing the reliability of source material.		How to add 'weight' to facts and opinions using evidence, structuring paragraphs to make ideas clear, showing cause and effect in sentences, using modal verbs to show degrees of certainty.	
<b>Spiritual, Moral, Social and Cultural theme (SMSC) Fundamental British Values (FBV)</b>	Spiritual & Social through presentations and practical work	Spiritual & Social through presentations and practical work	Spiritual & Social through presentations and practical work	Spiritual & Social through presentations and practical work	Spiritual & Social through presentations and practical work	Spiritual & Social through presentations and practical work
<b>Key Assessment Focuses, Suggested Assessments and Feedback Week</b>	Online end of topic tests with instant feedback Summative end of term Physics test taken at foundation, intermediate or higher level. Students must achieve 50% to be working at the expected level		Online end of topic tests with instant feedback Summative end of term Chemistry test taken at foundation, intermediate or higher level. Students must achieve 50% to be working at the expected level		Online end of topic tests with instant feedback Summative end of term Biology test taken at foundation, intermediate or higher level. Students must achieve 50% to be working at the expected level	
	An 'Assessment DIRT' will also be completed after each assessment where students identify strengths and areas for improvement using their PLC documents and will attempt to turn their PLC statement into a question and complete the answer. Students will self-assess their work with purple highlighters.					

<b>Special Events</b>				Science Fair	Science Week	
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