



Science Year 8

Intent : Science curriculum intent: As a school our curriculum inspires students to want to know more, understand more and be able to do more. In science we intend to harness the innate desire in young people to want to know more about the world and use this to help them understand how the strands of science learning fit into the big picture. We intend to help the students develop into learners who can see a problem and work both independently and together to find a solution. We recognise that all young people are scientists, and we aim to enable them to develop these skills. At the start of year 8 students should already be well aware of some of the key concepts in KS3 and they will be able to work safely in a science lab, by the end of year 8 they will have built on this knowledge and be able to work confidently in a lab setting.



	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 8 Units	8AA- Safety and risk 8A food and nutrition 8E combustion	8I fluids 8B plants and their reproduction	8C breathing and respiration 8J light 8F the periodic table	8G metals and their uses 8K energy transfer	8L Earth and space 8D unicellular organisms 8H Rocks	End of year projects
Key Content	8A Covers balanced diets, nutrient functions, food testing, energy needs, malnutrition, enzyme action, and the structure and function of the digestive system. 8E Explores combustion reactions, conservation of mass, fire safety, pollutant formation, acid rain, greenhouse gases, and the impact of fossil fuels on global warming.	8B Explores plant kingdoms, biodiversity, sexual and asexual reproduction, pollination, fertilisation, germination, photosynthesis, and ecological sampling. 8I Includes states of matter, changes of state, density calculations, pressure in fluids, floating and sinking, and how drag affects movement through liquids and gases.	8C Includes aerobic and anaerobic respiration, oxygen debt, gas exchange systems, ventilation mechanics, and the impact of smoking on health. 8F Includes Dalton's atomic theory, chemical symbols and formulae, properties of metals and non-metals, periodic trends, and reactions forming oxides and changes of state. 8J Covers how light travels, shadows, transmission and absorption, mirror reflections, refraction through transparent materials, lens function, eye structure, colour mixing, and dispersion.	8G Covers physical and chemical properties of metals, reactions with oxygen, water, and acids, corrosion and rusting, uses of metals, catalysts, and the structure and benefits of alloys. 8k Explores temperature vs thermal energy, methods of heat transfer, insulation, infrared radiation, power and energy units, efficiency calculations, Sankey diagrams, and energy costs.	8D Covers kingdoms of life, features of bacteria, fungi, and protoctists, feeding methods, respiration types, growth conditions, and their role in decomposition and nutrient cycling. 8H Explores rock types and textures, fossil formation, extraction and use of Earth materials, environmental effects of mining, and the importance of recycling metals. 8L Includes Earth's rotation and orbit, phases of the Moon, planetary motion, gravitational fields, weight vs mass, artificial satellites, magnetic fields, and the structure of the universe.	The end of year projects will develop confident lab skills.
Literacy	Key word sheets AA and 8E	Key word sheets 8I and 8B	Key word sheets 8C, 8J and 8F	Key word sheets 8G and 8K	Key word sheets 8L, 8D and 8H	
Knowledge organiser	8AA- Safety and risk 8A food and nutrition 8E combustion	8I fluids 8B plants and their reproduction	8C breathing and respiration 8J light 8F the periodic table	8G metals and their uses 8K energy transfer	8L Earth and space 8D unicellular organisms 8H Rocks	
Assessment	8Aa, 8A and 8E will be assessed in assessment one.	8I and 8b will be assessment in assessment two.	8C, 8I and 8J will be assessment in assessment three.	.8G and 8K will be assessed in assessment four.	The end of year assessment will cover all the modules taught this year.	

GCSE AO Link (or other) if applicable	In science the assessment objectives are: AO1 Demonstrate knowledge and understanding. AO2 Apply knowledge and understanding. AO3 Analyse information and ideas. These are all covered in each block of three modules.
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Homework	One piece of homework, set on Seneca, a fortnight. This should take up to 30 minutes.
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CEIAG – STEM careers that relate to these topics.	Dietitian / Nutritionist – understanding balanced diets and digestion. Fire Safety Engineer – applying combustion science and fire prevention. Environmental Scientist – studying pollution and climate change from fossil fuels.	Botanist / Agricultural Scientist – working with plant reproduction and biodiversity. Marine Engineer / Fluid Dynamics Specialist – applying fluid pressure and drag principles in design.	Respiratory Therapist / Medical Scientist – focusing on breathing, respiration, and health. Optical Engineer / Photographer – using light, lenses, and colour science. Chemist / Materials Scientist – exploring atomic theory and element properties.	Metallurgist / structural Engineer – working with metal properties and corrosion. Energy Consultant / Renewable Energy Engineer – improving energy efficiency and sustainability.	Astronomer / Satellite Technician – studying planetary motion and space systems. Microbiologist / Biomedical Scientist – researching unicellular organisms and their roles.	STEM Innovator / Science Communicator – applying cross-topic knowledge in creative and collaborative ways.
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Enrichment	Science club is open to all KS3 students.
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