

Subject: Science

Year group: 8

Department Curriculum Vision: *The KS3 Science Curriculum is designed to provide students with a solid foundation in scientific knowledge and skills. It covers a wide range of topics across Biology, Chemistry, and Physics*
The main theme for Year 8 is 'Advance and deepen' whilst following the National Curriculum

	Autumn Term 1	Autumn Term 2
Content: (Know what...)	Health & Digestion • Healthy and balanced diet • Unhealthy diet • Food test • Digestive system • Enzymes • Drugs • Alcohol • Smoking Periodic table • Periodic table • Metals and Non-Metals • Group 1 • Group 7 • Group 0	Electricity & Magnetism • Circuits and current • Potential difference • Parallel circuits • Resistance • Magnetism • Electromagnets • Static electricity Separating techniques • Mixtures and solution • Solubility • Filtration • Simple distillation

Skills: (know how...)	Skills focus: Being able to correctly plot bar and line graphs Practical skills: • Food test • Modelling digestion Additional skills: • Extended writing • Graph drawing and reading • Use of scientific equipment • Working safely in a lab • Scientific research		Skills focus: Being able to correctly plot bar and line graphs Practical skills: • Investigating current • Investigating potential difference • Series and parallel circuit • Investigate how length of wire is affected by resistance • Investigating non-contact forces • Plotting a magnetic field • Changing the strengths of electromagnets • Solubility of salt in water • Investigating filtration • Distillation of inky water Additional skills: • Extended writing • Graph drawing and reading • Use of scientific equipment • Working safely in a lab • Scientific research	
Key vocabulary	• Nutrient • Carbohydrates • Lipids • Proteins • Vitamins • Mineral, • Fibre, • Balanced diet • Food test • Malnutrient, starvation • Obese, • deficiency	• Metals and Non-metals • Metalloid • Physical property • Chemical property • Group • Period • Density • Alkali metals • Reactive • Displacement • Halogens • Noble gases	• Current • Ammeter • Amps • Cell • Battery • Potential difference • Voltmeter • Volts • Rating • Voltage • Series • Parallel • Resistance	• Mixture • Pure • Impure • Solution • Solvent • Solute • Saturated solution • Solubility • Soluble • Insoluble • Filtration • Filtrate • Residue

	• Enzymes • Carbohydrase • Lipase • bile • Villi • Medicinal drug • Recreational drug • Addiction • Depressant • Ethanol • Passive smoking • Stimulant		• Ohms • Conductor • Insulator • Magnet • North pole • South pole • Magnetic material • Magnetic field • Electromagnet • Electric charge • Positive • Negative • Repel • Attract • Electric field	• Distillation
Mid Term Assessment	• Health & digestion MUA • Periodic table MUA		• Separating techniques MUA • Electricity and Magnetism MUA	
End Term Assessment	• EUA 1: Health and digestion & periodic table		• EUA 2: Separating mixtures and electricity and magnetism	
	Spring 1		Spring 2	

Content: (Know what...)	Sound • Waves • Sound waves • Loudness and pitch • Hearing sound • Ultrasound and echo Acids and Alkalis • Acids and metals • Metals and oxygen • Metals and water • Metals in displacement reactions • Extracting metals • Ceramics , polymers and composites	Light • Light • Reflection • Refraction • The eye • Colour Ecosystems & Processes • Ecosystem- food chains and food webs • Leaf structure • Photosynthesis • Aerobic respiration • Anaerobic respiration
Skills: (Know how...)	Skills focus: Being able to analyse graphs Practical skills: • Reactions of metals with acids • Reaction of metals with water • Displacement reactions Additional skills: • Extended writing • Graph drawing and reading • Use of scientific equipment • Working safely in a lab • Scientific research	Skills focus: Being able to analyse graphs Practical skills: • Reflection of light • Refraction of light • Testing a leaf for starch • Observing the stomata of a leaf • Investigating the effect of exercise on breathing rate • Investigating the rate of fermentation Additional skills: • Extended writing • Graph drawing and reading • Use of scientific equipment • Working safely in a lab • Scientific research

Key vocabulary	• Oscillation • Vibration • Parallel • Energy • Amplitude • Frequency • Wavelength • Peak • Crest • Through • Transverse • longitudinal • Compression • Rarefaction • Reflection • Incident wave • Reflected wave • Medium • Vacuum • Speed of light • Speed of sound • Pitch • Loudness • Ossicles • Pinna • Auditory canal • Auditory nerve • Ear drum • Ossicles • Cochlea • Amplify • echo • Infrasound • Ultrasound •	• Acid • Metal • Reactivity series • Displacement • Ore • Ceramic • polymer • Natural polymer • Synthetic polymer • Composite • Carbon fibre	• Source • Emit • Reflect • Eye • Absorb • Luminous • Non-luminous • Transmit • Transparent • Translucent • Opaque • Image • Virtual • Plane • Incident ray • Reflected ray • Normal • Angle of incident • Angle of reflection • Law of reflection • Refraction, medium • Lens • Convex • Converging • Retina • Pupil • Iris • Cornea • Optic nerve • Prism • Spectrum • Dispersion • Primary colour • Secondary colour • Filter	• Producer • Consumer • Food chain • Food web • Interdependence • Ecosystem • Population • Habitat • Photosynthesis • Chlorophyll • Stomata • Aerobic respiration • haemoglobin • Anaerobic respiration • Oxygen debt • Fermentation
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Mid Term Assessment	• Sound MUA • Acids and Alkalies MUA	• Light MUA • Ecosystems and processes MUA
End Term Assessment	• EUA 3: Sound & acids and alkalis	• EUA 4: Light and ecosystems and processes
	Summer 1	Summer 2
Content: (Know what...)	Motion and Pressure • Speed • Distance time graphs • Pressure in solids • Pressure in liquids • Pressure in gases Adaptation & Inheritance • Competition and adaptation • Adapting to change • Variation • Inheritance • Natural selection • Extinction • Continuous and discontinuous variation	Earth 2 Project • Earth and atmosphere • Carbon cycle • Climate change • Water cycle • Reduce, reuse, recycle
Skills: (Know how...)	Skills focus: Being able to write methods from variables Practical skills: • Investigate the average speed of a trolley • Distance time graph • Analyse arm span Additional skills: • Extended writing • Graph drawing and reading • Use of scientific equipment	Skills focus: Being able to write methods from variables Additional skills: • Extended writing • Graph drawing and reading • Use of scientific equipment • Working safely in a lab • Scientific research

	- Working safely in a lab - Scientific research		
Key vocabulary	- Speed - Metres per second - distance -time graphs - Acceleration - Gas pressure - Compressed - Atmospheric pressure - Density - Liquid pressure - Incompressible - Pressure - Newtons per metre squared	- Competition - Adaptation - Predator - Prey - Interdependence - Variation - Species - Discontinuous variation - Continuous variation - DNA - Chromosome - Gene - Evolution - Fossil - Natural selection - Extinct - Biodiversity - Endangered	- Crust - Mantle - Core - Outer core - Inner core - Atmosphere - Troposphere - Respiration - Combustion - Photosynthesis - Carbon cycle - Carbon store - Dissolving - Climate change - Deforestation - Greenhouse effect - Greenhouse gas - Global warming - Recycling
Mid Term Assessment	Motion and Pressure MUA Adaptation and Inheritance MUA		Earth MUA
End Term Assessment	EUA 5: Motion & pressure and Adaptation & Inheritance		EUA 5: Earth 2
Additional information			

Homework	A range of homework tasks will be set including: - Research tasks - Revision tasks - Model making - Seneca - Application practice
Extra curricular and enrichment opportunities	• Science club • Science week • Projects & competitions • Science Careers
Useful links that will support learning	Seneca - https://senecalearning.com/en-GB/ BBC Bitesize - https://www.bbc.co.uk/bitesize/subjects/zng4d2p Sparx science - https://sparxscience.com/
How parents can support learning	We encourage parents/carers to engage in conversation with their child/children about their science lessons and homework. Please support students by making sure they are spending time going over key knowledge and revisiting key definitions.