

Subject: Science Year group: 7

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 7 is 'Building Blocks' whilst following the National Curriculum

	Autumn Term 1	Autumn Term 2
Content: (Know what...)	● Lab safety & Data skills - Lab rules & equipment - How to use a Bunsen burner - Drawing tables and graphs ● Forces - What are forces - Interaction pairs - Friction and drag - Force and extension - Forces and motion - Forces and fields	● Particle model - States of matter and particle arrangement - Changes of state - Diffusion - Gas pressure ● Cells - Structure of Animal and Plant cells - Observing cells - Specialised cells - Movement of substances - Prokaryotes and Eukaryotes
Skills: (know how...)	Skills focus: Understanding and being able to identify the different variables (independent, dependent & control) Practical skills: ● Lab skills - Using a Bunsen burner to heat water and record the temperature at intervals ● Hooke's Law experiment - investigating the relationship between force and extension of a spring Additional skills: ● Extended writing ● Graph drawing and reading	Skills focus: Understanding and being able to identify the different variables (independent, dependent & control) Practical skills: ● Investigating the effect of temperature on the rate of diffusion ● How to use a microscope to observe cells Additional skills: ● Extended writing ● Graph drawing and reading

	• Use of scientific equipment • Working safely in a lab • Scientific research		• Use of scientific equipment • Working safely in a lab • Scientific research	
Key vocabulary	• Risk • Hazard • Repeatable • Independent variable • Dependant variable • Control variable • Gravity • Friction • Contact force • Non contact force	• Newton • Deform • Water resistance • Air resistance • Streamlined • Magnetic force • Electrostatic force • Mass • Weight • Equilibrium	• Particle • Solid/liquid/gas • Melting • Freezing • Evaporation • Condensation • Sublimation • Diffusion • Collide • Gas pressure	• Microscope • Cell • Organism • Nucleus • Mitochondria • Cytoplasm • Cell membrane • Vacuole • Chloroplast • Cell wall • Specialised • Diffusion • Prokaryotes • Eukaryotes
Mid Term Assessment	• Lab safety and skills MUA • Forces MUA		• The particle model MUA • Cells EUA	

End Term Assessment	• EUA 1: Lab safety and skills and forces	• EUA 2: The Particle model and Cells
	Spring 1	Spring 2
Content: (Know what...)	• Atoms, Elements & Compounds - What are atoms, elements & compounds - Naming compounds - Counting atoms - Conservation of mass • Energy - Energy and food - Energy stores and transfers - Energy and temperature - Conduction, Convection & Radiation - Radiation - Energy and work	• Body systems - Levels of organisation - Organ systems - Breathing and Gas exchange - The human skeleton - Muscles and joints • Chemical reactions - Chemical and Physical reactions - Word equations - Combustion - Thermal decomposition - Endothermic and exothermic reactions

Skills: (Know how...)	Skills focus: Being able to correctly complete and draw results tables for data collection Practical skills: • Energy transfer circus • Investigating conduction • Investigating convection 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 complete and draw results tables for data collection Practical skills: • Measuring lung volume capacity • Investigating fuel efficiency • Investigating temperature change - Endothermic and exothermic reactions Additional skills: • Extended writing • Graph drawing and reading • Use of scientific equipment • Working safely in a lab • Scientific research	
Key vocabulary	• Atom • Element • Compound • Molecule • Periodic table • Chemical formula • Conservation of mass	• Joule/kilojoule • Equilibrium • Kinetic • Thermal • Chemical • Gravitational potential • Elastic • Conduction • Conductor • Insulator • Convection • Infrared Radiation • Fossil fuels • Renewable • Non-renewable	• Tissue • Organ • Organ system • Organism • Gas exchange • Respiration • Contract • Diaphragm • Joint • Ligament • Tendon • Antagonistic muscles	• Reversible • Irreversible • Chemical change • Physical change • Reactant • Product • Fuel • Combustion • Oxidation • Thermal decomposition • Endothermic • Exothermic

Mid Term Assessment	• Atoms, elements and compounds MUA • Energy MUA	• Body systems MUA • Chemical reactions MUA
End Term Assessment	• EUA 3: Atoms, elements, compounds & Energy	• EUA 4: Body systems and Chemical reactions
	Summer 1	Summer 2

Content: (Know what...)	● Reproduction - Adolescence - Reproductive systems - Fertilisation and implantation - Foetal development - The Menstrual cycle - Contraception - Plant reproduction - Germination and seed dispersal ● Acids and Alkalis - Acids and alkalis - Indicators and the pH scale - Neutralisation - Making salts	● Space - The solar system - The night sky - Day, night & the seasons - Phases of the moon - Space exploration - Mars colonisation ● Earth 1 - Sedimentary rocks - Metamorphic rocks - Igneous rocks - The rock cycle - Fossils and fossils fuels
Skills: (Know how...)	Skills focus: Being able to read and interpret scientific graphs including identifying trends and patterns Practical skills: ● Flower dissection ● Investigating factors that affect the speed it take for a seed to fall from a tree ● Testing substances using indicators ● Making copper sulphate crystals Additional skills: ● Extended writing ● Graph drawing and reading ● Use of scientific equipment ● Working safely in a lab ● Scientific research	Skills focus: Being able to read and interpret scientific graphs including identifying trends and patterns Practical skills: ● Formation of rocks (modelling these in the lab) ● Investigating the cooling rate and the size of crystals formed in igneous rocks Additional skills: ● Extended writing ● Graph drawing and reading ● Use of scientific equipment ● Working safely in a lab ● Scientific research

Key vocabulary	• Adolescence • Puberty • Hormones • Gametes • Sperm & Egg • Penis • Vagina • Ejaculation • Fertilisation • Implantation • Embryo • Foetus • Placenta • Umbilical cord • Gestation • Menstrual cycle • Contraception • Pollination • Germination	• Acid • Alkali • Corrosive • Dilute • Concentrated • Indicator • pH Scale • Neutral • Neutralisation • Base • Salt •	• Orbit • Satellite • Comet • Meteor • Galaxy • Universe • Gravity • Planet • Axis • Constellation • Eclipse
Mid Term Assessment	• Reproduction MUA • Acids and alkalis MUA		• Space MUA
End Term Assessment	• EUA 5: Reproduction & Acids and alkalis		• EUA 6: Space & Earth
Additional information			

Homework	A range of homework tasks will be set including: - Research tasks - Revision tasks - Model making - Seneca - Application practice
Extracurricular 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. We also encourage parents to