KS3 Curriculum Overview: Science

	Year 7	Year 8	Year 9

Autumn Term	**Introduction to science**
	• Lab safety
	• Prediction and hypotheses
	• Making observations
	• Identifying variables
	• Tables and bar charts
	• Hazard symbols
	
	Biology: Ecosystems
	• Destruction of habitats
	• Energy transfer in ecosystems
	• Human activities
	• Decreasing population of bees
	
	Chemistry: Particles
	• Solids, liquids, and gases
	• The particle model
	• Density
	• Melting and boiling
	• Diffusion
	• Pressure
	
	Physics: Energy / Motion
	• Energy and human activity
	• Energy stores
	• Energy efficiency (household)
	• Energy vs. power
	• Calculating energy bills
		Biology: Heart and health / Reproduction
		• Blood vessels
		• The heart
		• Coronary heart disease
		• Diabetes
		• Cancer
		• Pathogens
		• Drugs
		
		• Puberty
		• Male / female reproductive systems
		• The menstrual cycle
		• Intercourse and conception
		• Pregnancy
		• STIs and contraception
		
		Chemistry: Acids and bases
		• Acids and bases
		• pH and litmus
		• pH and universal indicator
		• Strength and concentration
		• Neutralisation
		• Making salts
		
		Physics: Light
		• Luminous and non-luminous
		• Reflection
		• Concave vs. convex lenses
			Biology
			• Cell Biology
			  ○ Cell Structure
			  ○ Cell Division
			  ○ Cell Transport
			Chemistry
			• Atomic Structure and Periodic Table
			  ○ Atoms, elements, compounds
			  ○ Trends in the Periodic Table
			Physics
			• Energy
			• Electricity
			  ○ Charge and Circuits

	• Renewable / non-renewables • Speed / relative speed • Calculating speed of common objects • Interpreting distance time graphs	• The human eye • Primary and secondary colours • Electromagnetic waves	
Spring Term	**Biology: Introduction to organisms** • Alive, dead, or never alive • Organ systems • Muscular and skeletal systems • Circulatory system • Breathing system • Digestive system • Cells and compound microscope **Chemistry: Separating Mixtures** • Mixtures and solutions • Solubility and saturation • Filtration • Evaporation • Distillation • Chromatography **Physics: Forces** • Forces (drawing scientifically) • Freebody diagrams • Weight vs. mass • Extension and spring constant • Stress force • Attraction and repulsion of magnets	**Biology** • Breath **Chemistry** • Metals **Physics** • Energy transfers • Electricity	**Biology** • Organisation & Exchanging Materials o Lungs o Digestive System o Circulatory System **Chemistry** • Structure and Bonding o Covalent Bonds o Ionic Bonds o Metallic Bonds **Physics** • Electricity o Potential Difference o Resistance • Particles o Density

Summer Term	**Biology: Digestion / Cells**
	• The human diet
	• Digestive system
	• Testing for nutrients
	• Enzymes of digestion
	
	• Cells and microscopy
	• Cell structure
	• Specialised plant / animal cells
	• Cellular reproduction
	
	Chemistry: Chemical Properties
	• Chemical reactions
	• Conservation of mass
	• Word equations
	• Displacement reactions
	• Combustion and oxidation
	• Thermal decomposition
	
	Physics: Oscillations
	• Oscillations, frequency, and period
	• Waves – longitudinal / transverse
	• Speed of sound / speed of light
	• Echo
	• Amplitude and frequency
	• Transparent, translucent and opaque
		Biology: Plants / Inheritance
		• Flowering plant systems
		• The leaf (structure and adaptations)
		• Photosynthesis (including limiting factors)
		• The root system
		• Plant nutrition
		
		• DNA, chromosomes, and genes
		• Inheritance and variation
		• Adaptations and evolution (natural selection)
		• Fossils and evidence of evolution
		• Competition
		
		Chemistry: Chemical formulae
		• Balanced symbol equations / word equations
		• Drawing structure diagrams
		• Combustion and oxidation reactions
		• Thermal decomposition
		• Displacement reactions
		• Neutralisation reactions
		
		Physics: Magnets
		• Properties of magnetic materials
		• Magnetic field lines
		• Structure and uses of electromagnets
		• The motor effect
			Biology
			• Enzymes
			  ○ Enzyme Theory
			  ○ Enzyme activity
			• Organisation
			  ○ Plant organs
			• Disease and Response
			  ○ Human Defences
			  ○ Plant diseases
			
			Chemistry
			• Chemical Changes
			  ○ Reactivity in metals
			  ○ Electrolysis
			Physics
			• Atoms and ionising radiation