

Year 8 Science Curriculum

Key:

HSW – How Science Works (investigation Skills)

A – Some classes may do this lesson if time. These lessons won't be examined in year 7.

	Subject	Topics
Half Term 1 (Autumn Term)	Physics-Motion	1. Speed & velocity
		2. Free body diagrams
		3. Distance-time graphs
		4. Distance-time graph HSW
		5. Unbalanced forces
		6. Acceleration theory
		7. Acceleration practice (A)
		8. Speed-time graphs
	Physics-Energy	1. Energy stores and transfers
		2. Mechanical work
		3. Mechanical Power
	Biology–Organ Systems	1. Respiratory System with lung dissection
		2. Non-Communicable Respiratory Diseases
		3. Circulatory System
		4. Circulatory System – heart HSW
		5. Non-Communicable Cardiovascular Disease
		6. Skeletal System – Bones
		7. Skeletal System – Tendons
		8. Muscular System
		9. Nervous system
		10. Endocrine system
		11. Urinary system
Half Term 2 (Autumn Term)	Chemistry-Fundamentals	1. Word and Symbol Equations
		2. Balancing equations
		3. Conservation of Mass
		4. Explaining Decreases and increases in Mass HSW
		5. Compounds & Mixtures
	Chemistry–Purity and Separating Mixtures	1. Pure and Impure

		2. Solubility and basic separation
		3. Separating Mixtures Filtration vs Crystallisation HSW
		4. Separating Mixtures Experiment HSW
		5. Simple Distillation
		6. Fractional Distillation (A)
		7. Chromatography & Rf values (A)
Half Term 3 (Spring Term)	Physics-Electricity	1. Current in series ($I = Q/t$) HSW
		2. Current in parallel circuits HSW
		3. P.d. in series HSW
		4. P.d. in parallel HSW
		5. Resistance HSW
	Physics – Thermal Physics	1. Heat Energy vs temperature
		2. Heating and cooling curves.
		3. Conduction
		4. Convection
		5. Radiation
	Biology - Plants	1. Parts of a Plant Including the Flower with flower dissection HSW
		2. Asexual vs Sexual Reproduction
		3. Pollination – Wind and Animal
		4. Fertilisation, Dispersal and Germination
Half Term 4 (Spring Term)	Biology – Unicellular Organisms	1. Recap classification
		2. Bacteria
		3. Good gut bacteria and communicable bacterial diseases
		4. Fungi – uses and communicable diseases
		5. Viruses – communicable diseases
		6. Protists – communicable diseases
	Chemistry - Metals	1. Properties of metals
		2. Structure of Metals
		3. Metals and oxygen (Rusting)
		4. Metals and water HSW
		5. Metals and Acids HSW

		6. Group 1 Metals
		7. Reactivity series
		8. Displacement theory & Equations
		9. Displacement practical
		10. Extraction of copper HSW (A)
Half Term 5 (Summer Term)	Chemistry – Rates of Reaction	1. Collision Theory
		2. Factors effecting rates
		3. Effect of concentration practical planning HSW - variables
		4. Effect of Concentration practical
		5. Interpreting graphs
		6. Effect of Catalysts and Activation energy (A)
	Physics - Light	1. Transverse and longitudinal recap
		2. Properties of light
		3. Reflection
		4. Refraction
		5. How we see (inc. basic lenses)
Half Term 6 (Summer Term)	Biology – Habitats and Human Impact	Polar regions
		Forests
		Savannahs
		Oceans
		Deserts
		Coasts
		Fresh Water
		Mountains
		British Wildlife
	Physics – Gravitational Forces	1. Newton and Gravitational force
		2. Weight mass and recap
		3. Measuring mass HSW (A)
		4. Satellites & orbits
	Chemistry – Earth Science	1. Structure of the Earth
		2. Rock Cycle (A)

		3. Current atmosphere, greenhouse effect and global warming
		4. Pollution including Acid Rain (A)

	Subject	Topics
Half Term 1 (Autumn Term)	Intro to Science	Behaviour and Lab Safety
		Lab equipment
		Fire safety and Bunsen burners
		Accurate measurements HSW
		Behaviour and Lab Safety
	Biology - Cells	Life Processes
		Animal Cells
		Plant cells (Eukaryotic cells)
		Introduction to Microscopy
		Microscopy HSW
		Specialised Cells in animals
		Levels of organisation in animals
		Levels of organisation in plants
	Physics - Forces	Naming forces
		Force diagrams and balanced forces
		Resultant Forces
		Mass and Weight
Half Term 2 (Autumn Term)		Friction
		Friction HSW
		Speed
		Speed rearranging
		Distance-time graphs (A)
		Friction
	Physics - Energy	Energy stores
		Energy pathways
		Energy accounts/conservation
		Energy stores
	Chemistry – Particle Model	States of Matter HSW
		Particle Model
		Changing State
		4. Modelling the particle model
		5. Application of Particle Model
		Brownian Motion (A)
	Chemistry – Periodic Table	Atoms and Elements and symbols

		Element symbols and Chemical formulas
		Periodic table
		Atomic Structure
		Protons, Electrons and Neutrons
Half Term 3 (Spring Term)	Biology - Reproduction	Reproductive organs - female
		Reproductive organs - male
		Puberty
		The menstrual cycle
		Tampon investigation
		Fertilisation
		Pregnancy
		8. Impact of lifestyle on pregnancy (A)
	Chemistry – Compounds and mixtures	Chemical vs Physical Changes
		Compounds and Mixtures
		Making compounds HSW
		Naming Compounds
		Writing word equations
Half Term 4 (Spring Term)	Chemistry – Acids and Bases	Intro to Acids and Bases
		Use of indicators HSW
		Neutralisation
		Naming salts
		Neutralisation HSW
	Physics - Electricity	Conductors vs Insulators
		Electric circuits and components
		Current in series
		P.d. in series
		Current and p.d. HSW
	Physics - Magnetism	Magnets and magnetic materials
		Magnetic fields
		Electromagnets and their uses
		Electromagnets (A)
Half Term 5 (Summer Term)	Chemistry – Equations and Reactions	Word and symbol equations
		Balancing Equations theory
		Balancing Equations practice

		Acids and Metals
		Acid and Metals HSW
		Acids and metal carbonates (A)
		Displacement
		Oxidation HSW
		Precipitation and thermal decomposition (A)
	Biology - Environment	Habitats
		Adaptations
		Food Chains and Food Webs
		Pyramids
		Classification
	Biology – Food and Digestion	Food Groups
		Food Tests – Starch and Protein
		Food Tests – Fats and Sugars
		The Digestive Systems
		Digestive Enzymes (A)
		Non-Communicable Disease – Malnutrition, Starvation, Obesity
Half Term 6 (Summer Term)	Physics – Sound and Light	Wave introduction
		Wave properties
		Sound: pitch and volume
		How do we hear? (A)
		Speed of waves
	Physics - Space	Earth's Days
		Earth's Seasons
		The Solar System
		Changing ideas about the Solar System (A)