

Year 10 Science Curriculum Plan 2024-2025

	Recap and Quantitative Chemistry	Cell structure and transport	Recap and Atomic Structure	
Cycle 1	<ol style="list-style-type: none"> Subatomic particles, electronic structures Ions, dot and cross diagrams Ionic bonding and properties Covalent properties Reactivity of group 1/7 Relative atomic mass calculations Conservation of mass and decrease in products Balancing equations Uncertainty mean and range Relative formula mass and percentage of mass within a compound Mole introduction (Avogadro and Mr) Moles in equations- reacting masses Moles in equations- Limiting reactants and theoretical yields Concentration calculations 	<ol style="list-style-type: none"> REVIEW Lungs and gas exchange Blood Blood vessels Structure of the heart Heart dissection Coronary Heart disease Aerobic respiration Response to moderate exercise- changes observed Response to intense exercise – oxygen debt/ lactic acid/ recovery rates Anaerobic respiration in plants and yeast Metabolism 	<ol style="list-style-type: none"> Recap particle model, density theory and calculation Density RP Density RP 2 Changes of state Internal energy SHC SHC practical Latent Heat Pressure in gases (temperature) Atomic structure including size, and ions Isotopes and early atomic models Later atomic models, Rutherford's experiment Electron energy levels inc. flame tests practical Radioactive decay- properties of alpha/ beta/ gamma/ neutron Balanced nuclear decay equations 	End of cycle 1 assessment
	Chemical changes Reactions and Electrolysis	Cell division and disease	Radioactivity and Forces	
Cycle 2	<ol style="list-style-type: none"> Reactions of metals and water and acids and the reactivity series Displacement reactions Extraction using carbon. Metals and oxygen- OIL RIG Acids and alkalis- pH scale Strong and weak acids Neutralisation Reactions of acids with metals and naming salts Naming salts RP8- Making a soluble salt CuSO4 Review of ions and ionic properties Electrolysis of molten Extraction of aluminium oxide Electrolysis of aqueous solutions- Rules Half equations RP9- Electrolysis with inert electrodes 	<ol style="list-style-type: none"> Plant tissues and organs Plant transport systems incl xylem and Phloem Transpiration and Stomatal density Factors affecting transpiration Photosynthesis Reaction Limiting factors Required Practical- Pondweed Follow up lesson (incl inverse square law) Uses of glucose Testing a leaf for starch 	<ol style="list-style-type: none"> Nuclear decay equations 2 Half-life Half-life graphs Irradiation vs contamination and uses Names of forces, contact vs non contact Scalars/vectors. Distance vs displacement. Weight and mass inc. reference to COM Free body diagrams/ resultant forces Scale diagrams for 2D Resolving vectors Speed vs velocity Distance time graphs Acceleration Velocity time graphs More on motion graphs 	End of cycle 2 assessment
	Chemical changes- Energy changes and Crude oil	Homeostasis and Response Hormones	Forces in Balance	
Cycle 3	<ol style="list-style-type: none"> Exo/Endothermic Energy diagrams Displacement reactions- temperature change. RP10- Temperature change of Neutralisation Graphs and analysis of RP10 Bond energy calculations PAPER 1 is finished Crude oil formation Alkanes, alkenes and bromine water test theory Properties of hydrocarbons Fractional distillation Application of fractional distillation Cracking and bromine water test. Exam questions to review 	<ol style="list-style-type: none"> Homeostasis Organisation of the nervous system Synapses and Reflex arc Reaction times Required Practical Endocrine system Blood glucose Diabetes Negative feedback/thyroxine/adrenaline Human reproduction Menstrual cycle Artificial control of fertility Infertility treatments 	<ol style="list-style-type: none"> Newton's 1st Law and inertia Newton's 2nd Law Newton's 2nd Law RP Newton's 3rd Law Equation of motions Terminal velocity (cupcake cases) Acceleration due to gravity with equation of motion calculation e.g. Ruler drop Stopping distances Braking distance practical Braking and energy Momentum 1 Momentum 2 Hooke's Law Hooke's Law RP Elastic Potential energy 	End of cycle 3 assessment