Science Curriculum 2022-23



	Term 1	Term 2	Term 3
Year 7	 Introductory to Science- Health and Safety Interdependence Matter Forces Consolidation and revision on Year 7 Science for internal assessment Genes- Variation and Reproduction Reactions- Acids and Alkalis Energy, Sound Christmas Science Fun 	 Continuing Genes- Variation and Reproduction Reactions- Acids and Alkalis Energy, Sound Consolidation and revision on Year 7 Science for internal assessment Electricity Matter-Separating Mixtures Cells and movement 	 Continuing- Electricity Matter-Separating Mixtures Cells and movement Consolidation and revision on Year 7 Science for internal assessment Earth Structure Plant Reproduction STEM Challenge
Year 8	 Electromagnets Matter- Separating mixtures Ecosystems- Photosynthesis and Respiration Consolidation and revision on Year 7 and Year 8 Science for internal assessment Waves Matter- Elements and Periodic table Organisms- Breathing and lifestyle 	 Continuing Waves Matter- Elements and PT Organisms- Breathing and lifestyle Consolidation and revision on Year 7 and Year 8 Science for internal assessment Organisms- Digestion Energy- Heating and cooling Earth-Space and Forces-Gravity Reactions- Metals and non metals 	 Continuing- Organisms Digestion Energy- Heating and cooling Earth-Space and Forces-Gravity Reactions- Metals and non metals Consolidation and revision on Year 7 and 8 Science for internal assessment Forensics and CSI day Microbiology

Year 9	 Reactions- Chemical energy and types of reactions Ecosystem- Photosynthesis Forces-Speed and gravity Consolidation and revision on Year 9 Science for internal assessment Ecosystems- Respiration Forces- Contact forces and pressure Eden Chemistry- 	 Continuing- Ecosystems- Respiration Forces- Contact forces and pressure Eden Chemistry- Biology Eden- The ecology of Morecambe Bay and Biodiversity Physics Eden- Energy Efficiency and Powering Morecambe Consolidation and revision on Year 9 Science internal assessment 	 Biomimicry including energy transfer, chemical reactions and photosynthesis and areas studied at GCSE (e.g. nanotechnology, nerve impulses and forces) STEM Challenge
Year 10 Trilogy Combined Science	 Cells and respiration Organisation Atoms Energy Changes Energy and Particle model 	 Continued Energy and Particle model Plant systems and Photosynthesis Bonding Atoms and radioactivity 	 Infection and response Quantitative chemistry Chemical reactions Yr 10 mock exam Ecosystems Organic Chemistry Magnetism

Year 10 Triple Biology	Cells and respirationOrganisation	 Organisation Plants and Photosynthesis Infection and Response 	 Ecosystems Homeostasis-Nervous System Year 10 mock exam
Year 10 Triple Chemistry	Atomic StructureEnergy ChangesBonding	 Bonding continued Chemical Reactions Quantitative Chemistry 	 Quantitative Chemistry continued Rates of reactions Year 10 mock exam
Year 10 Triple Physics	 Energy and particle model Electrical circuits 	 Atoms and radioactivity Magnetism 	 Forces- Elasticity Forces- Movement Year 10 mock exam

 Biology- Ecolog

- Chemistry- The rate and extent of chemical change
- Physics- Waves and Magnetism and Electromagnetism
- Paper 1 Mock Revision to include-
- Biology- Cells; Organisation; Infection and Response and Bioenergetics
- Chemistry- Atoms; Bonding and the periodic table; Quantitative Chemistry; Chemical changes and Energy Changes
- Physics- Energy; Electricity; Particle model of matter and atomic structure

- Chemistry- Chemical Analysis, Chemistry of the Atmosphere and Using resources
- Paper 1 and Paper 2 Mock Revision (see end column for topics)
- Paper 1 revision for external exams.
- Biology- Cells; Organisation; Infection and Response and Bioenergetics
- Chemistry- Atoms; Bonding and the periodic table; Quantitative Chemistry; Chemical changes and Energy Changes
- Physics- Energy; Electricity; Particle model of matter and atomic structure
- Paper 2 revision for external exams-
- Biology- Homeostasis and response; Inheritance, variation and Evolution and Ecology
- Chemistry- Rate and extent of chemical change; Organic Chemistry; Chemical Analysis; Chemistry of the atmosphere and using resources
- Physics- Forces; waves; magnetism and electromagnetism

Year 11 Triple Science

- Paper 1 Mock Revision to include-
- Biology- Cells; Organisation; Infection and Response and Bioenergetics
- Chemistry- Atoms; Bonding and the periodic table; Quantitative Chemistry; Chemical changes and Energy Changes
- Physics- Energy; Electricity; Particle model of matter and atomic structure
- Triple Biology- Inheritance, variation and evolution and Ecology
- Triple Chemistry- Chemical analysis and Chemistry of the atmosphere
- Triple Physics- Waves and Magnetism and Electromagnets

- Triple Biology- Ecology continued
- Triple Chemistry- Using resources
- Triple Physics- Space Physics
- Paper 1 and Paper 2 Mock revision for all three subjects (see end column for topics)
- Triple Paper 1 and Paper 2 revision
- Triple Biology Paper 1-Cells; Organisation; Infection and Response and Bioenergetics
- Triple Biology Paper 2-Biology- Homeostasis and response; Inheritance, variation and Evolution and Ecology
 - **Triple Chemistry Paper 1-**
- Chemistry- Atoms; Bonding and the periodic table; Quantitative Chemistry; Chemical changes and Energy Changes
- Triple Chemistry Paper 2- Rate and extent of chemical change; Organic Chemistry; Chemical Analysis; Chemistry of the atmosphere and using resources
- Triple Physics Paper 1- Energy;
 Electricity; Particle model of matter and atomic structure
- Triple Physics Paper 2 Physics- Forces; waves; magnetism and electromagnetism and Space Physics

A Level Biology Year 12	 Module 1- Development of practical skills (PAGs) Module 2- Fundamentals of Biology including- the basic components of living systems; biological molecules; Plasma membranes enzymes; 	 Module 1- Development of practical skills (PAGs) Module 2- Fundamentals of Biology continued- plasma membranes Module 3- Exchange and Transport including exchange surfaces and breathing; transport in animals; transport in plants. Module 4- Biodiversity, Evolution and Disease including biodiversity; communicable disease 	 Module 1- Development of practical skills (PAGs) Module 4- Biodiversity, Evolution and Disease continued including Biodiversity, classification and Evolution Revision of Modules 1, 2, 3 and 4 (Year 12 content) – for internal assessments Module 6- Genetics, Evolution and Ecosystems including- Ecosystems and Patterns of Inheritance (year 13 work)
A Level biology Year 13	 Review and consolidation of modules 1, 2, 3 and 4 (Year 12 content) Module 1- Further development of practical skills in Biology (PAGs) Module 6- Genetics, Evolution and Ecosystem including- cellular control; patterns of inheritance; ecosystems; cloning; biotechnology and manipulating genomes Module 5- Communication, Homeostasis and Energy including photosynthesis; respiration; 	 Module 1- Further development of practical skills in Biology (PAGs) Module 5- Communication, Homeostasis and Energy including photosynthesis; respiration; plant hormones and homeostasis; hormonal communication and neuronal communication Revision for mock exams (paper 1: module 1, 2, 3, 5; paper 2 module 1, 2, 4, 6; paper 3 unified biology – all content) 	 Module 1 - Completion of practical skills (PAGs) to meet practical endorsement Revision for external exams (paper 1: module 1, 2, 3, 5; paper 2 module 1, 2, 4, 6; paper 3 unified biology – all content)

- Module 1: Development of practical skills in Chemistry (PAGs)
- Module 2: Foundations in Chemistry topics on atoms, ions and compounds, amount of substance, acids and redox, electrons and bonding, shapes of molecules and intermolecular forces
- **Module 1**: Development of practical skills in Chemistry (PAGs)
- Module 3: Periodic table and energy topics on the periodic table, reactivity trends, enthalpy
- Module 4: Core organic chemistry topics on alkanes, alkenes, alcohols, haloalkanes and organic synthesis
- **Module 1**: Development of practical skills in Chemistry (PAGs)
- Module 3: Periodic table and energy topic on equilibrium and reaction rates and consolidation of the whole of module 3
- Module 4: Core organic chemistry topic on spectroscopy and consolidation of the whole of module 4
- Revision of Modules 1, 2, 3 and 4 (Year 12 content) – for internal assessments
- Module 5: Physical chemistry and transition elements – begin topic on reaction rates (Year 13 content)
- Module 6: Organic chemistry and analysis – begin topic ton aromatic compounds (Year 13 content)

A Level Chemistry Year 13	 Review and consolidation of modules 1, 2, 3 and 4 (Year 12 content) Module 1- Further development of practical skills in Chemistry (PAGs) Module 5: Physical chemistry and transition elements -topics on rates of reaction, equilibrium, acid, bases and buffers, enthalpy and entropy, redox and electrode potentials (Year 13 content) Module 6: Organic chemistry and analysis -topics on aromatic compounds, carbonyl & carboxylic acids, amines, amino acids and polymers and organic synthesis (Year 13 content) 	 Module 1- Further development of practical skills in Chemistry (PAGs) Module 5: Physical chemistry and transition elements – transition metals topic and consolidation of the whole of module 5 (Year 13 content) Module 6: Organic chemistry and analysis – chromatography and spectroscopy topic and consolidation of the whole of module 6 (Year 13 content) Revision for mock exams (paper 1: module 1, 2, 3, 5 paper 2 module 1, 2, 4 6; paper 3 unified chemistry – all content) 	 Module 1 - Completion of practical skills (PAGs) to meet practical endorsement Revision for external exams (paper 1: module 1, 2, 3, 5 paper 2 module 1, 2, 4 6; paper 3 unified chemistry – all content)
A Level Physics Year 12	 Module 1: Development of practical skills in Physics (PAGs) Module 2: Foundations in Physics – Topics including- Physical quantities and Making measurements and analysing data; Nature of quantities taught throughout Module 3 Module 3: Forces and motion; topics including Motion; Forces in action; Work, energy and power; Materials; Newton's laws of motion and momentum 	 Module 1: Development of practical skills in Physics (PAGs) Module 4: Electrons, waves and photons – topics including Charge and current; Energy, power and resistance; Electrical circuits and Waves; 	 Module 1: Development of practical skills in Physics (PAGs) Module 4: Electrons, waves and photons continued including Quantum physics Revision of Modules 1, 2, 3 and 4 (Year 12 content) – for internal assessments Module 5: – Newtonian world and astrophysics topics including Thermal Physics (Year 13 content)

Physics	
A Level	Year 13

- Module 1: Further development of practical skills in Physics (PAGs)
- Module 5 –Newtonian world and astrophysics including Circular Motion; Oscillations and Gravitational fields
- Module 6- Particles and medical physics including Capacitors and Electric fields
- Module 1: Further development of practical skills in Physics (PAGs)
- Module 5 Newtonian world and astrophysics including Astrophysics and cosmology
- Module 6- Particles and medical physics
 Electric fields (finish); Magnetic fields;
 Nuclear and particle physics; Nuclear and particle physics; Medical Imaging
- Revision for mock exams (paper 1: module 1, 2, 3, 5 paper 2 module 1, 2, 4 6; paper 3 unified chemistry – all content)

- Module 1 Completion of practical skills (PAGs) to meet practical endorsement
- Revision for external exams
- (paper 1: module 1, 2, 3, 5 paper 2 module 1, 2, 4 6; paper 3 unified chemistry all content)