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| **Year 11 Curriculum Overview [2023-2024]** **Science – Combined Science**  |
|  **Autumn Term** | **Knowledge & Understanding** | **Literacy Skills****Opportunities for****developing** **literacy skills** | **Employability Skills****[if any]** | **Assessment Opportunities** |
| **Composites** | **Components****[KEY concepts & subject specific vocab]** | **Formal Retrieval****[if any]** |
| **HT1** | B4 Bioenergetics | * Photosynthesis
* Respiration
* Metabolism
 | Do Now task- Plant transport (Year 7 Interdependence and cells)Review of respiration [aerobic and anaerobic and the effect of exercise] (Year 8 Keeping healthy)MCQ’s | OralWritingWrite a methodWrite a conclusionUse of Scientific language and practice keywordsExtract key points from texts | TeamworkProblem solvingPractical applicationsResearch ScientistSport scientist | FormativesSummativeMock Exams (GCSE Paper 1) |
| **HT1** | C4 Chemical Change | * Synthesis of Salts

Electrolysis | Do Now TaskChemical Reactivity (Year 8. Chemical reactions and the environment)MCQ’s | Write a methodWrite a conclusionUse of Scientific language and practice keywordsComprehension/Extended readingExtract key points from texts | TeamworkProblem solvingPractical applicationsOrganic/Inorganic ChemistChemical Engineer Lab TechnicianChemical Analyst | FormativesSummativeMock Exams (GCSE Paper 1) |
| **HT1** | C5 Energy changes | * Exothermic/Endothermic reaction
* Bond Energies
* Fuel Cells
 | Do Now TaskRates and Energetics (Year 7. Energy)MCQ’s | Write a methodWrite a conclusionUse of Scientific language and practice keywords Extract key points from texts Comprehension/Extended reading | TeamworkProblem solvingPractical applicationsOrganic/Inorganic ChemistChemical Engineer Environmental Chemist | FormativesSummativeMock Exams (GCSE Paper 1) |
| **HT2** | P5 Forces  | * Vector and scalar quantities
* Forces between objects and resultant forces
* Moments levers, gears, and equilibrium
* Centre of mass
* Parallelogram and resolution of forces
* Distance -time graphs
* Velocity and Acceleration
* Velocity time graphs
* Analysing motion graphs
* Force and acceleration
* Weight and terminal velocity
* Forces and braking
* Momentum
* Using the conservation of momentum
* Impact forces and motion safety
* Forces and elasticity
* Pressure and surfaces
* Pressure in a liquid
* Atmospheric pressure
* Upthrust and floatation
 | Do Now TaskForces and Motion (Year 7. Forces)MCQ’s  | Write a methodWrite a conclusionUse of Scientific language and practice keywordsComprehension/Extended readingExtract key points from texts Identify and construct questionsPropose predictionsPlan experimentsRecord and analyse dataCommunicate information and ideas | Logical workingsProblem solvingAnalytical skillsTeamworkProblem solvingPractical applicationsIndustry  | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **HT2** | B5Homeostasis and Response  | * Introduction to homeostasis
* Nervous system - reflex arc
* Eye, brain and body temperature.
* Endocrine system – blood glucose and the menstrual cycle.
* Kidney and plant hormones
 | Do Now task- Reproduction (Year 7. Reproduction and variation)Assessment- MCQ’s  | OralWritingWrite a methodWrite a conclusionUse of Scientific language and practice keywordsExtract key points from texts  | TeamworkProblem solvingPractical applicationsNeurologyDoctor | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **HT2** | C6 Rates of Reaction  | * Factors affecting rates of reactions
* Equilibrium
* Industrial Applications of Equilibrium
 | Do Now TaskChemical reactions (Year 8 Chemical reactions and the environment)Assessment- MCQ’s | Write a methodWrite a conclusionUse of Scientific language and practice keywordsComprehension/Extended readingExtract key points from texts | TeamworkProblem solvingPractical applicationsChemical EngineerOrganic ChemistEnvironmental Chemist | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **Year 11 Curriculum Overview [2023-2024]****Science – Combined Science** |
| **Spring****Term** | **Knowledge & Understanding** | **Literacy Skills****Opportunities for****developing** **literacy skills** | **Employability Skills****[if any]** | **Assessment Opportunities** |
| **Composites** | **Components****[KEY concepts & subject specific vocab]** | **Formal Retrieval****[if any]** |
| **HT3** | P6Waves | * The nature of waves
* Properties of waves
* Reflection and refraction
* Sound waves and ultrasound

Seismic waves* The EM spectrum
* Longwave EM spectrum waves
* Shortwave EM Spectrum Waves
* Communication using waves
* Reflection and refraction of light
* Colour

Lenses | Do Now TaskWaves (Year 8. Waves and pressure)MCQ’s | Write a methodWrite a conclusionUse of Scientific language and practice keywordsComprehension/Extended readingExtract key points from texts Identify and construct questionsPropose predictionsPlan experimentsRecord and analyse dataCommunicate information and ideas | Logical workingsProblem solvingAnalytical skillsTeamworkProblem solvingPractical applicationsSonographer | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **HT3** | B6Inheritance, variation and evolution | * Meiosis and asexual reproduction
* DNA and inheritance
* Cloning
* Variation, selective breeding and genetic engineering.
* DNA structure and protein synthesis.
* Genetic and evolution theories.
 | Do Now task- Reproduction (Year 7. Reproduction and variation)Cell division (B1)Assessment- MCQ’s  | OralWritingUse of Scientific language and practice keywordsExtract key points from texts | TeamworkProblem solvingPractical applicationsGenetics Councillor | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **HT3** | C7Organic Chemistry | * Chemistry of Hydrocarbons
* Processing Crude Oil
* Uses of Crude oil
* Reactions of organic compounds and polymers
 | Do Now Task-Bonding, structures and properties of matter (Year 8 The periodic table and materials)MCQ’s | Write a methodWrite a conclusionUse of Scientific language and practice keywordsExtract key points from texts | TeamworkProblem solvingPractical applicationsOrganic ChemistEnvironmental Chemist | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **HT4** | P7Electromagnetism | * Magnetic fields and electromagnets
* The motor effect
* The generator effect
* AC generators
* Transformers
* Transformers in action
 | Do Now Task-Electricity (Year 8 electricity and magnetism) MCQ’s | Write a methodWrite a conclusionUse of Scientific language and practice keywordsComprehension/Extended readingExtract key points from texts Identify and construct questionsPropose predictionsPlan experimentsRecord and analyse dataCommunicate information and ideas | Logical workingsProblem solvingAnalytical skillsTeamworkProblem solvingPractical applicationsCartographer  | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **HT4** | B7Ecology | * Adaptations, Interdependence and Competition
* Rates of decomposition and use of bio gas.
* Distribution of species in an ecosystem.
* Biodiversity and the Effect of Human Interaction on Ecosystems
* Food security, evaluating supply and demand
 | Do Now task- Interdependence, adaptations and competition (Year 7. Interdependence and cells)MCQ’s  | OralWritingWrite a methodWrite a conclusionUse of Scientific language and practice keywords | TeamworkProblem solvingPractical applicationsZoologistEcologist | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **HT4** | C8Chemical Analysis | * Chromatography
* Tests for gases
* Formulations
* Identification of ions
 | Do Now Task-Particles (Year 7. Particles)Chemical Reactions (Year 7. Types of reactions)Atomic structure and the periodic table (Year 8. The periodic table and materials)MCQ’s | Write a methodWrite a conclusionUse of Scientific language and practice keywordsExtract key points from texts | TeamworkProblem solvingPractical applicationsChemical EngineerChemical AnalystForensic Scientist | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **Year 11 Curriculum Overview [2023-2024]****Science – Combined Science** |
| **Summer** **Term** | **Knowledge & Understanding** | **Literacy Skills****Opportunities for****developing** **literacy skills** | **Employability Skills****[if any]** | **Assessment Opportunities** |
| **Composites** | **Components****[KEY concepts & subject specific vocab]** | **Formal Retrieval****[if any]** |
| **HT5** | C9 Chemistry of the atmosphere | * The Earth’s atmosphere
* Greenhouse effect and climate change
 | Do Now task-Materials (Year 8 Chemical reactions and the environment)MCQ’s | Write a conclusionUse of Scientific language and practice keywordsComprehension/Extended readingExtract key points from texts | TeamworkProblem solvingPractical applicationsAtmospheric Chemist | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |
| **HT5** | C10 Using Resources  | * Materials from the Earth’s crust
* Potable water and treatment of waste water
* HT only - Phytomining
 | Do Now task-Materials (Year 8 Chemical reactions and the environment)Reactivity (Year 8 Chemical reaction and the environment, C1) MCQ’s | Write a methodWrite a conclusionUse of Scientific language and practice keywordsComprehension/Extended readingExtract key points from texts | TeamworkProblem solvingPractical applicationsChemical Engineer | FormativesSummativeMock Exams – part paper (GCSE Paper 2) |