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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 | Oral  Writing  Write a method  Write a conclusion  Use of Scientific language and practice keywords  Extract key points from texts | Teamwork  Problem solving  Practical applications  Research Scientist  Sport scientist | Formatives  Summative  Mock Exams (GCSE Paper 1) |
| **HT1** | C4  Chemical Change | * Synthesis of Salts   Electrolysis | Do Now Task  Chemical Reactivity (Year 8. Chemical reactions and the environment)  MCQ’s | Write a method  Write a conclusion  Use of Scientific language and practice keywords  Comprehension/Extended reading  Extract key points from texts | Teamwork  Problem solving  Practical applications  Organic/Inorganic Chemist  Chemical Engineer  Lab Technician  Chemical Analyst | Formatives  Summative  Mock Exams (GCSE Paper 1) |
| **HT1** | C5  Energy changes | * Exothermic/Endothermic reaction * Bond Energies * Fuel Cells | Do Now Task  Rates and Energetics (Year 7. Energy)  MCQ’s | Write a method  Write a conclusion  Use of Scientific language and practice keywords  Extract key points from texts Comprehension/Extended reading | Teamwork  Problem solving  Practical applications  Organic/Inorganic Chemist  Chemical Engineer  Environmental Chemist | Formatives  Summative  Mock 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 Task  Forces and Motion (Year 7. Forces)  MCQ’s | Write a method  Write a conclusion  Use of Scientific language and practice keywords  Comprehension/Extended reading  Extract key points from texts  Identify and construct questions  Propose predictions  Plan experiments  Record and analyse data  Communicate information and ideas | Logical workings  Problem solving  Analytical skills  Teamwork  Problem solving  Practical applications  Industry | Formatives  Summative  Mock Exams – part paper (GCSE Paper 2) |
| **HT2** | B5  Homeostasis 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 | Oral  Writing  Write a method  Write a conclusion  Use of Scientific language and practice keywords  Extract key points from texts | Teamwork  Problem solving  Practical applications  Neurology  Doctor | Formatives  Summative  Mock Exams – part paper (GCSE Paper 2) |
| **HT2** | C6  Rates of Reaction | * Factors affecting rates of reactions * Equilibrium * Industrial Applications of Equilibrium | Do Now Task  Chemical reactions (Year 8 Chemical reactions and the environment)  Assessment-  MCQ’s | Write a method  Write a conclusion  Use of Scientific language and practice keywords  Comprehension/Extended reading  Extract key points from texts | Teamwork  Problem solving  Practical applications  Chemical Engineer  Organic Chemist  Environmental Chemist | Formatives  Summative  Mock 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** | P6  Waves | * 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 Task  Waves (Year 8. Waves and pressure)  MCQ’s | Write a method  Write a conclusion  Use of Scientific language and practice keywords  Comprehension/Extended reading  Extract key points from texts  Identify and construct questions  Propose predictions  Plan experiments  Record and analyse data  Communicate information and ideas | Logical workings  Problem solving  Analytical skills  Teamwork  Problem solving  Practical applications  Sonographer | Formatives  Summative  Mock Exams – part paper (GCSE Paper 2) |
| **HT3** | B6  Inheritance, 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 | Oral  Writing  Use of Scientific language and practice keywords  Extract key points from texts | Teamwork  Problem solving  Practical applications  Genetics Councillor | Formatives  Summative  Mock Exams – part paper (GCSE Paper 2) |
| **HT3** | C7  Organic 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 method  Write a conclusion  Use of Scientific language and practice keywords  Extract key points from texts | Teamwork  Problem solving  Practical applications  Organic Chemist  Environmental Chemist | Formatives  Summative  Mock Exams – part paper (GCSE Paper 2) |
| **HT4** | P7  Electromagnetism | * 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 method  Write a conclusion  Use of Scientific language and practice keywords  Comprehension/Extended reading  Extract key points from texts  Identify and construct questions  Propose predictions  Plan experiments  Record and analyse data  Communicate information and ideas | Logical workings  Problem solving  Analytical skills  Teamwork  Problem solving  Practical applications  Cartographer | Formatives  Summative  Mock Exams – part paper (GCSE Paper 2) |
| **HT4** | B7  Ecology | * 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 | Oral  Writing  Write a method  Write a conclusion  Use of Scientific language and practice keywords | Teamwork  Problem solving  Practical applications  Zoologist  Ecologist | Formatives  Summative  Mock Exams – part paper (GCSE Paper 2) |
| **HT4** | C8  Chemical 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 method  Write a conclusion  Use of Scientific language and practice keywords  Extract key points from texts | Teamwork  Problem solving  Practical applications  Chemical Engineer  Chemical Analyst  Forensic Scientist | Formatives  Summative  Mock 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 conclusion  Use of Scientific language and practice keywords  Comprehension/Extended reading  Extract key points from texts | Teamwork  Problem solving  Practical applications  Atmospheric Chemist | Formatives  Summative  Mock 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 method  Write a conclusion  Use of Scientific language and practice keywords  Comprehension/Extended reading  Extract key points from texts | Teamwork  Problem solving  Practical applications  Chemical Engineer | Formatives  Summative  Mock Exams – part paper (GCSE Paper 2) |