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| **Year 10 Curriculum Overview [2024-2025]**  **Science – Separate Sciences** | | | | | | |
| **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** | **C1 Atomic Structure and the Periodic Table** | * Atoms, Elements and compounds * Mixtures * Atomic Theories * Atom Structure * Relative atomic mass * Electron Configuration * The Periodic Table * Development of the Periodic Table * Metals and Non-Metals * Group 0 * Group 1 * Group 7 * Transition metals | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Atomic Research * Chemist * Engineer | Formative  Assessment  Summative  Assessment |
| **HT12** | **P1 Energy** | * Energy Stores and Systems * Changes in energy (Gravitational Potential Energy Kinetic Energy Elastic Energy) * Energy changes in systems * Power * Energy transfers in a system * Efficiency * National and global energy resources | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Sport Scientist * National Grid * Energy Conservationist | Formative  Assessment  Summative  Assessment |
| **HT2** | **B2 Organisation** | * Principles of Organisation * Digestive System * The Heart and blood vessels * Blood * CHD * Health issues * Effect of lifestyle on some non-communicable diseases * Cancer * Plant Tissues * Plant organ system | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Doctor * Nurse * Food development * Counsellor | Formative  Assessment  Summative  Assessment |
| **HT2** | **C2 Bonding, Structure, and the Properties of Matter** | * Chemical bonds * Ionic Bonding * Ionic Compounds and their Properties * Covalent Bonding * Small Molecules and their properties * Giant Covalent Structures – Diamond, graphite * Fullerenes and Graphene * Metallic Bonding * Properties of metals and alloys * Metals as conductors * States of Matter * State symbols * Polymers * Nanoparticles | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Research Scientist * Engineer * Lecturer * Nanotechnologist | Formative  Assessment  Summative  Assessment |
| **HT2/3** | **P2 Electricity and Magnetism** | * Circuit Symbols and Diagrams * Electrical Charge and current * Current, resistance and potential difference * Resistors * Series and parallel circuits * Alternating and Direct potential difference * Mains Electricity * Power * Energy Transfers in everyday appliances * The National Grid * Static charge * Electric fields | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Electrician * National Grid * Computer Hardware design * Electrical engineer * City planning * Lighting technician on film sets. | Formative  Assessment  Summative  Assessment |
| **Year 10 Curriculum Overview [2024-2025]**  **Science – Separate Sciences** | | | | | | |
| **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]** |
| **HT3/4** | **B3 Infection and Response** | * Communicable Diseases * Viral Diseases * Bacterial Diseases * Fungal Diseases * Protist diseases * Human defence systems * Vaccination * Antibiotics and painkillers * Discovery and development of drugs * Producing monoclonal antibodies * Uses of monoclonal antibodies * Detection and identification of plant diseases * Plant defence responses | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Immunology * Medicine * Epidemiology * Pharmacist * Research * Science Reporter/journalist | Formative  Assessment  Summative  Assessment |
| **HT4/5** | **C3 Quantitative Chemistry** | * Conservation of mass and balanced chemical equations * Relative formula mass * Mass changes when a reactant or product is a gas * Chemical measurements * Moles * Amounts of substances in equations * Using moles to balance equations * Limiting reactants * Concentrations of solutions * Percentage yield * Atom Economy * Using concentrations of solutions * Use of amount of substance in relation to volumes of gases | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Analytical scientist * Pharmacist * Academic researcher * Pharmacologist * Laboratory technician * Toxicologist | Formative  Assessment  Summative  Assessment |
| **Year 10 Curriculum Overview [2024-2025]**  **Science – Separate Sciences** | | | | | | |
| **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** | **P3 Particle Model** | * Density of materials * Changes of state * Internal energy * Temperature changes in a system and specific heat capacity * Changes of state and specific latent heat * Particle motion in gases * Pressure in gases * Increasing the pressure of a gas | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Food technologist * Engineer * Pilot * Submariner. | Formative  Assessment  Summative  Assessment |
| **HT5/6** | **B4**  **Bioenergetics** | * Photosynthetic reaction * Rate of photosynthesis * Uses of glucose from photosynthesis * Aerobic and anaerobic respiration * Response to exercise * Metabolism | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Forestry * Horticulture * Food Scientists * Conservation Scientist * Environmental Engineer * Soil Scientists | Formative  Assessment  Summative  Assessment |
| **HT6** | **C4 & C5**  **Chemical Changes and Energy Changes** | * Metal oxides * The reactivity series * Extraction of metals and reduction * Oxidation and reduction in terms of electrons * Reactions of acids with metals * Neutralisation of acids and salt production * Soluble salts * The pH scale and neutralisation * Titrations * Strong and weak acids * The process of electrolysis * Electrolysis of molten ionic compounds * Using electrolysis to extract metals * Electrolysis of aqueous solutions * Representation of reactions at electrodes as half equations * Energy Transfer during exothermic and endothermic reactions * Reaction profiles * The energy change of reactions * Cells and batteries * Fuel cells | Do Now  MCQ x2 | * Keyword and definition * Subject language [Speak like a Scientist] * Inclusive questioning * Writing a method * Write like a Scientist * Comprehension/Extended reading * Extract key points from texts | Personal Skills   * Teamwork * Problem solving * Practical applications   Scientific Careers   * Chemist * Chemical metallurgist * Chemical synthesis | Formative  Assessment  Summative  Assessment |