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| **Year 10 Curriculum Overview [2023-2024]** **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 NowMCQ 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
 | FormativeAssessmentSummativeAssessment |
| **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 NowMCQ 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
 | FormativeAssessmentSummativeAssessment |
| **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 NowMCQ 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
 | FormativeAssessmentSummativeAssessment |
| **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 NowMCQ 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
 | FormativeAssessmentSummativeAssessment |
| **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 NowMCQ 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.
 | FormativeAssessmentSummativeAssessment |
| **Year 10 Curriculum Overview [2023-2024]****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 NowMCQ 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
 | FormativeAssessmentSummativeAssessment |
| **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 NowMCQ 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
 | FormativeAssessmentSummativeAssessment |
| **Year 10 Curriculum Overview [2023-2024]** **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 NowMCQ 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.
 | FormativeAssessmentSummativeAssessment |
| **HT5/6** | **B4** **Bioenergetics** | * Photosynthetic reaction
* Rate of photosynthesis
* Uses of glucose from photosynthesis
* Aerobic and anaerobic respiration
* Response to exercise
* Metabolism
 | Do NowMCQ 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
 | FormativeAssessmentSummativeAssessment |
| **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 NowMCQ 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
 | FormativeAssessmentSummativeAssessment |