



Curriculum Overview: Combined Science Year group 10

What your child will learn each half term

This overview shows the key topics, skills, and knowledge your child will be learning in **Combined Science** in **Year 10**. It helps families understand what's being taught, how it builds on previous learning, and how you can support your child at home.

- **How science works skills**

- Use and rearrange equations confidently in Chemistry and Physics topics.
- Link graphs and data to scientific models, drawing conclusions from evidence.
- Develop skills in planning, carrying out, and analysing required practicals.
- Apply practical skills: selecting equipment, measuring accurately, and identifying variables to control in an investigation.
- Communicate scientific ideas clearly in extended written answers, using correct terminology.

- **What we are learning:** The topic or focus for the half term.
- **Key knowledge & skills:** What students should understand and be able to do.
- **How we assess learning:** knowledge checks, practical tasks, written responses and formal assessments.
- **Key words to know:** Vocabulary students will learn and use.

Half term	What we are learning	Key knowledge and skills	How we will assess learning in this unit	Homework	Key vocabulary for this unit
HT 1 and 2	B1a Cell biology B1b Cell division and stem cells B2a Organisation and the digestive system B2b Organising animals and plants C1a Atomic Review C1b Periodic Table C2 Bonding and Structure P1a Conservation and dissipation P1b Energy transfers by heating recap	Cell biology (B1a): structure and function of plant/animal cells, use of microscopes, transport by diffusion, osmosis, and active transport. Cell division & stem cells (B1b): mitosis, cell cycle, stem cells in medicine, ethical considerations. Organisation & digestive system (B2a): structure of digestive system, role of enzymes, effect of temperature and pH. Organising animals & plants (B2b): structure of the heart, blood vessels, blood components, transport in plants (xylem and phloem). Atomic review (C1a): structure of the atom, protons, neutrons, electrons, isotopes, ions. Periodic table (C1b): groups and periods, properties of Group 1, 7, and 0, Mendeleev's contribution. Bonding & structure (C2): ionic, covalent, metallic bonding, properties linked to structure, giant lattices.	Continuous formative assessment in lessons. End of topic tests. Question level analysis and feedback. Required practical assessment booklets.	Homework is set on a Monday and is due the following Monday. Homework will be set online using a website 'Educake' which pupils will receive their login details for.	Biology: cell, nucleus, cytoplasm, mitochondria, chloroplast, prokaryote, eukaryote, magnification, diffusion, osmosis, active transport, mitosis, stem cell, enzyme, substrate, bile, artery, vein, capillary, plasma, red blood cell, xylem, phloem. Chemistry: atom, proton, neutron, electron, isotope, ion, periodic table, group, period, alkali metal, halogen, noble gas, ionic bond, covalent

	P1c Energy resources P2a Electric Circuits	Conservation & dissipation of energy (P1a): law of conservation of energy, energy stores and transfers, efficiency. Energy transfers by heating (P1b): conduction, convection, radiation, insulation. Energy resources (P1c): renewable vs. non-renewable, advantages and disadvantages, environmental impact. Electric circuits (P2a): current, potential difference, resistance, series and parallel circuits, Ohm's Law.			bond, metallic bond, lattice, conductivity. Physics: energy store, conservation, dissipation, efficiency, conduction, convection, radiation, insulation, renewable, non-renewable, current, voltage, resistance, Ohm's law, series circuit, parallel circuit, power.
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