

# Combined Science Curriculum and Assessment Map

Term  
Date  
Week

## Year 7

## Year 8

## Year 9

N.B. Units in these year groups are taught on rotation to avoid clashes of practical equipment and in year 9 to also facilitate specialist teaching. This means they may not be delivered exactly as indicated on the calendar below. We endeavour to ensure delivery is within a half term of the indicated dates. Below is an exemplar rotation and includes all units, content and assessments.

Term	Date	Week	Year 7	Year 8	Year 9	Biology	
Autumn A	05-Sep	1	<b>Forces which includes:</b> What forces are, Newtons, types of force, Forces at a distance and balanced and unbalanced	<b>The periodic table which includes:</b> Metals and non-metals, groups and periods, elements of groups 1, 7 and 0	<b>Wave properties and the electromagnetic spectrum:</b> The nature of waves, longitudinal and transverse, wave properties including amplitude, frequency and wavelength, the wave equation, reflection and refraction, total internal reflection,	<b>Atomic structure and the periodic table:</b> The atom Electron configuration Covalent bonding Ionic bonding	
	12-Sep	2					
	19-Sep	1	<b>Particles and their behaviour:</b> The particle model, states of matter, some changes of state, diffusion and gas pressure,	<b>Metals and acids:</b> Acids and metals, metals and oxygen, metals and water, displacement reactions, ceramics, <b>assessment</b>	the EM spectrum. Uses of the EM spectrum, ionisation, effects of ionisation, safety, and communications <b>Waves and EM spectrum assessment</b>		Acids and alkalis Preparation of a salt <b>Atomic structure assessment</b>
	26-Sep	2					
	03-Oct	1					
	10-Oct	2					
17-Oct	1	October Half-Term	October Half-Term	October Half-Term	October Half-Term		
Autumn B	24-Oct		<b>Reactions:</b> chemical reactions, word equations, burning fuels, thermal decomposition, conservation of mass, endothermic and exothermic	<b>Energy:</b> Food and fuels, energy adds up, temperature, energy transfer: particles, Energy transfer: radiation, Energy resources, power, work, energy and	the EM spectrum. Uses of the EM spectrum, ionisation, effects of ionisation, safety, and communications <b>Waves and EM spectrum assessment</b>	Forces year 9 unit: vector and scalar units, forces between objects, contact and non-contact forces, centres of mass, weight mass and volume,	
	31-Oct	2					
	07-Nov	1	<b>Cells:</b> Observing cells, plant and animal cells, specialised cells, movement of substances, unicellular organisms <b>Forces, cells and reactions assessment</b>	<b>Motion and pressure:</b> Speed, motion graphs, pressure in liquids, pressure in gases, pressure on solids, turning forces <b>Energy, motion and pressure assessment</b>	<b>Cells and transport part 1 and non-communicable diseases:</b> the microscope, animal and plant cells, eukaryotic and prokaryotic cells,		Organ systems part 2 (plants only): photosynthesis, leaf structure, vascular tissue (xylem and phloem), translocation, stomata and transpiration <b>organ systems part 2 assessment</b>
	14-Nov	2					
	21-Nov	1					
	28-Nov	2					
05-Dec	1	Christmas Break	Christmas Break	Christmas Break	Christmas Break		
12-Dec	2	<b>Body systems:</b> Levels of organisation, gas exchange, breathing, skeleton, movement, joints and muscles	<b>Ecosystem processes:</b> Photosynthesis, leaves, plant minerals, chemosynthesis, aerobic respiration, anaerobic respiration, food chains, food web, disruption to food chain and food webs and ecosystems <b>Ecosystem processes assessment</b>	specialisation in animal and plant cells, non-communicable diseases, cancer, smoking and the risk of disease, diet, exercise and disease, alcohol and other carcinogens	the link between weight and mass and w-mg, gravity, freefall and terminal velocity, interacting pairs of forces, Newton's first and third laws, work done		
19-Dec	1						
Spring A	26-Dec		<b>Sound:</b> Wave, vibrations and energy transfer, loudness and pitch, detecting <b>assessment</b>	<b>Separation techniques:</b> Mixtures, solutions, solubility, filtration,	Revision period for the year 9 exam	Communicable diseases: Types of Pathogens 1. Bacteria <b>Preventing communicable diseases:</b> vaccination, antibiotics, painkillers, <b>communicable diseases assessment</b>	
	02-Jan	1					
	09-Jan	2	<b>The Earth:</b> The Earth and its atmosphere, sedimentary rocks, igneous rocks, metamorphic rocks, the rock cycle, the <b>assessment</b>	Year 9 exam	Year 9 forces assessment		
	16-Jan	1					
	23-Jan	2					
	30-Jan	1					
06-Feb	2	February Half-term	February Half-term	February Half-term	February Half-term		
Spring B	13-Feb		<b>Space:</b> The night sky, the solar system, the Earth, the Moon, phases of the Moon and eclipses	<b>The Earth's atmosphere and resources:</b> History of the atmosphere Evolving atmosphere Greenhouse gases	Revision period for the year 9 exam	Photosynthesis: photosynthesis, the rate of photosynthesis, how plants use <b>Respiration:</b> Aerobic respiration, Response to exercise, Anaerobic respiration, Metabolism, The liver (H tier <b>assessment</b> )	
	20-Feb	1					
	27-Feb	2	<b>Adaptation and inheritance:</b> Competition and adaptation, adapting to change, variation, inheritance, Natural selection and extinction <b>Adaptation and inheritance assessment</b>	Year 9 exam	Year 9 exam		
	06-Mar	1					
	13-Mar	2					
	20-Mar	1					
27-Mar	2	Easter Break	Easter Break	Easter Break	Easter Break		
Summer A	03-Apr		<b>Acids and alkalis:</b> Acids and alkalis, Ph and indicators, neutralisation, making salts	<b>Reproduction:</b> Adolescence, reproductive systems, fertilisation and implantation, development of a foetus, the menstrual <b>assessment</b>	Enrichment week	Revision for year 10 exams	
	10-Apr						
	17-Apr	1	<b>Elements, atoms and compounds:</b> elements, atoms, word equations and	<b>Adaptation and inheritance assessment</b>	<b>The Earth's atmosphere and resources:</b> History of the atmosphere Evolving atmosphere Greenhouse gases		
	24-Apr	2					
	01-May	1					
	08-May	2					
15-May	1	May Half-term	May Half-term	May Half-term	May Half-term		
22-May	2	Enrichment week	Enrichment week	Enrichment week	Enrichment week		
29-May							
Summer B	05-Jun	0	<b>Light:</b> Light, reflection, refraction, the camera and the eye, colour,	<b>Electricity and magnetism:</b> Static electricity, circuits and current, potential difference, series and parallel circuits, <b>Electricity and magnetism assessment</b>	Finite and renewable resources Treating waste water Potable water	<b>Organisms and digestion assessment</b>	
	12-Jun	1					
	19-Jun	2	<b>Health and lifestyle:</b> Nutrients, food tests, unhealthy diet, digestive system, bacteria and enzymes in digestion, drugs, <b>Light, elements and health assessment</b>	<b>Revision and end of KS3 assessment</b> <b>Feedback on the end of year assessment</b>	Extracting metals from ores Life Cycle assessments <b>assessment</b>		Cardiovascular System Heart Treatments Respiratory System Mitosis Cell differentiation Stem Cells
	26-Jun	1					
	03-Jul	2					
	10-Jul	1					
17-Jul	2	Enrichment week	Enrichment week	Enrichment week	Enrichment week		

## Year 10

### Chemistry

<b>Atomic Structure and Periodic Table which includes:</b> History of the atom, development of the periodic table, formation of covalent and ionic bonds, balancing chemical equations, group 1 and group 7 trends. <b>Atomic structure and Periodic Table assessment</b>	<b>Forces Year 10 unit part 1 which includes:</b> Resultant forces, The parallelogram of forces (H tier only), Resolution of forces (H tier only), acceleration, SUVAT equations, Newton's laws of motion this time including the second law,
October Half-Term	October Half-Term
<b>Structure and Bonding including:</b> ionic bonding, covalent bonding, simple and giant covalent structures, metallic bonding, alloys, carbon allotropes including diamond, graphite and fullerenes <b>Structure and Bonding Assessment</b>	<b>Forces mid-unit assessment</b>
	<b>Forces Year 10 unit part 2 which includes:</b> Forces and elasticity and Hooke's law and equation, elastic potential energy, forces and braking, momentum (H tier only),
Christmas Break	Christmas Break
<b>Chemical Calculations including:</b> calculating relative atomic mass, moles and concentration calculations. Reacting masses (Higher Tier only) <b>Chemical Calculations Assessment</b>	<b>Forces end of unit assessment</b>
	<b>Energy which includes:</b> Changing energy stores, conservation of energy, Work done, types of energy including gravitational and kinetic, energy equations, dissipation of energy,
February Half-term	February Half-term
<b>Chemical Changes including:</b> Reactions of metals with acids, reactivity series, procedure for making salts, neutralisation reactions, strong and weak acids (higher tier only)) <b>Chemical Changes Assessment</b>	<b>Energy continues:</b> Heating an insulating buildings, specific heat capacity, Global and national energy demands, Fossil fuels, renewable energy types, environmental issues, future energy supplies, some <b>Energy assessment</b>
Easter Break	Easter Break
Revision for year 10 exams	Revision for year 10 exams
Year 10 Exams	
<b>Electrolysis including:</b> Products of electrolysis and solutions (Higher tier only), electrolysis of aluminium	<b>Electric circuits including:</b> Static electricity and electric fields, Circuit symbols, current, charge, potential
May Half-term	May Half-term
<b>Energy Changes including:</b> Exothermic and endothermic reactions, investigating temperature changes and calculating bond energies (higher tier only) <b>Electrolysis and Energy Changes Assessment</b>	Enrichment week
	<b>Electric circuits including:</b> Series and parallel circuits, Ohm's law, Electrical equations, component characteristics for lamps, fixed resistors and diodes, Cables, plugs, fuses and earth wires, ac and dc, <b>Electricity assessment</b>

## Year 11

### Biology

### Chemistry

### Physics

<b>Reproduction:</b> types of reproduction, cell division and reproduction, DNA and the genome, inheritance, inherited disorders and screening for them	<b>Rates of Reaction including:</b> factors and procedures for measuring the rate of a reaction, dynamic equilibrium, interpreting graphs and calculating gradients. <b>Rates of Reaction assessment</b>	<b>Molecules and matter including:</b> density, states of matter, changes of state, internal energy, specific latent heat, gas pressure and temperature
by natural selection, selective breeding, genetic engineering, ethics of genetic technologies	<b>Revision for the mock exams</b>	<b>Revision for the mock exams</b>
October Half-Term	October Half-Term	October Half-Term
<b>Revision for the mock exams</b>	<b>Revision for the mock exams</b>	<b>Revision for the mock exams</b>
Mock Exams		
<b>Genetics and evolution:</b> evidence for evolution, fossils and extinction, antibiotic resistant bacteria and classification and new classification systems <b>assessment</b>	<b>Crude oil and fuel including:</b> properties of alkanes, alkenes and distillation of crude oil. <b>Crude oil and fuel assessment</b>	<b>Radioactivity including:</b> atomic structure, discovery of the nucleus and subatomic particles, isotopes, changes in the nucleus, alpha, beta and gamma decay, half life
Christmas Break	Christmas Break	Christmas Break
<b>Adaptation, interdependence and competition:</b> communities, environment, distribution and abundance, competition in animals and in plants, Adaptation in animals and plants and survival	<b>Chemical Analysis including:</b> Tests for gases, chromatography, formulations <b>Assessment: Data Analysis</b>	<b>assessment</b>
		<b>Electromagnetism including:</b> Magnetic fields, electromagnets, magnetic fields and current, motors, the motor effect, Flemings left hand rule,
February Half-term	February Half-term	February Half-term
<b>Biodiversity and ecosystems:</b> the human population explosion, land and water pollution, air pollution, deforestation and peat destruction, global warming, maintaining biodiversity <b>assessment</b>	<b>Review of the Earth's atmosphere and resources:</b> History of the atmosphere Evolving atmosphere, greenhouse gases, atmospheric Pollutants, Life cycle assessments, treating water	<b>assessment</b>
	<b>Revision for the GCSE exams</b>	<b>Revision for the GCSE exams</b>
Easter Break	Easter Break	Easter Break
Revision for the GCSE exams	Revision for the GCSE exams	Revision for the GCSE exams
External Exams		
May Half-term	May Half-term	May Half-term
External Exams		