Science (Single Award) (2017) (4SS0)
2-year course planner

This section contains a 2-year course planner for the **International GCSE Science (Single Award) (2017)** qualification. It follows the specification and scheme of work to cover each of the units.

The course planner summarises what can be covered in each term to enable completion of the content and preparation for assessment at the end of each year. It assumes that each year is split into 3 terms and that each week accounts for roughly 2 Guided Learning Hours over 60 weeks of teaching to give a total of roughly 120 hours for the Science (Single Award). How this time is divided up to cover the three sciences will vary from centre to centre, but this planner is based on dividing the total time into roughly three equal parts and interleaving the three disciplines throughout the years.

This is only a suggested course planner with suggested timings, and it does not need to be followed. You may decide to start teaching content earlier if you would like more time. You will find a more detailed lesson plan in the scheme of work document, which gives suggested teaching times for each unit. This is editable so that you can customise it to meet your own needs

Year	Term	Week	Topic/Sub-topic	Spec points/practicals
Chemistry				
1	1	1	<u>Section 1: Principles of chemistry</u> a) States of matter b) Elements, compounds and mixtures	1.1, 1.2, 1.3, 1.8, 1.9
1	1	2	b) Elements, compounds and mixtures	1.10, 1.11, 1.12, 1.13 *Practical: investigate paper chromatography using inks/food colourings*
1	1	3	c) Atomic structure d) The Periodic Table	1.14, 1.15, 1.16, 1.17, 1.18, 1.21
1	1	4	f) Ionic bonding	1.37, 1.38, 1.39, 1.41, 1.42
1	1	5	Consolidation & Assessment Feedback	
1	1	6	e) Chemical formulae, equations and calculations g) Covalent bonding	1.25, 1.26, 1.44, 1.47, 1.49
1	1	7	<u>Section 2: Inorganic chemistry</u> a) Group 1 (alkali metals) b) Group 7 (halogens)	2.1, 2.2, 2.3, 2.5, 2.6

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1	1	8	c) Gases in the atmosphere	2.9, 2.10, 2.11, 2.13, 2.14 *Practical: determine the approximate percentage by volume of oxygen in air using a metal or a non-metal*
1	1	9	d) Reactivity series	2.15, 2.17, 2.18, 2.19
1	1	10	e) Acids and alkalis Consolidation & assessment	2.28, 2.29, 2.30, 2.31, 2.32
1	1	11	Feedback	
Physics				
1	1	11	<u>Section 1: Forces and movement</u> a) Units b) Movement and position	1.1, 1.3, 1.4
1	2	1	b) Movement and position	1.5, 1.6, 1.7, 1.8, 1.9 *Practical: investigate the motion of everyday objects such as toy cars or tennis balls*
1	2	2	c) Forces and movement	1.11, 1.12, 1.16, 1.17, 1.18
1	2	3	c) Forces and movement <u>Section 2: Electricity</u> c) Current and voltage in circuits	1.19, 1.20, 2.12, 2.14, 2.16
1	2	4	a) Units c) Current and voltage in circuits	2.1, 2.8, 2.9, 2.10, 2.13, 2.19
1	2	5	b) Mains electricity Consolidation & assessment	2.4, 2.6
1	2	6	Feedback <u>Section 3: Waves</u> a) Units b) Properties of waves	3.1, 3.3, 3.4
1	2	7	b) Properties of waves c) The electromagnetic spectrum	3.5, 3.7, 3.10, 3.11, 3.12, 3.13
1	2	8	b) Properties of waves c) The electromagnetic spectrum d) Light and sound	3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.17 *Practical: investigate the refraction of light, using rectangular blocks, semicircular blocks and triangular prisms*
1	2	9	d) Light and sound <u>Section 4: Energy and energy transfers</u> a) Units b) Energy transfers	3.20, 3.21, 3.23, 4.1, 4.2, 4.3

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1	2	10	b) Energy transfers c) Work and power	4.4, 4.5, 4.11, 4.12, 4.13
1	3	1	c) Work and power	4.14, 4.15, 4.16, 4.17
1	3	2	Consolidation & assessment Feedback	
Biology				
1	3	3	<u>Section 1: The nature and variety of living organisms</u> a) Characteristics of living organisms b) Variety of living organisms	1.1, 1.2, 1.3
		4	b) Variety of living organisms <u>Section 2: Structures and functions in living organisms</u> a) Levels of organisation b) Cell structure	1.4, 2.1, 2.2, 2.3, 2.4
1	3	5	c) Biological molecules	2.7, 2.8, 2.9 *Practical: investigate food samples for the presence of glucose, starch, protein and fat*
1	3	6	c) Biological molecules d) Movement of substances into and out of cells	2.10, 2.11, 2.12, 2.13, 2.15 *Practical: investigate how enzyme activity can be affected by changes in temperature*
1	3	7	d) Movement of substances into and out of cells Consolidation & assessment	2.16
1	3	8	Feedback e) Nutrition	2.18, 2.19, 2.20
1	3	9	e) Nutrition	2.21, 2.23 *Practical: investigate photosynthesis, showing the evolution of oxygen from a water plant, the production of starch and the requirements of light, carbon dioxide and chlorophyll*
1	3	10	e) Nutrition f) Respiration	2.27, 2.29, 2.34, 2.35, 2.36, 2.37, 2.38
2	1	1	g) Gas exchange h) Transport	2.46, 2.47, 2.48, 2.51, 2.52, 2.59, 2.60, 2.61
2	1	2	h) Transport	2.62, 2.65, 2.68, 2.69

Year	Term	Week	Topic/Sub-topic	Spec points/practicals
2	1	3	Consolidation & assessment Feedback	
			Chemistry	
2	1	4	**Section 2: Inorganic chemistry** f) Chemical tests	2.44, 2.45, 2.46
2	1	5	f) Chemical tests **Section 3: Physical chemistry** a) Energetics	2.48, 2.49, 3.1, 3.2, 3.3
2	1	6	a) Energetics	3.2, 3.3, 3.8 *Practical: investigate temperature changes accompanying some of the following types of change:* • *Salts dissolving in water* • *Neutralisation reactions* • *Displacement reactions* • *Combustion reactions*
2	1	7	b) Rates of reaction	3.9, 3.10, 3.12, 3.15 *Practical: investigate the effect of changing the surface area of marble chips and of changing the concentration of hydrochloric acid on the rate of reaction between marble chips and dilute hydrochloric acid*
2	1	8	**Section 4: Organic chemistry** a) Introduction b) Crude oil c) Alkanes	4.1, 4.2, 4.7, 4.9, 4.10, 4.19, 4.20, 4.21
2	1	9	a) Introduction b) Crude oil d) Alkenes	4.2, 4.11, 4.12, 4.13, 4.23, 4.24, 4.25, 4.26, 4.28
2	1	10	b) Crude oil c) Synthetic polymers	4.14, 4.15, 4.16, 4.44, 4.45, 4.46, 4.47
2	1	11	Consolidation & assessment Feedback	
			Physics	
2	2	1	**Section 5: Solids, liquids and gases** a) Units b) Density and pressure c) Ideal gas molecules	5.1, 5.5, 5.6, 5.15, 5.16, 5.17, 5.18

Year	Term	Week	Topic/Sub-topic	Spec points/practicals
2	2	2	c) Ideal gas molecules **Section 6: Magnetism and electromagnetism** a) Units b) Magnetism	5.19, 5.20, 6.1, 6.4, 6.6, 6.7 *Practical: investigate the magnetic field pattern for a permanent bar magnet and that between bar magnets*
2	2	3	c) Electromagnetism	6.8, 6.12, 6.13, 6.14
2	2	4	**Section 7: Radioactivity and particles** a) Units b) Radioactivity	7.1, 7.2, 7.3, 7.4, 7.5, 7.6 *Practical: investigate the penetration powers of different types of radiation using either radioactive sources or simulations*
2	2	5	b) Radioactivity	7.10, 7.12, 7.14, 7.15, 7.16
2	2	6	c) Fission and fusion **Section 8: Astrophysics** a) Units b) Motion in the universe	7.17, 7.18, 7.19, 7.22, 7.25, 8.1, 8.2, 8.3, 8.4, 8.5
2	2	7	c) Stellar evolution Consolidation & assessment	8.7, 8.8, 8.9
Biology				
2	2	8	**Section 3: Reproduction and inheritance** a) Reproduction	3.1, 3.2, 3.3, 3.4, 3.8, 3.13
2	2	9	b) Inheritance	3.15, 3.19, 3.20, 3.23, 3.25, 3.26, 3.27, 3.31
2	2	10	b) Inheritance **Section 4: Ecology and the environment** a) The organism in the environment	3.33, 3.38, 4.1, 4.5
2	3	1	a) The organism in the environment b) Feeding relationships	4.2, 4.6, 4.7, 4.8, 4.9 *Practical: investigate the population size of an organism in two different areas using quadrats*
2	3	2	c) Cycles within ecosystems **Section 5: Use of biological resources** a) Food production	4.10, 5.1, 5.2
2	3	3	a) Food production b) Genetic modification (genetic engineering)	5.5, 5.6, 5.12, 5.13 *Practical: investigate the role of anaerobic respiration by yeast in different conditions*

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2	3	4	b) Genetic modification (genetic engineering) Consolidation & assessment	5.14, 5.15, 5.16
2	3	5	Feedback Revision	
2	3	6	Revision