

Springwood High School Science Curriculum Plan

Our Vision:

To ensure that we provide an excellent quality of Science provision for all students in the local area, enabling them to access higher level Science based careers.

Exam boards: GCSE AQA trilogy and separate sciences, Year 12/13 OCR Chemistry A and Physics A, Year 12/13 AQA Biology, Applied Science BTec

Brief overview of topics, themes, skills or key questions for each term:

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7 – Throughout practical skills, numeracy skills and application will be developed	Matter Electricity Spaced practice	Matter Electricity Cells Chemical reactions Spaced practice	Cells Chemical reactions Ecology Spaced practice	Chemical reactions Forces Ecology	Forces Ecology	Forces Ecology
8 - Throughout practical skills, numeracy skills and application will be developed	Energy Solutions Spaced practice	Energy Solutions Space Organ systems Spaced practice	Organ systems Space Disease and evolution Spaced practice	Principles of chemistry Disease and evolution	Principles of chemistry Disease and Evolution Spaced practice	Principles of chemistry Spaced practice Bronze Crest Award

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9 Throughout practical skills, numeracy skills and application will be developed	<p>Biology – Cells, spaced practice</p> <p>Chemistry – Atoms and the periodic table, spaced practice</p> <p>Physics – Energy, spaced practice</p> <p>Astronomy – Planet Earth, celestial observation</p>	<p>Biology – Cells, health, spaced practice</p> <p>Chemistry – Atoms and the periodic table, bonding, spaced practice</p> <p>Physics – Energy, Electricity, spaced practice</p> <p>Astronomy – Celestial observation, the lunar disc</p>	<p>Biology – Health, spaced practice</p> <p>Chemistry – Bonding, spaced practice</p> <p>Physics – Electricity, spaced practice</p> <p>Astronomy – The lunar disc, exploring the moon, exploring the Solar System</p>	<p>Biology – Health</p> <p>Chemistry – Bonding</p> <p>Physics – Electricity</p> <p>Astronomy – Exploring the Solar System, Solar System observations</p>	<p>Biology – Ecology, spaced practice</p> <p>Chemistry – Earth, spaced practice</p> <p>Physics – Electricity, forces</p> <p>Astronomy – Early models of the Solar System, planetary motion and gravity</p>	<p>Biology – Ecology, spaced practice</p> <p>Chemistry – Earth, spaced practice</p> <p>Physics - Forces</p> <p>Astronomy – Solar astronomy, The Earth-moon-sun system</p>
10 Throughout practical skills, numeracy skills and application will be developed	<p>Biology – Cell biology and organisation</p> <p>Chemistry – States of matter and separation techniques, chemical reactions</p> <p>Physics – Atomic structure, energy</p> <p>Astronomy – Time and the Earth-moon-sun cycles, formation</p>	<p>Biology – Organisation and spaced practice</p> <p>Chemistry – Chemical reactions</p> <p>Physics – Energy, spaced practice, electricity</p> <p>Astronomy – Formation of</p>	<p>Biology – Organisation</p> <p>Chemistry – Bonding</p> <p>Physics – Electricity, spaced practice, particle model</p> <p>Astronomy – Exploring starlight, stellar evolution</p>	<p>Biology – Infection and response and spaced practice</p> <p>Chemistry – Quantitative chemistry</p> <p>Physics – Particle model</p> <p>Astronomy – Stellar evolution, our place in the galaxy</p>	<p>Biology – Infection and response and bioenergetics</p> <p>Chemistry – energy changes, rates</p> <p>Physics – Particle model, spaced practice, forces</p> <p>Astronomy - Cosmology</p>	<p>Biology – Bioenergetics and homeostasis</p> <p>Chemistry – analysis</p> <p>Physics– Forces, spaced practice</p>

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	of planetary systems	planetary systems, exploring starlight				
11 Recap of content and exam preparation all year, key skills, practical's and math's	<p>Biology – Homeostasis and inheritance</p> <p>Chemistry – analysis/organic</p> <p>Physics – Waves, paper 1 recap of content exam preparation</p>	<p>Biology – Inheritance, spaced practice, homeostasis and ecology</p> <p>Chemistry – earth 1</p> <p>Physics – Waves, electromagnetism</p>	<p>Biology – Ecology</p> <p>Chemistry – earth 2</p> <p>Physics - Electromagnetism, Paper 2 recap of content exam preparation</p>	<p>Biology: Revision pack</p> <p>Triple: Combined: Revision pack A</p> <p>Chemistry - exam lead in</p> <p>Physics - Space, revision</p>	<p>Triple: Revision pack</p> <p>Combined: revision pack</p> <p>Physics - Revision</p>	
12	<p>Biology – biological molecules and cell structures</p> <p>Chemistry – Atoms and reactions (I), electrons bonding and structure (I), basic organic chemistry and hydrocarbons (I).</p> <p>Physics – Quantities and units, electricity</p>	<p>Biology – biological molecules, protein synthesis, transport across membranes, cell structures, gas exchange and spaced practice</p> <p>Chemistry – Atoms and reactions (II), electrons bonding and structure (II), basic organic chemistry and hydrocarbons (II)</p> <p>Physics – Electricity, motion, forces</p>	<p>Biology – Gas exchange, protein synthesis, transport across membranes, immunity and diversity and selection</p> <p>Chemistry – Atoms and reactions (III), periodic table (I), Alcohols, Haloalkanes & Analysis (I)</p> <p>Physics – Waves, work energy and power, materials</p>	<p>Biology – spaced practice, immunity, exchange and transport, diversity and selection and transport across membranes</p> <p>Chemistry – periodic table (II), physical chemistry (I), Alcohols, Haloalkanes & Analysis (II)</p> <p>Physics – Waves, materials</p>	<p>Biology – classification and diversity, spaced practice, exchange and transport, populations and ecosystems</p> <p>Chemistry – Physical chemistry (II), periodic table (II), Alcohols, Haloalkanes & Analysis (III)</p> <p>Physics – Newton's laws, quantum physics, circular</p>	<p>Biology – spaced practice, homeostasis, exchange and transport, populations and evolution, energy transfers</p> <p>Chemistry (Yr13) – Aromatic Compounds, Carbonyls & Acids (I), Rates equilibrium and pH(I), Energy (I)</p> <p>Physics – Oscillations, thermal physics</p>

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	Applied Science – working with waves, cells structure and function, structure and bonding unit 2 practical's/assignments	Applied Science - working with waves, cells structure and function, structure and bonding unit 2 practical's/assignments	Applied Science – waves in communication, Cell specialisation, production and uses of substances, unit 2 practical's/assignments	Applied Science - Uses of electromagnetic waves in communication, Tissue structure and function and uses of substances, unit 2 practical's/assignments	motion, gravitational fields Applied Science – Uses of electromagnetic waves in communication, Tissue structure and function, production and uses of substances, Exam preparation. Completion of unit 2 assignments	Applied Science – Unit 3 preparation, optional unit assignments begin
13	<p>Biology – spaced practice, stimuli and response, gene expression, respiration</p> <p>Chemistry – Equilibrium & pH (I), carbonyls & carboxylic acids, energy (I)</p> <p>Physics – Electric fields, oscillations, capacitors</p> <p>Applied Science – optional unit</p>	<p>Biology – Stimuli and response, spaced practice, gene expression, respiration and photosynthesis</p> <p>Chemistry – Equilibrium & pH (II), energy (II), carbonyls & carboxylic acids (II)</p> <p>Physics – Electromagnetism, capacitors, astrophysics and cosmology</p>	<p>Biology – Nervous coordination, spaced practice, gene technology, photosynthesis and genetics</p> <p>Chemistry – organic nitrogen compounds (I), analysis (I)</p> <p>Physics – Astrophysics and cosmology, nuclear particle physics, electromagnetism, medical imaging</p>	<p>Biology – gene technology, genetics, spaced practice</p> <p>Chemistry – organic nitrogen compounds (II), analysis (II), Transition metals</p> <p>Physics – spaced practice, medical imaging</p> <p>Applied Science - optional unit</p>	<p>Biology – Practical skills, essay skills, numeracy skills and spaced practice</p> <p>Chemistry – Exam preparation</p> <p>Physics – Exam preparation</p>	

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	assignments and unit 3 practical's and content	Applied Science - optional unit assignments and unit 3 practical's and content	Applied Science - optional unit assignments and unit 3 practical's and content	assignments and unit 3 practical's, content and exam preparation	Applied Science – Exam preparation	
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Enrichment Activities:

Super Learning Days: Year 7 zoo trip, Year 8 space day, Year 10 triple physics day

Competitions: CREST Award end of year 8, British Physics Olympiad Senior Challenge in year 12

Trips: Year 12 Sizewell trip, Year 12 Holkham trip

Clubs & Support: After school support sessions, Year 7 and 8 Discovery Crest Award, Year 9 Silver Crest Award, Uplearn, Seneca, GCSEpod