

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, Medical Science

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	Cells Chemical reactions	Forces Ecology Spaced practice British Science Week	Forces Ecology Spaced practice	Forces Ecology Science Capital Literacy in science
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 British Science Week	Principles of chemistry Disease and Evolution Spaced practice	Bronze Crest Award Skills lessons

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9 Throughout practical skills, numeracy skills and application will be developed	Biology – Cells, spaced practice	Biology – Cells, health, spaced practice	Biology – Health	Biology – Health, British Science Week	Biology – Ecology	Biology – Ecology, spaced practice
	Chemistry – Atoms and the periodic table, spaced practice	Chemistry – Atoms and the periodic table, bonding	Chemistry – Bonding	Chemistry – Bonding, Earth, British Science Week	Chemistry – Earth	Chemistry – Earth, spaced practice
	Physics – Energy, spaced practice	Physics – Energy, Electricity	Physics – Electricity	Physics – Electricity, British Science Week	Physics – Electricity, forces	Physics - Forces, spaced practice
	Astronomy – Planet Earth, celestial observation	Astronomy – Celestial observation, the lunar disc	Astronomy – The lunar disc, exploring the moon, exploring the Solar System	Astronomy – Exploring the Solar System, Solar System observations	Astronomy – Early models of the Solar System, planetary motion and gravity	Astronomy – Solar astronomy, The Earth-moon-sun system
10 Throughout practical skills, numeracy skills and application will be developed	Biology – Cell biology and organisation	Biology – Organisation, infection and response and spaced practice	Biology – Organisation and infection and response	Biology – Infection and response, bioenergetics and spaced practice	Biology – Spaced practice and bioenergetics	Biology – Bioenergetics and homeostasis
	Chemistry – States of matter and separation techniques, chemical reactions	Chemistry – Chemical reactions, bonding	Chemistry – Bonding, quantitative chemistry, spaced practice	Chemistry – Quantitative chemistry, energetics, spaced practice	Chemistry – energetics, collision theory	Chemistry – collision theory, spaced practice
	Physics – Atomic structure, energy	Physics – Energy, spaced practice, electricity	Physics – Electricity, spaced practice, particle model	Physics – Particle model	Physics – Particle model, spaced practice, forces	Physics– Forces, space

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	Astronomy – Time and the Earth-moon-sun cycles, formation of planetary systems	Astronomy – Formation of planetary systems, exploring starlight	Astronomy – Exploring starlight, stellar evolution	Astronomy – Stellar evolution, our place in the galaxy	Astronomy - Cosmology	
11 Recap of content and exam preparation all year, key skills, practical's and math's	Biology – Homeostasis, inheritance and spaced practice Chemistry – organics, spaced practice Physics – Waves, paper 1 recap of content exam preparation	Biology – Inheritance, spaced practice and ecology Chemistry – analysis, Earth's atmosphere, Earth's resources Physics – Waves, electromagnetism	Biology – Ecology, inheritance and spaced practice Chemistry – exam lead in Physics - Electromagnetism, Paper 2 recap of content exam preparation	Biology - Ecology and exam lead in Chemistry - exam lead in Physics - exam lead in	Triple: Exam lead in Combined: revision pack Biology - Exam lead in Chemistry - exam lead in Physics - exam lead in	
12	Biology – biological molecules and cell structures Chemistry – Atoms and reactions (I), electrons bonding and structure (I), basic organic	Biology – biological molecules, cell structures, spaced practice, protein synthesis, immunity and transport across membranes Chemistry – Atoms and reactions (II), electrons bonding and structure (II), basic organic	Biology – Spaced practice, transport across membranes, immunity and exchange and transport Chemistry – Atoms and reactions (III), periodic table (I), Alcohols, Haloalkanes & Analysis (I)	Biology – Transport across membranes, immunity, exchange and transport and spaced practice Chemistry – periodic table (II), physical chemistry (I), Alcohols, Haloalkanes & Analysis (II)	Biology – Gas exchange, diversity and selection, classification and diversity, exchange and transport Chemistry – Physical chemistry (II), periodic table (II), Alcohols, Haloalkanes & Analysis (III)	Biology – Classification and diversity, spaced practice, energy transfers and required practical catch-up. Chemistry (Yr13) – Aromatic Compounds, Carbonyls & Acids (I), Rates

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	chemistry and hydrocarbons (I). Physics – Quantities and units, electricity Medical science - Unit 3 coursework:Assignment A and C	chemistry and hydrocarbons (II) Physics – Electricity, motion, forces Medical science - Unit 3 coursework:Assignment B and D	 Physics – Waves, work energy and power, materials Medical science - Unit 1: Principles of Human Physiology, Anatomy and Pathology	 Physics – Waves, materials Medical science - Unit 1:Principles of Human Physiology, Anatomy and Pathology	Physics – Newton’s laws, quantum physics, circular motion, gravitational fields Medical science - Unit 1: Exam revision and Exam	equilibrium and pH(I), Energy (I) Physics – Oscillations, thermal physics Medical science - Unit 2: Health Issues and Scientific Reporting
13	Biology – Homeostasis, respiration, photosynthesis and spaced practice Chemistry – Equilibrium & pH (I), carbonyls & carboxylic acids, energy (I), benzene	Biology – Mutations and gene expression, genetics, stimuli and response and spaced practice Chemistry – Equilibrium & pH (II), energy (II), carbonyls & carboxylic acids (II), redox chemistry	Biology – Mutations and gene expression, populations and evolution, stimuli and response, gene technology, nervous coordination and spaced practice Chemistry – organic nitrogen compounds (I), analysis (I), polymer chemistry	Biology – spaced practice Chemistry – organic nitrogen compounds (II), analysis (II), Transition metals, spectroscopic analysis	Biology – Practical skills, essay skills, numeracy skills and exam preparation Chemistry – Exam preparation	

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	Physics –, oscillations, astrophysics and cosmology	Physics – electric fields, capacitors, electromagnetism	Physics – nuclear particle physics, electromagnetism, medical imaging	Physics – spaced practice	Physics – Exam preparation	
	Applied Science – optional unit 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	Applied Science - optional unit assignments and Unit 3 practical's, content and exam preparation	Applied Science – Exam preparation	

Enrichment Activities:

Super Learning Days: Year 7 zoo trip, CREST Award, Space day

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

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, CanSat, Uplearn, Seneca, Tassomai