

Overview (Key Stage)

Link to specification or KS3 subject national curriculum

Year	7					
Foci	Introduction to the big idea topics; forces, electromagnets, energy, waves, matter, reactions, Earth, organisms, ecosystem and genes. Incorporating the enquiry process of analyse, communicate, enquiry and solve.					
Time	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	
Topic	Physics-speed & gravity (Sept)	Chemistry - particle model & separating mixtures (Oct)	Physics - voltage, resistance and current (Nov)	Biology - movement & cells (Dec) *last week in Dec catch up	Chemistry - Metals & non-metals/ acids & alkalis (Jan)	
Big Idea	Forces (K)	Matter	Electromagnets	Organisms	Reactions	
Key Idea	Speed/Gravity	Particle model / separating mixtures	Voltage & resistance / current	Movement / cells	Metals and non-metals / acids and alkalis	
Spec. Ref	3.1.1 / 3.1.2	3.5.1 / 3.5.2	3.2.1 / 3.2.2	3.8.1 / 3.8.2	3.6.1 / 3.6.2	
Driving Question	Investigate variables that affect the speed of a toy car rolling down a slope.	Relate the features of the particle model to the properties of materials in different states.	Compare the voltage drop across resistors connected in series in a circuit.	Explore how the skeletal system and muscular system in a chicken wing work together to cause	Use experimental results to suggest an order of reactivity of various metals.	

	Explain the way in which an astronaut's weight varies on a journey to the moon	Devise ways to separate mixtures, based on their properties	Compare and explain current flow in different parts of a parallel circuit	movement. Identify the principal features of a cheek cell and describe their functions	Devise an enquiry to compare how well indigestion remedies work	
Area	Physics	Chemistry	Physics	Biology	Chemistry	
Assessment	AFL - Do it now task (self assessment), effective questioning, targeted live marking, plenary questions and home learning tasks including use of TASSOMAI Summative assessment - end of topic test during lesson, DIRT incorporating self assessment using pupil tracker form and test resits.					

Year	7					
Foci	Introduction to the big idea topics; forces, electromagnets, energy, waves, matter, reactions, Earth, organisms, ecosystem and genes. Incorporating the enquiry process of analyse, communicate, enquiry and solve.					
Time	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	
Topic	Physics - Energy transfer (end of Jan, start of Feb) & Energy cost (end of Feb until start March)	Biology - Interdependence & plant reproduction (second half of March/April)	Chemistry - Earth structure & The Universe (May) *last week in May catch up	Physics - Sound & Light (June)	Biology - Variation & Human reproduction (July)	

Big Idea	Energy	Ecosystem	Earth	Waves	Genes	
Key Idea	Energy costs / transfer	Interdependence / plant reproduction	Earth structure / universe	Sound / light	Genes - Variation / human reproduction	
Spec. Ref	3.3.1 / 3.3.2	3.9.1 / 3.9.2	3.7.1 / 3.7.2	3.4.1 / 3.4.2	3.10.1 / 3.10.2	
Driving Question	<p>Compare the running costs of fluorescent and filament light bulbs.</p> <p>Explain the energy transfers in a hand-crank torch</p>	<p>Use a model to investigate the impact of changes in a population of one organism on others in the ecosystem.</p> <p>Use models to evaluate the features of various types of seed dispersal</p>	<p>Model the processes that are responsible for rock formation and link these to the rock features.</p> <p>Relate observations of changing day length to an appropriate model of the solar system</p>	<p>Relate changes in the shape of an oscilloscope trace to changes in pitch and volume.</p> <p>Use ray diagrams to model how light passes through lenses and transparent materials</p>	<p>Graph data relating to variation and explain how it may lead to the survival of a species.</p> <p>Relate advice to pregnant women to ideas about transfer of substances to the embryo</p>	
Area	Physics	Biology	Chemistry	Physics	Biology	
Assessment	<p>AFL - Do it now task (self assessment), effective questioning, targeted live marking, plenary questions and home learning tasks including use of TASSOMI</p> <p>Summative assessment - end of topic test during lesson, DIRT incorporating self assessment using pupil tracker form and test resits.</p>					

Year	8					
Foci	Building on the big idea topics; forces, electromagnets, energy, waves, matter, reactions, Earth, organisms, ecosystem and genes. Incorporating the enquiry process of analyse, communicate, enquiry and solve.					
Time	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	
Topic	Physics-contact forces & Pressure (Sept)	Chemistry - Periodic table & Elements (Oct)	Physics - Electromagnets and magnetism (Nov)	Biology - Breathing & Digestion (Dec) *last week in Dec catch up	Chemistry - Chemical energy & Types of reaction (Jan)	
Big Idea	Forces	Matter (K)	Electromagnets	Organisms	Reactions	
Key Idea	Contact force / Pressure	Periodic table / Elements	Electromagnets / magnetism	Breathing / digestion	Chemical energy / types of reaction	
Spec. Ref	3.1.3 / 3.1.4	3.5.3 / 3.5.4	3.2.3 / 3.2.4	3.8.3 / 3.8.4	3.6.3 / 3.6.4	
Driving Question	Investigate factors that affect the size of frictional or drag forces. Investigate how pressure from your foot onto the ground varies with different footwear.	Sort elements using chemical data and relate this to their position in the periodic table. Compare the properties of elements with the properties of a compound formed from them.	Investigate ways of varying strength of an electromagnet. Explore the magnetic field pattern around different types or combinations of magnets.	Investigate a claim linking height to lung volume. Evaluate how well a model represents key features of the digestive system	Investigate a phenomenon that relies on an exothermic or endothermic reaction. Investigate changes in mass for chemical and physical processes.	

Area	Physics	Chemistry	Physics	Biology	Chemistry	
Assessment	<p>AFL - Do it now task (self assessment), effective questioning, targeted live marking, plenary questions and home learning tasks including use of TASSOMI</p> <p>Summative assessment - end of topic test during lesson, DIRT incorporating self assessment using pupil tracker form and test resits.</p>					

Year	8					
Foci	Building on the big idea topics; forces, electromagnets, energy, waves, matter, reactions, Earth, organisms, ecosystem and genes. Incorporating the enquiry process of analyse, communicate, enquiry and solve.					
Time	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	
Topic	Physics - Work (end of Jan, start of Feb) & Heating and cooling (end of Feb until start March)	Biology - Respiration & Photosynthesis (March/April)	Physics - Wave effects & wave properties (May) *last week in May catch up	Chemistry - Climate & Earth's resources (June)	Biology - Evolution and Inheritance (July)	
Big Idea	Energy	Ecosystem	Waves	Earth	Genes	
Key Idea	Work / Heating & cooling	Respiration / photosynthesis	Wave effects / wave properties	Climate / Earth resources	Evolution / inheritance	
Spec. Ref	3.3.3 / 3.3.4	3.9.3 / 3.9.4	3.4.3 / 3.4.4	3.7.3 / 3.7.4	3.10.3 / 3.10.4	
Driving	Explain how an electric	Use data from	Relate the impact of	Investigate the	Review the evidence for	

Question	<p>motor raising a weight is doing work.</p> <p>Investigate how to prevent heat loss by conduction, convection and radiation</p>	<p>investigating fermentation with yeast to explore respiration.</p> <p>Use lab tests on variegated leaves to show that chlorophyll is essential for photosynthesis</p>	<p>different types of waves on living cells to their frequency and the energy carried by the wave.</p> <p>Use the wave model to explain observations of the reflection, absorption and transmission of waves.</p>	<p>contribution that natural and human chemical processes make to our carbon dioxide emissions.</p> <p>Predict the method used for extracting metal based on its position in the reactivity series.</p>	<p>theories about how a particular species went extinct.</p> <p>Model the inheritance of a specific trait and explore the variation in the offspring produced</p>	
Area	Physics	Biology	Physics	Chemistry	Biology	
Assessment	<p>AFL - Do it now task (self assessment), effective questioning, targeted live marking, plenary questions and home learning tasks including use of TASSOMI</p> <p>Summative assessment - end of topic test during lesson, DIRT incorporating self assessment using pupil tracker form and test resits.</p>					

Year	9									
Foci	Build on KS3 learning. Focus on areas of the KS4 curriculum that are highlighted in the chief examiners report. Develop skills and knowledge for KS4.									
Time	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons	10 lessons
Topic	Distribution	Separation methods & focus on chromatography method	Forces and energy (SHC)	Osmosis practical and Photosynthesis practical	Bonding	Wave effects and properties	Genetics (including genome, cloning and stem cells)	Chemical symbols and equations	Current	Maths skills - Conversations, standard form, significant figures, indices and powers, percentages Graph skills (line of best fit, gradient) Using numerical information from the question
Subject	(K) Biology	(R)Chemistry	(S) Physics	(R)Biology	(D)Chemistry	(K) Physics	(K) Biology	(D) Chemistry	(S) Physics	(R)Maths skills in science
Spec. Ref (KS3)	3.10. 1	3.5.2	3.3.3 / 3.3.4	3.9.4	3.6.3 / 3.6.4	3.4.3 / 3.4.4	3.10.4	3.5.3 / 3.5.4	3.2.1 / 3.2.2	2. Enquiry processes
Driving Question	Investigation of rock pool.How can we explain the position of organisms on a rocky shore?	Why do we need each step of the separation method?	Why is the sand hot and the sea cold? <i>Spring extension Q</i>	How do we improve accuracy and reliability?	How does the ice cube tray battery work?	Why are big waves loud?	How to use and critique journals and understand the peer review process?	Which antacid is best for heartburn?	What happens to current and voltage when we add a lamp, diode and variable resistor?	How are maths and science linked?

Links at KS4	RPA field investigations	RPA chromatography	RPA specific heat capacity and force & extension	RPA osmosis and photosynthesis	RPA Rates of reaction / electrolysis	RPA waves investigation	RPA microscopy	RPA Making salts	RPA resistance and I-V characteristics	Maths skills to allow pupils to access KS4
Assessment	AFL - Do it now task (self assessment), effective questioning, targeted live marking, plenary questions and home learning tasks including use of TASSOMAI Summative assessment - end of topic test during lesson, DIRT incorporating self assessment using pupil tracker form and test resits.									

Overview (Key Stage)

Link to specification KS4 subject AQA double award combined science.

Year	10 (9 lessons every 2 weeks)					
Foci	Study content from paper 1 AQA Trilogy Science					
Time	Autumn T1	Autumn T2	Spring T1	Spring T2	Summer T1	Summer T2
Topic	1. Cell biology (K) 2. Organisation (K)	3. Infection and response 4. Bioenergetics (K)	8. Atomic structure and the periodic table 9. Bonding, structure, and the properties of matter	10. Quantitative chemistry 11. Chemical changes 12. Energy changes	18. Energy 19. Electricity	20. Particle model of matter 21. Atomic structure.
Key Ideas & Spec. Ref	4.1.1 Cell structure 4.1.2 Cell division 4.1.3 Transport in cells 4.2.1 Principles of organisation 4.2.2 Animal tissues, organs and organ systems 4.2.3 Plant tissues, organs and systems	4.3.1 Communicable diseases (Viral, bacterial, fungal, protist diseases, human defence systems, vaccination, antibiotics & painkillers, discovery and development of drugs) 4.4.1 Photosynthesis 4.4.2 Respiration	5.1.1 A simple model of the atom, symbols, relative atomic mass, 5.1.2 The periodic table 5.2.1 Chemical bonds, ionic, covalent and metallic 5.2.2 How bonding and structure are related to the properties of substances 5.2.3 Structure and	5.3.1 Chemical measurements, conservation of mass and the quantitative interpretation of chemical equations 5.3.2 Use of amount of substance in relation to masses of pure substances 5.4.1 Reactivity of metals 5.4.2 Reactions of acids	6.1.1 Energy changes in a system, and the ways energy is stored before and after such changes 6.1.2 Conservation and dissipation of energy 6.1.3 National and global energy resources 6.2.1 Current, potential difference and resistance 6.2.2 Series and parallel circuits	6.3.1 Changes of state and the particle model 6.3.2 Internal energy and energy transfers 6.3.3 Particle model and pressure 6.4.1 Atoms and isotopes 6.4.2 Atoms and nuclear radiation

			bonding of carbon	5.4.3 Electrolysis 5.5.1 Exothermic and endothermic reactions	6.2.3 Domestic uses and safety 6.2.4 Energy transfers	
Subject	Biology	Biology	Chemistry	Chemistry	Physics	Physics
Assessment	AFL - Do it now task (self assessment), effective questioning, targeted live marking, plenary questions and home learning tasks including use of TASSOMAI Summative assessment - end of topic assessment, end of term test, DIRT incorporating self assessment using pupil tracker form and test resits.					

Year	11 (10 lessons every 2 weeks)					
Foci	Study content from paper 2 AQA Trilogy Science					
Time	Autumn T1	Autumn T2	Spring T1	Spring T2	Summer T1	Summer T2
Topic	5. Homeostasis and response 13. The rate and extent of chemical change 14. Organic chemistry	6. Inheritance, variation and evolution (K) 7. Ecology (K)	15. Chemical analysis 22. Forces 23. Waves	16. Chemistry of the atmosphere 17. Using resources 24. Magnetism and electromagnetism	Exam prep paper 1	Exam prep paper 2
Key Idea &	4.5.1 Homeostasis	4.6.1 Reproduction	5.8.1 Purity, formulations	5.9.1 The composition		

Spec. Ref	4.5.2 The human nervous system 4.5.3 Hormonal coordination in humans 5.6.1 Rate of reaction 5.6.2 Reversible reactions and dynamic equilibrium 5.7.1 Carbon compounds as fuels and feedstock	4.6.2 Variation and evolution 4.6.3 The development of understanding of genetics and evolution 4.6.4 Classification of living organisms 4.7.1 Adaptations, interdependence and competition 4.7.2 Organisation of an ecosystem 4.7.3 Biodiversity and the effect of human interaction on ecosystems	and chromatography 5.8.2 Identification of common gases 6.5.1 Forces and their interactions 6.5.2 Work done and energy transfer 6.5.3 Forces and elasticity 6.5.4 Forces and motion 6.5.5 Momentum (HT only) 6.6.1 Waves in air, fluids and solids 6.6.2 Electromagnetic waves	and evolution of the Earth's atmosphere 5.9.2 Carbon dioxide and methane as greenhouse gases 5.9.3 Common atmospheric pollutants and their sources 5.10.1 Using the Earth's resources and obtaining potable water 5.10.2 Life cycle assessment and recycling 6.7.1 Permanent and induced magnetism, magnetic forces and fields 6.7.2 The motor effect		
Subject	Biology/Chemistry	Biology	Chemistry/Physics	Chemistry/Physics		
Assessment	AFL - Do it now task (self assessment), effective questioning, targeted live marking, plenary questions and home learning tasks including use of TASSOMAI Summative assessment - end of topic assessment, end of term test, DIRT incorporating self assessment using pupil tracker form and test resits.					