Separate Science Revision List

Biology Paper 1

Cell structure and processes (Key concepts in Biology)	Cell structure Enzymes Transport of substances Bitesize exam questions	Seneca HT Seneca FT Topic 1 to 5
Cells and control	Cell division Mitosis Co-ordination and control Bitesize exam questions	
Genetics	Reproduction and genes Genetic inheritance 1 Genetic inheritance 2 Bitesize exam questions	
Natural selection and genetic modification	Evolution Genetic modification Bitesize exam questions	
Health and disease	Communicable diseases Plant disease Treating, curing and preventing disease Making medicines Non-communicable diseases Bitesize exam questions	

Biology Paper 2

Cell structure and processes (Key concepts in Biology)	Cell structure Enzymes Transport of substances Bitesize exam questions	Seneca HT Seneca FT Topic 1, 6 to 9
Plant structure and function	Photosynthesis Plant organisation Plant hormones Bitesize exam questions	
Animal co-ordination, control and homeostasis	Endocrine system Hormones in human reproduction Homeostasis in humans Bitesize exam questions	
Animal exchange and transport	Gas exchange Cellular respiration and transport Bitesize exam questions	
Ecosystems and material cycles	Adaptations, interdependence and competition Organisation of an ecosystem Biodiversity Food security Natural cycles and decomposition Bitesize exam questions	

Biology core practicals

Chemistry Paper 1

Key concepts in chemistry	Equations and formulae	Seneca HT

	Hazards and risks Atomic structure The periodic table Ionic compounds Simple molecular substances Giant covalent substances Metal and non-metal Chemistry calculations HT Mole calculations Bitesize exam questions	Seneca FT Topic 1 to 5
States of matter and mixtures	States of matter Changes of state Separation and purification Bitesize exam questions	
Chemical changes	Acid and alkalis Salts Electrolysis Bitesize exam questions	
Extracting metals ad equilibria	Obtaining and using metals Reversible reactions and equilibria Bitesize exam questions	
Separates 1	Transition metals, alloys and corrosion Percentage yield, atom economy and gas calculations More chemical calculations Fertilisers and chemicals HT Industrial chemical reactions Chemical cells and fuel cells Bitesize exam questions	

Chemistry Paper 2

Key concepts in chemistry	Equations and formulae Hazards and risks Atomic structure The periodic table Ionic compounds Simple molecular substances Giant covalent substances Metal and non-metal Chemistry calculations HT Mole calculations Bitesize exam questions	Seneca HT Seneca FT Topic 1, 6 to 9
Groups of the periodic table	Group 1 – alkali metals Group 7 – the halogens Group 0 – the noble gases Bitesize exam questions	
Rates of reaction and energy change	Rates of reaction Heat energy changes in chemical reactions Bitesize exam questions	
Fuels and Earth science	Fuels Earth Science (atmosphere) Bitesize exam questions	
Separate chemistry 2	Testing for ions Hydrocarbons Polymers Alcohols and carboxylic acids Nanoparticles and their uses Bulk materials	

	Bitesize exam questions	

Chemistry core practicals

Physics Paper 1

Key concepts in physics	Key concepts	Seneca HT Seneca FT Topic 1 to 7
Motion and forces	Scalar and vector quantities Motion Newtons laws HT Momentum Motion of vehicles Bitesize exam questions	
Conservation of energy	Changes in energy Efficiency Energy sources Bitesize exam questions	
Waves	Properties of waves Reflection and refraction Sound and ultrasound Bitesize exam questions	
Light and electromagnetic spectrum	Light waves Lenses Electromagnetic waves Bitesize exam questions	
Radiation	Atoms Nuclear radiation Uses and dangers of radioactivity Nuclear power Bitesize exam questions	
Astronomy	The solar system The Universe The life cycle of stars Bitesize exam questions	

Physics Paper 1

Forces doing work	Changes in energy Power and efficiency Bitesize exam questions	Seneca HT Seneca FT Topic 1, 8 to 15
Forces and their effects	Forces Effects of forces Bitesize exam questions	
Electricity and circuits	Electric circuits Mains electricity Bitesize exam questions	
Static electricity	Static electricity Bitesize exam questions	
Magnetism and the motor effect	Magnets and magnetic fields HT Electromagnets (motor effect) Bitesize exam questions	
Electromagnetic induction	Electromagnetic induction Transformers Bitesize exam questions	
Particle model	Density of materials Temperature changes and energy States of matter Gases Bitesize exam questions	

Forces and matter	Forces and elasticity Pressure in fluids Bitesize exam questions	

Physics core practicals

Pearson Edexcel GCSE Science - Core Practical Videos - ver. 4.0

This document has the up to date links for the core practical videos available for GCSE Combined Science, GCSE Biology, GCSE Chemistry and GCSE Physics. Links to each video will become "live" as the videos are published. Keep an eye on the quals news page to see when new videos can be accessed.

GCSE Combined Science (Biology) | GCSE Biology

- Investigating biological samples with a microscope
- Investigate the effect of pH on enzyme activity
- Investigate osmosis in potatoes
- Investigate the effect of light intensity on the rate of photosynthesis
- Investigate the rate of respiration in living organisms
- Investigate the relationship between organisms and their environment

Additional practicals needed for GCSE Biology

- Investigate the use of chemical reagents to identify starch, reducing sugars,proteins and fats
- Investigate the effects of antiseptics, antibiotics or plant extracts on microbial cultures

GCSE Combined Science (Chemistry) | GCSE Chemistry

- Investigate the composition of inks by simple distillation and chromatography
- Investigate the change in pH of a fixed volume of HCl on the addition of calcium hydroxide
- Preparation of pure, dry hydrated copper sulfate crystals
- Investigate the electrolysis of copper sulfate solution with inert (graphite) and copper electrodes
- Investigating the rate of a reaction by a) measuring the production of a gas and b) by observing a colour change

Additional practicals needed for GCSE Chemistry

- Acid alkali titration using burette, pipette and a suitable indicator
- Identify the ions in unknown salts using the tests set out in the specification
- Investigate the temperature rise of a known mass of water by some common alcohols

GCSE Combined Science (Physics) | GCSE Physics

- Investigate the relationship between force mass and acceleration with trolleys
- Investigate the suitability of equipment to measure the speed frequency and wavelength of a wave in a solid and a fluid.
- Investigate the densities of solids and liquids
- Investigate the refraction in rectangular glass blocks
- Investigate the extension and work done when applying forces to a spring
- Use circuits to **a**) investigate the relationship between potential difference, current and resistance for a resistance in a filament lamp and **b**) test series and parallel circuits using resistors and filament lamps
- Investigate the properties of water by determining the specific heat capacity of water and obtaining a temperature time graph for melting ice

Additional practical needed for GCSE Physics

- Investigate how the nature of a surface affects the amount of thermal energy radiated or absorbed.