

To year 8



Project work

Focusing on: Developing skills and knowledge in preparation for year 8

10. Space Focusing on:

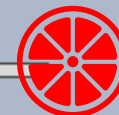
- ideas about the Sun and Moon, using models to explain phenomena such as eclipses and the seasons
- the cycles of seasons and the phases of the moon
- the solar system

9. Acids and alkalis Focusing on:

- acids and alkalis as classes of chemicals with distinct properties and uses
- indicators to classify solutions as acidic, alkaline or neutral
- the pH scale to compare the acidity and alkalinity of different solutions
- begin to explore neutralisation

End of year exam

Revisit and revise



8. Reproduction Focusing on:

- ideas about human reproduction and how offspring are protected and nurtured
- reproductive patterns in other animals with those in humans
- relate what they know of the way their bodies change during adolescence to knowledge about human reproduction, growth and the menstrual cycle



6. Forces Focusing on:

- concepts of force and its measurement
- identifying the origin of friction, air resistance, up thrust and weight and describe situations in which these forces act
- identifying situations in which forces are balanced and unbalanced

7. Reactions and bonding Focusing on:

- the idea that chemical change results in new substances that are different from the ones from which they were made
- explore burning as a chemical reaction involving a gas, air or oxygen
- identify hydrogen and carbon dioxide as substances made during some of these reactions
- begin to use word equations as shorthand descriptions of reaction



Assessment point 1



5. Body systems Focusing on:

- learn that that organisms are a collection of cells and how those cells are organised
- explore the skeletal system, joints and muscles
- learn about the process of breathing and the respiratory systems role in gas exchange.

3. Light Focusing on:

- build on their knowledge of light and its effects
- learn how we see objects
- represent light as a ray and use this concept to explain reflection and refraction
- find out about the origin of coloured light and the appearance of coloured objects



1. Working scientifically Focusing on:

- identifying questions that are suitable for scientific enquiry
- use a variety of strategies to answer scientific questions of different kinds
- plan and set targets for a piece of work



Revisit and revise



4. Particles and behaviour Focusing on:

- learn how the particle model can be used to explain differences between solids, liquids and gases
- explore how experimental evidence relates to theories and models

2. Cells Focusing on:

- learn that cells are the basic units of life and are organised into tissues from which organs are made
- explore cell structure and differences between plant and animal cells
- learn about some functions of cells

Baseline assessment



From year 6

Year 7 Science C26



To Year 9



End of year exam

Revisit and revise

13. Electricity and magnetism Focusing on:

- Associate the concept of voltage with the transfer of energy in a circuit
- Investigate the effect of resistance
- Magnetism, magnetic fields and electromagnets

12. Motion and pressure Focusing on:

- The relationship between forces on an object and its movement
- Measure and calculate the speed of objects in a range of situations.
- Know that pressure is caused by the molecules colliding with something.

7. Separation techniques Focusing on:

- Separation of the components of a solution and relate this to particle theory
- Separation techniques such as, filtration, evaporation, distillation and chromatography

8. Metals and acids Focusing on:

- The properties of a variety of metals and non-metals,
- Different acidic reactions with metals, metal carbonates and metal oxides
- Represent elements by symbols and compounds by formulae

9. Adaptation and inheritance Focusing on:

- Variation in species occurs due to inherited and environmental characteristics.
- To know organisms adapt to environmental changes in order to survive

6. Sound Focusing on:

- Sound consists of vibrations which travel as a longitudinal wave through substances.
- The effect of the density of a medium and the amplitude/frequency of the waveform on volume and pitch of the sound.

3. Energy Focusing on:

- Energy in the context of fuels
- The nature and origin of fossil fuels and renewable energy sources
- The transfer of energy and temperature

2. Health and Lifestyle Focusing on:

- The main components of food and their tests.
- Health effects of lifestyle choices
- Digestive system and enzymes

5. The Earth Focusing on:

- The structure of the Earth and its atmosphere.
- How rock-forming processes are linked by the rock cycle

4. Ecosystem processes Focusing on:

- The importance of the processes photosynthesis and respiration on food chains and ecological habitats.
- Examination of habitats to learn how: organisms can be identified, and sizes of populations compared

1. Periodic table Focusing on:

- Classifying elements based on patterns and properties.
- Using patterns in the periodic table to predict properties

AP1

Revisit and revise



Year 8 Science C25

From year 7

To Year 10



Review and gap filling

8. Communicable disease Triple groups only in Yr 9

Focusing on:

- What health and disease is
- A variety of diseases caused by pathogens and their causes, symptoms and treatments.



7. Respiration Triple groups only in Yr 9

Focusing on:

- The processes of aerobic and anaerobic respiration
- The effect of exercise on these processes



End of year exam

Revisit and revise

5. Organisation in animals

Focusing on:

- The composition of the blood and structure and function of blood vessels
- The structure and function of the heart and some problems associated with the heart
- Breathing and how gases are taken into and released from the body.

6. Organisation in plants

Focusing on:

- The tissues and organs that make up the transport systems in plants
- How plants gain and lose water
- The process of photosynthesis and its function in plants

AP1

Revisit and revise



3. Cell division

Focusing on:

- How cells duplicate to produce new cells in animals and plants
- How cells develop into specialised cells
- How technology has developed to allow the use of these processes.

2. Transport in cells

Focusing on:

- The main processes that allow materials into and out of the cell
- The adaptations of structures to allow the efficient movement of materials into and out of the cell.

4. Organisation and the digestive system

Focusing on:

- How cells are organised into larger structures
- The digestive system structure and function including enzymes and food groups



1. Cell structure and function

Focusing on:

- The ability to recognize and identify the main components within a variety of cell types.
- The specific structure various cells have, to enable them to function in a particular way.



Year 9 Biology C24

From year 8

To Year 10



Review
and gap
filling

6. Chemical calculations (triple only in year 9)

Focusing on:

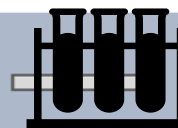
- Relative atomic mass of compounds
- Balancing equations
- Calculating yield



5. Chemical changes

Focusing on:

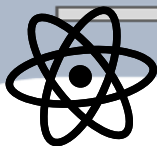
- The reactivity series and displacement reactions
- Reactions with acids and alkalis



3. Creating bonds

Focusing on:

- How atoms form molecules and compounds with ionic, covalent and metallic bonds
- Structures formed through ionic and covalent bonding
- Nanoparticle technology



4. Electrolysis

Focusing on:

- Extractions of metals and electrolysis



End of year exam

Revisit
and
revise

2. The arrangement of elements

Focusing on:

- The periodic table, structure trends and its development
- Group 1, Group 7 and Transition metals



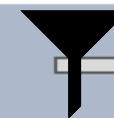
AP1

Revisit
and
revise

1. Mixtures and separating mixtures

Focusing on:

- The atoms, mixtures and compounds that make up matter.
- How to separate mixtures and how matter can change state.



Year 9 Chemistry C24

From year 8

To Year 10



Review and gap filling

8. Electrical circuits (Triple only in year 9)

Focusing on:

- The properties and measurement of electrical charge and how various components effect it.
- The construction of different circuits and their properties and uses.



7. Space

Focusing on:

- The formation of the solar system and stars
- The creation and expansion of the universe

End of year exam

Revisit and revise



4. Molecules and matter

Focusing on:

- The different states of matter and their properties.
- How matter changes state and the energy needed to allow change.
- What density is and how it can be examined.



5. Radioactivity

Focusing on:

- The structure of the atom
- Radioactive particles, their properties and uses.



6. Wave properties

Focusing on:

- The different types of waves and the properties of each one.
- Light waves and how they are affected by objects they hit
- The uses of waves in medicine and technology

2. Energy resources

Focusing on:

- The continuing demand for energy to supply the planet and population.
- Renewable energy sources, their advantages and disadvantages.



3. Energy transfer

Focusing on:

- Transfer of energy in greater detail
- How energy can be converted into power and work done
- The transfer of thermal energy



Revisit and revise

AP1

1. Conservation and dissipation of energy

Focusing on:

- The different stores of energy and how it can be transferred from store to store
- The fact that energy cannot be created or destroyed
- That energy can be useful or wasted and dissipated into its surroundings.



Year 9 Physics C24

From year 8

To Year 11



Review and gap filling

16. Genetics and inheritance (Triple only in year 9) Focusing on:

- Characteristics in organisms are controlled by genes
- Some disorders are inherited. These disorders are caused by the inheritance of certain alleles.



15. Reproduction and genetics (Triple only in year 9) Focusing on:

- Sexual reproduction involves the joining (fusion) of male and female gametes
- Genetic variation is a result of a combination of genes, formed from DNA



13. Hormonal control

Focusing on:

- How the body is controlled by hormones
- The use of feedback mechanisms to maintain a stable internal environment



14. Homeostasis in action (triple only) Focusing on:

- Homeostasis maintains optimal conditions for enzyme action and all cell functions



Revisit and revise

Trial exam Paper 1

12. The Nervous system

- Focusing on:
- How the body is controlled by nervous responses
 - The structure of neurons and how reaction times can be affected.



10. Defense against disease

- Focusing on:
- How animals use physical and chemical methods to defend against disease.
 - What drugs are and how they are developed



9. Plant disease (triple only)

- Focusing on:
- Plants can be infected by a range of viral, bacterial and fungal pathogens as well as by insects
 - Plants can be damaged by a range of ion deficiency conditions



AP1

Revisit and revise

11. Non-communicable disease

- Focusing on:
- Types of Non-communicable disease, the causes, the outcomes and the prevention of them.



Year 10 Biology C23

8. Communicable disease

- Focusing on:
- What health and disease is
 - A variety of diseases caused by pathogens and their causes, symptoms and treatments.



From year 9

To Year 11

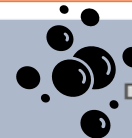


Review
and gap
filling

9. Crude oil and fuels

Focusing on:

- What hydrocarbons are, their structure and origin
- How crude oil is broken down and the hydrocarbons used for everyday use.



Trial exam Paper 1

7. Energy in reactions

Focusing on:

- Reactions that take or release energy into the surroundings
- Energy of bonds



8. Rates and equilibrium

Focusing on:

- Factors that effect the rates of reactions and the effects of catalysts on reaction rates
- Reversible reactions and equilibrium



Revisit
and
revise

6. Chemical calculations

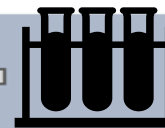
Focusing on:

- Relative atomic mass of compounds
- Balancing equations
- Calculating yield



AP1

Revisit
and
revise



4. Electrolysis

Focusing on:

- Extractions of metals and electrolysis



5. Chemical changes

Focusing on:

- The reactivity series and displacement reactions
- Reactions with acids and alkalis



Year 10 Chemistry C23

From year 9

To Year 11



Review and gap filling

12. Light (Triple only)

Focusing on:

- The effect of reflection and refraction on light waves
- Colour and lenses



11. Motion

Focusing on:

- The relationship between speed and distance travelled.
- Measurement and analysis of acceleration and velocity.



Trial exam Paper 1

Revisit and revise

8. Electromagnetic waves

Focusing on:

- The spectrum of electromagnetic waves and their properties.
- The uses and applications of the different electromagnetic waves.



9. Electromagnetism

Focusing on:

- The non-contact force of magnetism and its use to induce an electrical field.
- The use of electromagnets in a variety of devices



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10. Forces in balance

Focusing on:

- How forces act on other forces and the resulting effect
- How to measure forces and the outcomes of pairs of forces.



7. Electricity in the home

Focusing on:

- The use and measurement of electrical circuits in the home.
- How electricity is supplied to homes and industry, and how appliances convert electrical current into power.



AP1

Revisit and revise

6. Electrical circuits

Focusing on:

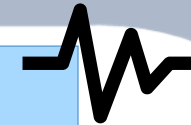
- The properties and measurement of electrical charge and how various components effect it.
- The construction of different circuits and their properties and uses.



5. Wave properties

Focusing on:

- The different types of waves and the properties of each one.
- Light waves and how they are affected by objects they hit
- The uses of waves in medicine and technology



Year 10 Physics C23

From year 9

To next steps



GCSE Exams

Paper 2 revision

Paper 1 revision

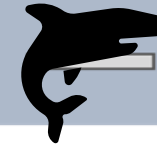
Trial exam Paper 2

Revisit and revise

20. Biodiversity and ecosystems

Focusing on:

- The impact of human activity is affecting the Earth and Biodiversity, and actions that can be taken to reduce it



19. Adaptation and competition

Focusing on:

- The organisation of organisms in an ecosystem
- How plants and animals are adapted to their environments, and how they compete to survive.

17. Variation and Evolution

Focusing on:

- How sexual reproduction leads to variation and mutations lead to natural selection.
- The use of genetic technologies in medicine and farming

18. Evolution and extinction

Focusing on:

- The historical theories associated with genetics evolution.
- The formation of fossils and how species can become extinct



16. Genetics and inheritance

Focusing on:

- Characteristics in organisms are controlled by genes
- Some disorders are inherited. These disorders are caused by the inheritance of certain alleles.



15. Reproduction and genetics

Focusing on:

- Sexual reproduction involves the joining (fusion) of male and female gametes
- Genetic variation is a result of a combination of genes, formed from DNA



14. Homeostasis in action (triple only)

Focusing on:

- Homeostasis maintains optimal conditions for enzyme action and all cell functions



Trial exam Paper 1

Revisit and revise

13. Hormonal control

Focusing on:

- How the body is controlled by hormones
- The use of feedback mechanisms to maintain a stable internal environment



Year 11 Biology C22

From year 10

To next steps



GCSE Exams

Trial exam Paper 2

Revisit and revise

Paper 2 revision

8. Rates and equilibrium

12. The Earth's atmosphere

9. Crude oil and fuels

13. The Earth's resources

1. Mixtures and separating mixtures

3. Creating bonds

4. Chemical calculations

2. The arrangement of elements

5. Chemical changes and Electrolysis



Paper 1 revision



Trial exam Paper 1

Revisit and revise

12. The Earth's atmosphere

Focusing on:

- The history and evolution of the Earth's atmosphere
- The causes and effects of greenhouse gases and global warming.



13. The Earth's resources

Focusing on:

- Renewable materials and recycling
- The treatment of water for drinking and waste

From year 10



Year 11 Chemistry C22

To next steps



GCSE Exams

6. Wave properties

8. Electrical circuits

9. Electricity in the home

10. Electromagnetic waves

11. Electromagnetism

12. Forces in balance

11. Motion

Paper 1 revision

1. Conservation and dissipation of energy

3. Energy transfer

2. Energy transfer

4. Molecules and matter

5. Radioactivity

Trial exam Paper 2

Revisit and revise



Paper 2 revision



Trial exam Paper 1

Revisit and revise

11. Motion

Focusing on:

- The relationship between speed and distance travelled.
- Measurement and analysis of acceleration and velocity.



8. Forces in balance

Focusing on:

- How forces act on other forces and the resulting effect
- How to measure forces and the outcomes of pairs of forces.



Year 11 Physics C22

From year 10