# Year 11 Summer Exams: Revision Guidance

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| **Circulation** | Year 11 Students |
| **Title** | Y11 PPE Revision Guidance for Combined Science |
| **Purpose** | To provide revision information for PPE1 Examinations |

**You will sit six papers for your final summer science exams. The numbers below are links to the specification. Links to each section of the specification can be access by clicking on the subject below.**

**Paper 1:** Biology

- 4.1 Cell Biology
  - 4.1.1 Cell Structure
  - 4.1.2 Cell Division
  - 4.1.3 Transport in Cells
- 4.2 Organisation
  - 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 Infection and response
  - 4.3.1 Communicable Diseases
- 4.4 Bioenergetics
  - 4.4.1 Photosynthesis
  - 4.4.2 Respiration

**Paper 2:** Chemistry

- 5.1 Atomic Structure and the Periodic Table
  - 5.1.1 A simple model of the atom, symbols, relative atomic mass, electronic charge and isotopes
  - 5.1.2 The Periodic Table
- 5.2 Bonding, Structure and the Properties of Matter
  - 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 bonding of carbon
- 5.3 Quantitative Chemistry
  - 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 Chemical Changes
  - 5.4.1 Reactivity of Metals
  - 5.4.2 Reactions of Acids
  - 5.4.3 Electrolysis
- 5.5 Energy Changes
  - 5.5.1 Exothermic and Endothermic Reactions

**Paper 3: Physics**

- 6.1 Energy
  - 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 Electricity
  - 6.2.1 Current, Potential Difference and Resistance
  - 6.2.2 Series and Parallel Circuits
  - 6.2.3 Domestic Uses and Safety
  - 6.2.4 Energy Transfers
- 6.3 Particle Model of Matter
  - 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 Atomic Structure
  - 6.4.1 Atoms and Isotopes
  - 6.4.2 Atoms and Nuclear Radiation

**Paper 4: Biology**

- 4.5 Homeostasis and Response
  - 4.5.1 Homeostasis
  - 4.5.2 The human nervous system
  - 4.5.3 Hormonal coordination in humans
- 4.6 Inheritance, variation and evolution
  - 4.6.1 Reproduction
  - 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 Ecology
  - 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

**Paper 5: Chemistry**

- 5.6 the rate and extend of chemical change
  - 5.6.1 Rate of reaction
  - 5.6.2 Reversible reactions and dynamic equilibrium
- 5.7 Organic Chemistry
  - 5.7.1 Carbon compounds as fuels and feedstock
- 5.8 Chemical analysis
  - 5.8.1 Purity, formulations and chromatography
  - 5.8.2 Identification of common gases
- 5.9 Chemistry of the atmosphere
  - 5.9.1 The composition 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 Using resources
  - 5.10.1 Using Earth's resources and obtaining potable water
  - 5.10.2 Life cycle assessment and recycling

**Paper 5: Physics**

- 6.5 Forces
  - 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 (Higher tier only)
- 6.6 Waves
  - 6.6.1 Waves in air, fluids and solids
  - 6.6.2 Electromagnetic waves
- 6.7 Magnetism and electromagnetism
  - 6.7.1 permanent and induced magnetism, magnetic forces and fields
  - 6.7.2 The motor effect

All Combined Science papers will be 1 hour and 15 minutes

The papers will contain a variety of question types including multiple choice, short answer questions, longer answer questions and practical skills questions. You must answer all questions in the paper.

**You will need a black pen, pencil, ruler and calculator for the exam.**

**Further detail and revision materials can be found here:**
Past Papers: Past Papers - PMT (make sure to select AQA)
Revision: Cognito Revision Videos (Make sure to select AQA)

# Year 11 Summer Exams: Revision Guidance

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|---|---|
| **Circulation** | Year 11 Students |
| **Title** | Y11 Summer Exam Revision Guidance for Triple Science |
| **Purpose** | To provide revision information for Summer Examinations |

**You will sit six papers for your final summer science exams. The numbers below are links to the specification. Links to each section of the specification can be access by clicking on the subject below.**

**Paper 1:** Biology

- 4.1 Cell Biology
  - 4.1.1 Cell Structure
  - 4.1.2 Cell Division
  - 4.1.3 Transport in Cells
- 4.2 Organisation
  - 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 Infection and response
  - 4.3.1 Communicable Diseases
  - 4.3.2 Monoclonal Antibodies (higher tier only)
  - 4.3.3 Plant disease
- 4.4 Bioenergetics
  - 4.4.1 Photosynthesis
  - 4.4.2 Respiration

**Paper 1:** Chemistry

- 4.1 Atomic Structure and the Periodic Table
  - 4.1.1 A simple model of the atom, symbols, relative atomic mass, electronic charge and isotopes
  - 4.1.2 The Periodic Table
  - 4.1.3 Properties of transition metals
- 4.2 Bonding, Structure and the Properties of Matter
  - 4.2.1 Chemical Bonds, Ionic, covalent and Metallic
  - 4.2.2 How bonding and structure are related to the properties of substances
  - 4.2.3 Structure and bonding of carbon
  - 4.2.4 Bulk and surface properties of matter including nanoparticles
- 4.3 Quantitative Chemistry
  - 4.3.1 Chemical measurements, conservation of mass and the quantitative interpretation of chemical equations
  - 4.3.2 Use of amount of substance in relation to masses of pure substances
  - 4.3.3 Yield and atom economy of chemical reactions
  - Using concentrations of solutions in mol/$dm^3$
  - Use of amount of substance in relation to volumes of gases
- 4.4 Chemical Changes
  - 4.4.1 Reactivity of Metals

    - 4.4.2 Reactions of Acids
    - 4.4.3 Electrolysis
- 4.5 Energy Changes
    - 4.5.1 Exothermic and Endothermic Reactions
    - 4.5.2 Chemical cells and fuel cells

**Paper 1: Physics**

- 4.1 Energy
    - 4.1.1 Energy changes in a system, and the ways energy is stored before and after such changes
    - 4.1.2 Conservation and dissipation of Energy
    - 4.1.3 National and Global Energy Resources
- 4.2 Electricity
    - 4.2.1 Current, Potential Difference and Resistance
    - 4.2.2 Series and Parallel Circuits
    - 4.2.3 Domestic Uses and Safety
    - 4.2.4 Energy Transfers
    - 4.2.5 Static electricity
- 4.3 Particle Model of Matter
    - 4.3.1 Changes of State and the Particle Model
    - 4.3.2 Internal Energy and Energy Transfers
    - 4.3.3 Particle Model and Pressure
- 4.4 Atomic Structure
    - 4.4.1 Atoms and Isotopes
    - 4.4.2 Atoms and Nuclear Radiation
    - 4.4.3 Hazards and use of radioactive emission and of background radiation
    - 4.4.4 Nuclear fission and fusion

**Paper 2: Biology**

- 4.5 Homeostasis and Response
    - 4.5.1 Homeostasis
    - 4.5.2 The human nervous system
    - 4.5.3 Hormonal coordination in humans
    - 4.5.2 Plant hormones
- 4.6 Inheritance, variation and evolution
    - 4.6.1 Reproduction
    - 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 Ecology
    - 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
    - 4.7.4 Trophic levels in an ecosystem
    - 4.7.5 Food Production

**Paper 2: Chemistry**

- 4.6 the rate and extend of chemical change
    - 4.6.1 Rate of reaction
    - 4.6.2 Reversible reactions and dynamic equilibrium

- 4.7 Organic Chemistry
    - 4.7.1 Carbon compounds as fuels and feedstock
    - 4.7.2 Reactions of alkenes and alcohols
    - 4.7.3 Synthetic and naturally occurring polymers
- 4.8 Chemical analysis
    - Purity, formulations and chromatography
    - Identification of common gases
    - 4.8.3 Identification ions by chemical and spectroscopic means
- 4.9 Chemistry of the atmosphere
    - 4.9.1 The composition and evolution of the Earth's atmosphere
    - 4.9.2 Carbon dioxide and methane as greenhouse gases
    - 4.9.3 Common atmospheric pollutants and their sources
- 4.10 Using resources
    - 4.10.1 Using the Earth's resources and obtaining potable water
    - 4.10.2 Life cycle assessment and recycling
    - 4.10.3 Using materials
    - 4.10.4 The Haber process and the use of NPK fertilisers

**Paper 2: Physics**

- 4.5 Forces
    - 4.5.1 Forces and their interactions
    - 4.5.2 Work done and energy transfer
    - 4.5.3 Forces and elasticity
    - 4.5.4 Moments, levers and gears
    - 4.5.5 Pressure and pressure differences in fluids
    - 4.5.6 Forces and motion
    - 4.5.7 Momentum
- 4.6 Waves
    - 4.6.1 Waves in air, fluids and solids
    - 4.6.2 Electromagnetic waves
    - 4.6.3 Blackbody radiation
- 4.7 Magnetism and electromagnetism
    - 6.7.1 permanent and induced magnetism, magnetic forces and fields
    - 6.7.2 The motor effect
    - 4.7.3 Induced potential, transformers and the National Grid
- 4.8 Space physics
    - 4.8.1 Solar system; stability of orbital motions; satellites
    - 4.8.2 Red shift

All Separate Science papers will be 1 hour and 45 minutes

The papers will contain a variety of question types including multiple choice, short answer questions, longer answer questions and practical skills questions. You must answer all questions in the paper.

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**Further detail and revision materials can be found here:**

Past Papers: Past Papers - PMT (make sure to select AQA)

Revision: Cognito Revision Videos (Make sure to select AQA)