

## Year 8 Final Exam content 2017

Your final exam in June 2017 will be based on the following topics:

### Biology

- Plants
- Food and digestion
- The circulatory system
- The respiratory system
- Reproduction and development

### Chemistry

- States of matter
- Elements and compounds
- Mixtures
- Material Changes

### Physics

- Measuring Motion
- Sound
- Light
- Magnetism

Resources:

Textbook- Cambridge Checkpoint Science by Peter D Riley

Edmodo- Powerpoints, Worksheets and notes

Final exam:

The science paper will be 90 minutes long.

The following learning objectives will be assessed in the paper:

1. Knowledge with understanding (50%)
2. Handling information and problem solving (35%)
3. Experimental skills and investigations (15%)

Final Report

Term 1 and 2 (60%)

Final Exam (40%)

## Year 9 Science Final Exam content 2017

Main resource: Cambridge Checkpoint Science 9 Coursebook by Sang, Jones, Freeman

The final exam in June 2017 is 40% of the entire year's grade and will be based on the following topics:

### Biology

- 1. Plants**
  - 1.1 Photosynthesis
  - 1.2 Mineral salts for plants
  - 1.3 Plants and water
  - 1.4-1.7 Flowers, Pollination, Fertilisation, Fruits
- 2. Living things in their environment**
  - 2.1-2.2 Plant and animal adaptations
  - 2.3 Ecology
  - 2.4 Food webs and energy flow
  - 2.5 Decomposers
  - 2.6 Populations
- 3. Variation and inheritance**
  - 3.1 Keys
  - 3.2-3.4 Variation and inheritance
  - 3.5 Selective breeding
  - 3.6-3.8 Charles Darwin and natural selection
- 4. Material properties**
  - 4.1-4.2 Structure of the atom
  - 4.3-4.4 Trends in element groups
- 5. Energy changes**
  - 5.1 Burning
  - 5.2-5.4 Endothermic and Exothermic processes and reactions
- 6. Reactivity**
  - 6.1-6.3 Metals and reactions with oxygen, water and acid
  - 6.4 The reactivity series
  - 6.5-6.6 Displacement reactions
- 7. Salts**
  - 7.1 What is a salt?
  - 7.2-7.3 Preparing salts using metals and carbonates
  - 7.4 Forming salts by neutralisation
- 8. Rates of reaction**
  - 8.1-8.2 Measuring the rate of reaction and its changes
  - 8.3-8.6 Surface area, temperature, concentration, catalysts
- 9. Forces in action**
  - 9.1-9.3 Density
  - 9.4-9.6 Pressure
  - 9.7-9.9 Turning effect and moments
- 10. Electricity**
  - 10.1-10.2 Static electricity and charges
  - 10.3 Electrons on the move
  - 10.4 Conductors and insulators
  - 10.5-10.6 Electric current in a circuit
  - 10.7-10.8 Changing circuits

**10.9 Components in parallel**

**11. Energy**

**11.1-11.3 How we use energy (fossil fuels, renewables and non-renewables)**

**11.4-11.7 Conduction, convection, radiation and evaporation**

## Year 10 Biology Final Exam content 2017

The internal final biology exam in June 2017 it will consist of three papers:

1. Multiple choice (30%)
2. Structured answers (50%)
3. Alternative to practical (20%)

The following learning objectives will be assessed in the three papers:

1. Knowledge with understanding (50%)
2. Handling information and problem solving (30%)
3. Experimental skills and investigations (20%)

Your final exam will be based on the following topics:

1. Characteristics and classification of living organisms
  - a. Characteristics of living organisms
  - b. Concept and use of a classification system
  - c. Features of organisms
  - d. Dichotomous keys
2. Organisation of the organism
  - a. Cell structure and organisation
  - b. Levels of organisation
  - c. Size of specimens
3. Movement in and out of cells
  - a. Diffusion
  - b. Osmosis
  - c. Active Transport
4. Biological molecules
5. Enzymes
6. Plant nutrition
  - a. Photosynthesis
  - b. Leaf Structure
  - c. Mineral requirements
7. Human nutrition
  - a. Diet
  - b. Alimentary canal
  - c. Mechanical digestion
  - d. Chemical digestion
  - e. Absorption
8. Transport in plants
  - a. Transport in plants
  - b. Water uptake
  - c. Transpiration
  - d. Translocation
9. Transport in animals
  - a. Transport in animals

- b. Heart
  - c. Blood and lymphatic vessels
  - d. Blood
- 10. Diseases and Immunity
- 11. Gas exchange in humans
- 12. Respiration
  - a. Respiration
  - b. Aerobic respiration
  - c. Anaerobic respiration

**Final report**

**Term 1 and 2 (60%)**

**Final exam (40%)**

## Chemistry Course Content for Y10

Year 10 is the first of two years for the IGCSE examination in chemistry. We plan to have the first 12 chapters of the textbook covered. The concepts that each chapter covers is as follows:

- The **three states of matter** with a particle view of how these states function.
- The **science of separating matter**, discussing several of the main separation techniques.
- The **atomic structure of the elements** and how that dictates the structure of the **periodic table**.
- An electronic view of the need of atoms to **bond** to form **salts, compounds and metals**.
- Chemical compounds, their **names, formulae and masses**, and the writing of **chemical equations**.
- Avogadro's constant and the **mole, concentration**, empirical and molecular **formulae, yield and purity** of compounds.
- The conventions of **oxidation state** of elements, and changes of these states during **redox reactions**.
- **Electrolysis** – using electricity to cause chemical processes.
- **Energy** concepts in chemistry in the form of **heat and electricity**, including reversibility and **chemical equilibrium**.
- Reaction **rates and catalysis** including the role of these concepts in **photochemistry**.
- **Acids, bases and salts**.
- The **periodic table** and why it is arranged the way it is.

### Resources.

- Text, Complete Chemistry for Cambridge IGCSE, chapters 1 to 12.
- Youtube and other internet sources presented in class, facebook and Edmodo.

### Assessment.

- Tests at the end of each chapter count out of 15 – 20 marks. These marks will be added

together providing the continuous component of the year grade. This component of the grade will contribute 60% of the final grade.

- The final exam will account for the other 40% of the year grade, and will be put together as follows:
- There will be three papers, to best simulate the IGCSE exam of year 11. The mark distribution between these three papers will also simulate the IGCSE system as follows:

Paper 2 (multiple choice) 20% (45min)

Paper 4 (theory) 50% (1h15min)

Paper 6 (alternative to practical) 30% (1h)

Within the papers, the questions will be designed to evaluate the three main assessment objectives of the course:

- Knowledge with understanding (50%)
- Handling information and problem solving (30%)
- Experimental skills and investigation (20%)

## Year 10 Physics - Final Internal Exam Content 2017

In an effort to prepare our Y10 students for the external IGCSE physics exams next year, our internal final physics exam in June 2017 will be squarely based on the content, style, skills and assessment objectives specified by [Cambridge International Examination Syllabus 2016-2018](#). Just like the IGCSE exam, it will consist of three papers:

1. Multiple choice (30%)
2. Structured answers (50%)
3. Alternative to practical (20%)

Within the papers, the questions will be designed to evaluate the three main assessment objectives of the course:

1. Knowledge with understanding (50%)
2. Handling information and problem solving (30%)
3. Experimental skills and investigations (20%)

The topics included in the exam will be limited to the material covered during this academic year and will include:

1. General Physics
  - a. Length and time, measurement techniques, units and their conversion.
  - b. Motion, speed, velocity, acceleration; motion graphs; free fall; air resistance and terminal velocity.
  - c. Mass and weight, Newton's laws, inertia.
  - d. Density of regular and irregular objects and its determination and consequences.
  - e. Forces and their effects, Hooke's law, velocity change in circular motion due to force, friction force.
  - f. resultant force, forces in equilibrium, scalars and vectors, **graphical vector addition**, friction force.
  - g. Turning effect of forces, principle of moments, conditions for mechanical equilibrium, centre of mass, stability of objects.
  - h. Momentum and impulse, conservation of momentum, applications including collisions.
  - i. Energy, work and power; energy types, energy conversions, conservation of energy, equivalence of energy and work, work against gravity, dissipation of mechanical energy due to friction, kinetic and potential energy calculations.
  - j. Energy resources and efficiency
  - k. Pressure, hydrostatic pressure, use of manometers and barometers.
2. Thermal Physics
  - a. Phases of matter
  - b. Molecular model of matter and its applications, including explaining temperature, pressure and evaporation.
  - c. Evaporation and its cooling effects, with explanations using the molecular (kinetic) model



- d. Combined gas law, including calculations
- e. Thermal expansion of matter, including applications
- f. Temperature measurements, thermometer types, thermocouple, thermistor, liquid-in-glass thermometer calibration, fixed points, linearity, range, sensitivity.
- g. Thermal capacity, specific heat capacity, with calculations
- h. Melting and boiling, specific latent heat of fusion and vaporisation.
- i. Heat transfer and thermal processes: conduction, convection, radiation, including applications.f