

Science Y10 and Y11

Name of Subject: Co-ordinated Sciences (Double Award)

Exam Board: Cambridge International Examinations

Syllabus Code: IGCSE 0654

Overall Aims and Objectives of the Syllabus: Co-ordinated Sciences gives learners the opportunity to study biology, chemistry and physics within a scientifically coherent syllabus and is accepted by universities and employers as proof of essential knowledge and ability. As well as a subject focus, the co-ordinated sciences syllabus enables learners to:

- better understand the technological world, with an informed interest in scientific matters
- recognise the usefulness (and limitations) of scientific method, and how to apply this to other disciplines and in everyday life
- develop relevant attitudes, such as a concern for accuracy and precision, objectivity, integrity, enquiry, initiative and inventiveness
- develop an interest in, and care for, the environment
- better understand the influence and limitations placed on scientific study by society, economy, technology, ethics, the community and the environment
- develop an understanding of the scientific skills essential for both further study and everyday life.

Specific Options/Components: The syllabus content that follows is divided into three sections: Biology (B1–B11), Chemistry (C1–C14) and Physics (P1–P15). **Candidates must study all three sections.**

Final IGCSE Assessment: -

Candidates who have studied the Core syllabus content, or who are expected to achieve a grade DD or below, should be entered for Paper 1, Paper 3 and Paper 6. These candidates will be eligible for grades CC to GG.

Candidates who have studied the Extended syllabus content (Core and Supplement), and who are expected to achieve a grade CC or above, should be entered for Paper 2, Paper 4 and Paper 6. These candidates will be eligible for grades A*A* to GG.

All candidates must enter for three papers.

Paper 1 45 minutes

A multiple-choice paper consisting of 40 items of the four-choice type.

Questions will be based on the Core syllabus content.

This paper will be weighted at 30% of the final total mark.

Or Paper 2 45 minutes

A multiple-choice paper consisting of 40 items of the four-choice type.

Questions will be based on the Extended syllabus content (Core and Supplement).

This paper will be weighted at 30% of the final total mark.

Paper 3 2 hours

A written paper consisting of short-answer and structured questions.

Questions will be based on the Core syllabus content.

This paper will be weighted at 50% of the final total mark.

Or Paper 4 2 hours

A written paper consisting of short-answer and structured questions.

Questions will be based on the Extended syllabus content (Core and Supplement).

This paper will be weighted at 50% of the final total mark.

Paper 6 1 hour

Alternative to Practical

Questions will be based on the experimental skills in Section 7.

The paper is structured to assess grade ranges A*A*–GG.

This paper will be weighted at 20% of the final total mark.

Course Outline:

The following main topics are listed in order for Y10 and Y11.

Biology

Year 10

B1. Characteristics of living organisms

B2. Cells

B3. Enzymes

B4. Nutrition

B5. Transportation

B6. Respiration

Year 11

B7. Co-ordination and response

B8. Reproduction

B9. Inheritance

B10. Energy flow in ecosystems

B11. Human influences on the ecosystem

Chemistry

Year 10

C1. The particulate nature of matter

C2. Experimental techniques

C3. Atoms, elements and compounds

C9. The Periodic Table

C10. Metals

C11. Air and water

C14. Organic chemistry

Year 11

C4. Stoichiometry

C5. Electricity and chemistry

C6. Energy changes in chemical reactions

C7. Chemical reactions

C8. Acids, bases and salts

C12. Sulfur

C13. Carbonates

Physics

Year 10

P1. Motion

P2. Matter and forces

P3. Energy, work and power

P4. Simple kinetic molecular model of matter

P5. Matter and thermal properties

P6. Transfer of thermal energy

Year 11

P7. Waves

P8. Light

P9. Electromagnetic spectrum

P10. Sound

P11. Magnetism

P12. Electricity

P13. Electric circuits

P14. Electromagnetic effects

P15. Radioactivity

Assessment: - Students take end of unit tests in all 3 components.

Resources: - textbooks

Complete Chemistry for Cambridge IGCSE[®] Revision Guide (Third edition)

Author **RoseMarie Gallagher** and Author **Paul Ingram** 978-0-19-830873-7

Complete Biology for Cambridge IGCSE[®] Revision Guide (Third edition)

Author **Ron Pickering** 978-0-19-830872-0

Complete Physics for Cambridge IGCSE[®] Revision Guide (Third edition)

Author **Sarah Lloyd** 978-0-19-830874-4

hyperlinks to key websites:

<http://www.cie.org.uk/programmes-and-qualifications/cambridge-igcse-sciences-co-ordinated-double-0654/>

<http://www.bbc.co.uk/education/subjects/zrkw2hv>