

Cambridge IGCSE **TWENTY-FIRST CENTURY SCIENCE**



Cambridge IGCSE Twenty-First Century Science

Cambridge IGCSE Twenty-First Century Science has been designed in response to a demand from employers, academics, teachers and students for a course which develops scientific literacy and problem solving skills. The course enables students to develop the knowledge and understanding they need to become active and informed citizens in a modern society, where science and technology play a key role in shaping our lives.

Cambridge IGCSE Twenty-First Century Science meets the needs of students who are not traditional scientists but who would like to follow a course which enables them to make sense of the science they come across in everyday life.

Students develop a broad understanding of the main scientific concepts that provide a framework for making sense of the world (Science Explanations); and also reflect on scientific knowledge itself (Ideas about Science), for example, how a scientific argument is developed, and the issues that arise when scientific knowledge is put to practical use.

For teachers, Cambridge IGCSE Twenty-First Century Science offers flexibility and encourages more varied teaching and learning strategies, and greater use of local and regional contexts.

Cambridge IGCSE – Foundation for success

Cambridge IGCSE is the world's most popular international qualification for 14 – 16 year olds. There are more than 70 subjects to choose from.

Students who attain IGCSE qualifications are well-educated, adaptable and thoroughly prepared for their next steps in education and employment. Cambridge IGCSEs provide a solid foundation for higher level national and international courses such as A/AS Levels, the IB Diploma and the US Advanced Placement programme.

Common characteristics of Cambridge IGCSE syllabuses

- IGCSE develops students' independent learning, problem solving and enquiry skills.
- IGCSE develops students' knowledge and understanding across key subjects, allowing schools to build a world-class curriculum.
- IGCSE has a high level of international recognition and acceptance by universities and colleges – a passport for progression.
- IGCSE's flexibility and cultural sensitivity help schools individualise the curriculum for each student.
- IGCSE's wide subject range, regular curriculum innovation and updating means schools can extend and develop their core curriculum as they wish.
- IGCSE is accessible for students with good English skills but who are not native English speakers. Schools who educate students bilingually are choosing IGCSE examinations to assess students.

Reporting of achievement

Cambridge uses an eight-point grade scale: A*, A, B, C, D, E, F and G. Grade A* is awarded for the highest level of achievement, and grade G indicates minimum satisfactory performance.

Assessment Objectives

Students should be able to demonstrate communications skills (including ICT), using scientific conventions (including chemical equations), and mathematics language (including formulae).

Students should also be able to:

- Demonstrate knowledge and understanding of science and how science works;
- Apply skills, knowledge and understanding;
- Demonstrate practical, enquiry and data-handling skills.

Scheme of Assessment

Students take either Core Papers 1 and 3 or Extended Papers 2 and 4. All students take Papers 5 and 6.

Core papers Grades C to G available	Extended papers Grades A* to G available
<p>Paper 1 (1 hour) Core multiple choice 40 multiple choice questions. This paper is weighted at 20% of the final total available marks.</p>	<p>Paper 2 (1 hour) Extended multiple choice 40 multiple choice questions. This paper is weighted at 20 % of the final total available marks.</p>
<p>Paper 3 (1 hour 30 minutes) Core written Core theory paper. 60 marks of short-answer and structured questions. This paper is weighted at 40 % of the final total available marks.</p>	<p>Paper 4 (1 hour 30 minutes) Extended written Extended theory paper. 60 marks of short-answer and structured questions. This paper is weighted at 40 % of the final total available marks.</p>
<p>Compulsory Paper 5 (1 hour 30 minutes) Grades A* to G available</p> <p>Section A: Comprehension This section of 30 marks requires candidates to answer several short and structured questions based on a passage, or two shorter passages.</p> <p>Section B: Practical procedures, data handling and analysis This section of 30 marks contains 3 structured questions covering practical aspects of the syllabus and associated data processing.</p> <p>The paper will total 60 marks and is weighted at 20% of the final total marks available.</p>	
<p>Compulsory Paper 6 Grades A* to G available</p> <p>Case Study – internally marked and externally moderated This is a school-based assessment where candidates carry out and report on an investigation of a local issue relating to the syllabus. The report carries a maximum mark of 24.</p> <p>This paper is weighted at 20% of the final total available marks.</p>	

Curriculum Content

The curriculum is based on a set of Science Explanations and Ideas about Science, presented in nine modules. Each module uses contexts that make it clear and of immediate relevance and interest to candidates. The contexts relate to candidates' everyday experienced and interests, for example, issues often in the news, or to work and leisure.

Biology	Chemistry	Physics
You and Your Genes	Air Quality	The Earth and the Universe
Keeping Healthy	Material Choices	Radiation and Life
Life on Earth	Food Matters	Radioactive Materials

Support and resources

The University of York Science Education Group (UYSEG) and the Nuffield Curriculum Centre have produced resources specifically to support the UK version of this syllabus. The resources comprise:

- Candidates' texts,
- Candidates work books;
- Teacher guide with suggested schemes of work and candidate activity sheets (in customisable format)
- Technician Guide
- ICT resources (for example, animations, video clips, models and simulations),
- Assessment materials
- A website for teachers and students, www.twentyfirstscience.org
- The UYSEG/Nuffield website for Twenty-First Century Science is at www.21stcenturyscience.org
- The OUP website address is www.oup.com/oxed/secondary/science/c21science

CIE offers a programme of Cambridge IGCSE workshops and distance learning for teachers, accompanied by support materials on the Cambridge Teacher Support website. More details are available on www.cie.org.uk/events

Full syllabus details are available from www.cie.org.uk/igcse