

## Assessment overview

All candidates take three papers.

Candidates who have studied the Core subject content, or who are expected to achieve a grade D or below, should be entered for Paper 1, Paper 3 and either Paper 5 or Paper 6. These candidates will be eligible for grades C to G.

Candidates who have studied the Extended subject content (Core and Supplement), and who are expected to achieve a grade C or above, should be entered for Paper 2, Paper 4 and either Paper 5 or Paper 6. These candidates will be eligible for grades A\* to G.

### Core candidates take:

**Paper 1** 45 minutes  
Multiple Choice 30%  
40 marks  
40 four-choice multiple-choice questions  
Questions will be based on the Core subject content  
Externally assessed

### Extended candidates take:

**Paper 2** 45 minutes  
Multiple Choice 30%  
40 marks  
40 four-choice multiple-choice questions  
Questions will be based on the Extended subject content (Core and Supplement)  
Externally assessed

### and Core candidates take:

**Paper 3** 1 hour 15 minutes  
Theory 50%  
80 marks  
Short-answer and structured questions  
Questions will be based on the Core subject content  
Externally assessed

### and Extended candidates take:

**Paper 4** 1 hour 15 minutes  
Theory 50%  
80 marks  
Short-answer and structured questions  
Questions will be based on the Extended subject content (Core and Supplement)  
Externally assessed

### All candidates take either:

**Paper 5** 1 hour 15 minutes  
Practical Test 20%  
40 marks  
Questions will be based on the experimental skills in Section 4  
Externally assessed

### or:

**Paper 6** 1 hour  
Alternative to Practical 20%  
40 marks  
Questions will be based on the experimental skills in Section 4  
Externally assessed

## Assessment objectives

The assessment objectives (AOs) are:

### AO1 Knowledge with understanding

Candidates should be able to demonstrate knowledge and understanding of:

- scientific phenomena, facts, laws, definitions, concepts and theories
- scientific vocabulary, terminology and conventions (including symbols, quantities and units)
- scientific instruments and apparatus, including techniques of operation and aspects of safety
- scientific and technological applications with their social, economic and environmental implications.

Subject content defines the factual material that candidates may be required to recall and explain. Candidates will also be asked questions which require them to apply this material to unfamiliar contexts and to apply knowledge from one area of the syllabus to another.

Questions testing this objective will often begin with one of the following words: *define, state, describe, explain* (using your knowledge and understanding) or *outline* (see the *Glossary of terms used in science papers*).

### AO2 Handling information and problem solving

Candidates should be able, in words or using other written forms of presentation (i.e. symbolic, graphical and numerical), to:

- locate, select, organise and present information from a variety of sources
- translate information from one form to another
- manipulate numerical and other data
- use information to identify patterns, report trends and draw inferences
- present reasoned explanations for phenomena, patterns and relationships
- make predictions and hypotheses
- solve problems, including some of a quantitative nature.

Questions testing these skills may be based on information that is unfamiliar to candidates, requiring them to apply the principles and concepts from the syllabus to a new situation, in a logical, deductive way.

Questions testing these skills will often begin with one of the following words: *predict, suggest, calculate* or *determine* (see the *Glossary of terms used in science papers*).

### AO3 Experimental skills and investigation

Candidates should be able to:

- demonstrate knowledge of how to safely use techniques, apparatus and materials (including following a sequence of instructions where appropriate)
- plan experiments and investigations
- make and record observations, measurements and estimates
- interpret and evaluate experimental observations and data
- evaluate methods and suggest possible improvements.

## Weighting for assessment objectives

The approximate weightings allocated to each of the assessment objectives (AOs) are summarised below.

### Assessment objectives as a percentage of the qualification

Assessment objective	Weighting in IGCSE %
AO1 Knowledge with understanding	50
AO2 Handling information and problem solving	30
AO3 Experimental skills and investigations	20

### Assessment objectives as a percentage of each component

Assessment objective	Weighting in components %		
	Papers 1 and 2	Papers 3 and 4	Papers 5 and 6
AO1 Knowledge with understanding	63	63	0
AO2 Handling information and problem solving	37	37	0
AO3 Experimental skills and investigations	0	0	100