

# Cambridge Secondary 1 Science

## Key Changes from 2011

Cambridge  
Secondary

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## Purpose of this document

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This document aims to provide an overview for teachers of changes to the Cambridge Lower Secondary Programme and Cambridge Checkpoint curriculum.

From 2012 onwards Cambridge Checkpoint assessments will be aligned to the revised curriculum.

Progression tests aligned to the revised curriculum will be available from September 2011.

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# Cambridge Secondary 1: Science

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## General Statement

Two different sources of information have informed the changes to the Cambridge Lower Secondary/Cambridge Checkpoint Science curriculum framework; the first is feedback from schools during training sessions and through evidence from exams; the second builds on continually developing research based on an understanding of how lower secondary school children can become more proficient in science and scientific enquiry.

The aim in revising the framework at lower secondary level was to make the stages more explicit by which the students progress to the standard expected in the Cambridge Checkpoint science test. This will help to prepare students more effectively for the demands of 16+ examinations such as the International GCSE or O Level which most of them go on to take.

From 2012, the objectives in this framework are assessed in revised Cambridge Checkpoint tests. The standard required in the Cambridge Checkpoint science test remains the same as it was, and the overall approach also remains the same.

The good news is that changes are mostly in emphasis and clarity rather than in content and standards. Most of the resources that you are currently using should continue to be appropriate for teaching the new syllabus and planning should not need significant changes. Crucially the standards that students are expected to reach, year on year, have not substantially changed. Most changes have been made to reflect the way that teachers were already delivering the programme.

## Terminology in the new programme

On the subject of terminology, the new programme replacing the Cambridge Lower Secondary Programme curriculum framework **and** the Cambridge Checkpoint curriculum framework will be known as **Cambridge Secondary 1**. Cambridge Checkpoint will be supported by Cambridge Secondary 1.

Each school year will be referred to as a '**stage**' because the ages at which students start their Primary and Secondary education varies around the world.

What were previously referred to as 'statements' in the existing curriculum framework will be known as '**Learning Objectives**' in the revised version.

## Changes to Content

There is very little change in the content. Those changes that have occurred have been made to improve clarity, reporting and measurement, to detail more fully the rational progression of teaching and learning or to keep up to date with modern issues such as the environment.

Some **strands** have undergone a rearrangement of content in order to create a better balance across the curriculum.

Mostly however, the revision has resulted in a **change in emphasis** in all the strands towards a more investigative approach by the students, causing slight rewording of learning objectives from *'a student should know'* to *'a student should explore how to'* or *'investigate how'*.

Most teachers will find that they already cover the areas within the suggested time scales and order.

As to particular changes, please find these outlined below:

### Scientific Enquiry

The single biggest change you will notice is the greater emphasis on Scientific Enquiry in the Cambridge Checkpoint science papers.

Although the Cambridge Lower Secondary Programme for science has always contained a Scientific Enquiry section in each year, this has not been tested to any great extent in the Cambridge Checkpoint papers. Now, these questions will be asked within the context of the Biology, Chemistry or Physics content and scientific enquiry will be reported on as a separate strand.

This change has been made in order to provide better continuity from the Cambridge Primary science programme, and to give students a strong base from which to move into their IGCSE science courses, where experimental skills and investigations are also tested in the examination.

### Biology, Chemistry and Physics

The great majority of the content is unchanged. There has been some reorganisation within each stage, but you will find that most learning objectives are identical to, or very similar to, a learning objective in the previous curriculum framework.

There is some new content. The most significant additions are two new sections in **Stage 7**:

- **Chemistry** now includes a section on The Earth.
- **Physics** now includes a section on The Earth and beyond.

There are also some new individual learning objectives. In **Biology Stage 7** there are new objectives relating to the role of microorganisms and the influence of humans on the environment. **Stage 8** now includes some learning objectives relating to human reproduction. There are also objectives about researching the work of scientists using secondary sources in **Stages 7** and **9**.

## Reworded learning outcomes

You will also see that many of the learning objectives have been slightly expanded. This does not normally add more content, but gives more guidance about how that learning objective should be covered. For example:

- In **Physics Stage 7**, the old learning objective '*Describe the effects of forces on motion*' has been changed to '*Describe the effects of forces on motion, including friction and air resistance*'.
- In **Biology Stage 8**, the old learning objective '*Describe the effects of smoking*' has been changed to '*Describe the effects of smoking, including use of secondary sources*'.

## Teaching the Framework

If you have already been teaching the Lower Secondary Science programme, you will be able to continue to use virtually all of the materials that you have already developed. You will not need to change the sequence in which you cover particular topic areas, unless you choose to do so.

You will need to ensure that your scheme of work includes plenty of opportunity for students to develop their Scientific Enquiry skills. It is intended that the Scientific Enquiry objectives should underpin most of the work that is done in the subject content areas.

You will need to add the new topics of The Earth (Chemistry Stage 7) and The Earth and Beyond (Physics Stage 7) to your scheme of work. You should also check whether a change of emphasis or new content is required for other learning objectives that have been added or reworded.

Teachers therefore need to:

- Review the new Curriculum Frameworks and note any areas that will need to be worked into existing lessons
- Implement the new investigative and experimental approach to Biology, Chemistry and Physics by incorporating Scientific Enquiry skills throughout the curriculum
- Check whether there are any new areas of knowledge required of teachers, according to your school's particular circumstances, for example 'The Earth' or knowledge of scientists who explored the solar system.

## Changes to Testing

### Progression Tests

Progression tests are being revised to align with the new curriculum frameworks and will be available from September 2011. As previously, Progression tests will be available for stages 7 and 8; new tests are available for stage 9.

## Cambridge Checkpoint Tests

Cambridge Checkpoint will be available testing stages 7 – 9. These papers will be very similar in style to the previous ones, and you will see that most of the questions in the Specimen Papers have been drawn from previous Checkpoint papers. The biggest change that you will notice is the inclusion of questions, or parts of questions, testing the Scientific Enquiry learning objectives.

Science will be assessed using two papers. Each paper will be taken in a 45 minute session.

Both papers will contain short, structured questions totalling 50 marks each. The questions will demand a variety of skills including recall of information and application of scientific knowledge.

All the questions on both papers will be compulsory. As far as possible the questions will be arranged in difficulty throughout each paper and will cover the content of Stages 7 to 9.

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