

Cambridge O Level sciences syllabus updates: Video FAQs

We created videos to explain the updates to the Cambridge O Level science syllabuses for examination from 2023. After viewing the videos, teachers submitted their questions to us between 13th and 24th July 2020. Our team reviewed the questions and they have provided the responses below.

Questions for all sciences

When and where are the updated syllabuses available?

They will be published from September 2020. Please check the [Cambridge O Level](#) syllabus pages.

Does the new syllabus apply to students in 2022?

The revised syllabus is for examination in June and November 2023.

When will the endorsed textbooks for these revised syllabuses be available?

Our Endorsement Partner, Hodder, will publish textbooks for these syllabuses from March 2021. Further details about the textbooks can be found on our public website or the publisher's website.

When will the teacher resources be available?

The following resources will be available to download from the [School Support Hub](#).

Resource	Available
Scheme of Work	End of July 2020
Teacher and Learner Guides *	End of July 2020
<i>* all Learner Guides will be further updated in September 2020 after the specimen papers and mark schemes have been released.</i>	Cambridge O Level Physics and Cambridge O Level Biology Learner Guide - August 2020
Resource Plus	Available now
Specimen Paper Answers	September 2020

Will there be any practice papers for the new syllabus? If so, when will these be available?

Specimen assessment materials, including question papers and mark schemes, will be published in September 2020. When they are live, you can find these on the [Cambridge O Level](#) syllabus pages.

Some additional practice questions on the new topic of space physics for Cambridge O Level Physics, and further examples of planning questions, will be published later in 2020. These will be published on the [School Support Hub](#) on the individual subject webpages.

Will there be any resources to specifically prepare students for Paper 3 (Practical Test) or Paper 4 (Alternative to Practical)?

Our Endorsement Partner Hodder, will publish textbooks that provide full coverage of the syllabus content, including practical and experimental skills.

Will the paper style and marks allocated to different papers remain the same?

Most of our students take all three Cambridge O Levels in science. For this reason, we have made the assessment model consistent across all three sciences, so students know what to expect in the exams and to provide a positive and fair assessment experience.

Here is an assessment overview. The exact changes for each science, from old to new, are highlighted in the videos.

2023 assessment overview		
Cambridge O Level Biology (5090)	Cambridge O Level Chemistry (5070)	Cambridge O Level Physics (5054)
Paper 1 Multiple choice 40 marks 1 hour	Paper 1 Multiple choice 40 marks 1 hour	Paper 1 Multiple choice 40 marks 1 hour
Paper 2 Theory 80 marks 1 hour 45 minutes	Paper 2 Theory 80 marks 1 hour 45 minutes	Paper 2 Theory 80 marks 1 hour 45 minutes
Paper 3 Practical Test 40 marks 1 hour 30 minutes	Paper 3 Practical Test 40 marks 1 hour 30 minutes	Paper 3 Practical Test 40 marks 1 hour 30 minutes
Paper 4 Alternative to Practical 40 marks 1 hour	Paper 4 Alternative to Practical 40 marks 1 hour	Paper 4 Alternative to Practical 40 marks 1 hour

Cambridge Assessment International Education

The style of the questions in each paper will remain the same. We are removing optional questions from Paper 2, to ensure a comparable and positive assessment experience for students, and to reduce the reading load in the paper. Planning questions are being introduced into some of the Paper 3 and Paper 4 tests.

How were schools and teachers involved in the redevelopment?

We consulted widely with our schools and teachers. Our regional teams organised workshop sessions in a series of locations early in the year with science teachers, who gave us very helpful feedback and told us more about how the courses work for their students. We ran online surveys to find out more from teachers about what they liked about the Cambridge O Level sciences, their suggestions and what they wanted to change. Our online surveys are sent to all schools who take a qualification, so every school who takes Cambridge O Level sciences can give us feedback.

Is the syllabus content the same as Cambridge IGCSE?

We have reviewed and revised Cambridge IGCSE and O Level sciences at the same time. We've made sure they both offer excellent preparation and progression to Cambridge International AS & A Level. They are well-balanced, manageable and well-rounded courses, and are based on best practice in terms of content and assessment.

For 2023, Cambridge IGCSE and O Level sciences both have new syllabuses and specimen assessment materials. We have considered best practice during the redevelopment, and made sure we have a consistent approach to content, language and comparability of standards across the two suites of sciences. Many topics appear in both sets of science syllabuses. However, the assessment and qualifications remain distinct. For example, Cambridge IGCSE includes a tiered assessment structure, while Cambridge O Level doesn't.

What are the guided learning hours? Is there a recommended number of units for teaching per school year?

We design Cambridge O Level syllabuses based on students having approximately 130 guided learning hours for each subject during the course, but this is for guidance only. The number of hours a learner needs to achieve the qualification may vary according to local practice and their previous experience of the subject.

The Schemes of Work will include a suggested teaching plan and examples of how the content can be delivered over the school year. The Scheme of Work is for guidance only.

Will there be training to learn more about the syllabuses?

Please check the [Events and training calendar](#) regularly for updates on when training and online sessions become available.

Questions for Cambridge O Level Biology (5090)

DNA structure and function have been added to the revised syllabus. Is there any content on replication, transcription and translation of protein?

DNA structure and function is a new topic that we have added to the revised Cambridge O Level Biology (5090) syllabus. The syllabus requires students to know that a gene is a length of DNA that codes for a protein, but no further detail on protein synthesis is included. The detail of nucleic acids and protein synthesis is more appropriate for higher study and is included in the Cambridge International AS & A Level Biology (9700) syllabus.

Will there be any support material about immunity and disease control in the Teacher's Guide?

The Teacher's Guide provides general teaching guidance. It also specifically supports you on how to integrate English language learning into your teaching, in order to help learners be better prepared for the exams.

There are activities and resources suggested for all topics in the syllabus content available in the Scheme of Work. This will be available by the end of July 2020.

Where can we find the detailed information on topics that have been added or changed?

The syllabuses will be published in September 2020. The inside back cover of the syllabus summarises the changes that we have made. When it's available, please review the syllabus thoroughly to be aware of where syllabus content has changed.

In the topic of coordination and response in plants, are the details of plant growth hormones included?

Coordination and response in plants is a new topic in the revised Cambridge O Level Biology (5090) syllabus. It includes tropisms and the role of auxin in controlling shoot growth, but plant growth hormones are not included.

Why were the topics of support, movement and locomotion removed?

One of the key considerations for our qualifications is making sure they can still be taught within the guided learning hours available. We also closely considered the progression to Cambridge International AS & A Level Biology topics, and identified topics that were essential to support students' further studies, and some that were not.

By introducing new topics such as DNA structure and function, and ecosystems and biodiversity, it was necessary to balance out the content by removing some other topics, where it was appropriate considering the course as a whole. Support, movement and locomotion was chosen because it was a small, specifically focused topic. Considering the structure and function of the forelimb was less required for progression and allowed more space for the newly introduced topics.

Questions for Cambridge O Level Chemistry (5070)

What video support is available for delivering Cambridge O Level Chemistry practical science lessons?

There are a variety of practical science videos that support the 'Experimental skills and investigations' assessment objective (AO3) available on [Resource Plus](#).

Please could you elaborate on the requirements for planning questions in the Alternative to Practical (ATP) paper?

The experimental skill of planning has always been part of the syllabus and the assessment objectives. From 2023, planning skills will be assessed every exam series with a common question on Paper 3 and Paper 4.

Why isn't the reactivity series or ions and charges of elements provided to students?

Students are required to recall the reactivity series as part of questions assessing the 'Knowledge with understanding' assessment objective (AO1). They should also be able to recall the ions formed by elements.

Questions for Cambridge O Level Physics (5054)

Why are Kepler's laws, centripetal force and gravitation not being covered within the section on space physics?

We believe that a detailed quantitative mathematical approach is best placed at Cambridge International AS & A Level. We also need to make sure that the number of guided learning hours is appropriate and space physics, as a new topic area, has an appropriate amount of teaching time available. We consulted with teachers, schools and subject experts to make sure the content is appropriate, well balanced and enables progression to further study.

Do students need to be able to resolve vectors?

We only require students to be able to determine the resultant of two vectors at right angles, by calculation or by a graphical method. Resolution of vectors is not required.

Why was the topic of temperature removed?

One of the key considerations for our qualifications is making sure they can still be taught within the guided learning hours available. We also closely considered the progression to Cambridge International AS & A Level Physics topics, and identified topics that were essential to support students' further studies.

We have introduced some new topics, such as space physics and momentum, based on feedback from teachers. We agreed that these were important and engaging topics to include, so we reduced other content where appropriate.

Most thermometers used today are digital and the skills associated with temperature measurement are practical. They are found in the practical assessment section of the syllabus. Full details of how temperature is included in the content and the practical requirements are in the syllabus.

What is the scope of space physics?

Space physics covers two main areas. The first area is the Earth and the Solar System, including analysing and interpreting planetary data. The second area focuses on stars and the Universe, including the life cycle of a star. Full details on the content is included in the syllabus.