

Cambridge O Level Physics (5054) – a summary of the changes

Video transcript

Spencer Radford:

Welcome to this video on the changes to Cambridge O Level Physics. The new syllabus will be released in September 2020 for examination from 2023. My name is Spencer Radford and I'm a Development Manager in our Qualifications Development team.

I'll begin by explaining some of the changes to the subject content. Following numerous requests from schools, we've introduced a brand new and exciting section on space physics. Also, in our first section on motion, forces and energy we've included the subtopic of momentum. Again, having listened closely and responded to feedback from our schools. In order to introduce these new sections, it's been necessary to remove some topics and learning objectives. To do this, we carefully considered the progression from Cambridge Lower Secondary through to Cambridge International AS & A Level. We made sure that the subject content remained coherent and balanced, as well as being appropriate when compared to other qualifications at this level of study. In most other areas, the subject content remains largely the same, but with more clarity regarding the expectations of the learning objectives.

Moving on to looking at the overview of the assessment model: there is no change to Paper 1, the multiple-choice paper. Paper 2 (theory) will see a slight increase in the number of marks from 75 to 80. The duration of Paper 3, the practical test, has been reduced by 30 minutes from 2 hours to 1 hour 30 minutes. The structure of this paper will change significantly to allow for this reduction in time, and I will say more about this shortly. Paper 4, the alternative to practical, will now closely mirror Paper 3. The increase in the number of marks, in both Papers 3 and 4, will allow for greater differentiation between learners and also allow for more part marks to be awarded.

So, there will still be four papers for physics with a number of marks and the durations standardised across the three science subjects. This means that students who sit all three subjects will have the same assessment experience for each, which is fair for all learners. Changes have been made to reflect the best practice in assessment, which is important for progression to Cambridge International AS & A Level and beyond.

The other, more significant change to the structure of the assessment is the removal of optional questions from the theory paper. This follows research into optionality and consultation with schools. Research is showing that optional questions for content based subjects do not benefit learners. It increases the reading load, causes difficulties in terms of comparability, and many students do not perform better as a result of optionality. The majority of schools were also in favour of removing these questions. Therefore, for examination from 2023, there will be no separate sections to this paper. All questions will now be compulsory and will be short answer and structured questions.

Planning questions will now be included in Paper 3 and Paper 4, each series. Being able to demonstrate the ability to successfully plan an experiment is a key skill which we want to assess. These questions already work well in our other science qualifications and support progression of these skills to Cambridge International AS & A Level. The example shown is indicative of how this may be set out, with some reading required first, followed by a list of available apparatus. The learners are then given guidance in the form of bullet points on what to include in their answer. Whilst there will be no separate sections to paper three, practical test, we're structuring the paper in a way that will enable schools to best organise the administration of this paper. There will be three practical questions and the planning question. Schools will be encouraged to allow learners 45 minutes in total for the two 10-mark questions and a further 45 minutes in total for the longer, practical question and the planning question. The 2023 specimen paper will exemplify this new style of paper.

Paper 4, the alternative to practical, will be a close mirror of Paper 3 with questions in the same context, but without the need for learners to do any experiments. The planning question will be identical in both papers.

Now I'm going to talk with Glenys Williams, who is the Product Manager for this syllabus from our Assessment division. Can I ask you Glenys, what do you see as the biggest change to this revised syllabus?

Glenys Williams:

Thank you Spencer and hello everybody. Well the biggest difference is the introduction of space physics where we ask students to draw together ideas from most of the other sections, specifically mechanics, electromagnetism and radioactivity. Space provides a fantastic context for learners to apply their physics, speaking to their imagination and interests. Space physics and the origin of the universe is the basis for much of the current research in physics and gives them a real feel for the processes of physics, how models are developed and refined, working together in teams, devising sensors to detect data at a distance, and so forth. We also believe that the near solar system will be the next great frontier, necessitating cooperation on a global scale, and we feel that the introduction of space physics fits right in with the ethos of Cambridge International.

Spencer Radford:

What do you think makes this syllabus ideal for today's learners?

Glenys Williams:

Well, apart from the space physics, we have modernised the syllabus, removing older contexts and introducing much more modern applications. In addition, we've refined the language of some of the learning objectives to make them more specific and accessible. Lastly, we've introduced a lot of support material, such as a detailed breakdown of the practical skills we expect students to acquire, and a table of the electrical symbols we expect students to be able to recognise and use.

Spencer Radford:

Thanks very much. I'll now be asking David Harrison from our Curriculum Support team to explain what support will be available for teachers.

David Harrison:

Thank you. My name is David Harrison and I'm managing the development of all the teaching and learning resources supporting this new syllabus. There'll be a comprehensive support package produced which will help teachers deliver an engaging and thorough teaching programme for their learners.

The scheme of work provides a medium-term teaching plan from which detailed lesson plans can be produced. It covers all learning objectives in the syllabus with suggested activities and links to additional resources. New for this edition of the scheme of work are extension activities that are designed to stretch the most able learners and prepare them for Cambridge International AS & A Level study.

Additionally, links to relevant Resource Plus video experiments and teaching packs are included throughout the scheme of work and I'll talk about these in a little while. The scheme of work will be available to download from the School Support Hub in July 2020. Guides for both teachers and learners will also be available to download in July 2020. The Teacher Guide provides extra support for teachers delivering the course.

In particular, it shows how English language learning activities can be integrated into a programme of science teaching, which should better prepare learners for their exams and further study. The Learner Guide gives learners a basic introduction to the syllabus in a very accessible manner. The guide covers information such as what they will study and how they will be examined. It also contains a revision checklist that learners can use to check their understanding and prepare for their exams. For this new syllabus, Cambridge has produced an additional premium resource that hasn't been available for Cambridge O Level Sciences in the past; it's called Resource Plus. Resource Plus is already available to use from the School Support Hub. Resource Plus contains hundreds of specially commissioned experiment videos and associated teaching packs. These contain detailed lesson plans and worksheets designed to encourage the development of practical science skills, and prepare learners for the practical papers, Cambridge International AS & A Level Sciences and higher education study. Even when teachers and their learners don't have access to a lab, Resource Plus can be used to support skills development, so log in and start using Resource Plus today.

After the Specimen Papers are produced in September 2020, the set of Specimen Paper Answers will also be produced. They'll provide example answers for each of the Specimen Paper questions, along with examiner commentaries on the answers and marks. Teachers can use the answers, commentaries and marks to gain a better understanding of the standard required in examinations so that learners can be better prepared when they sit their first exams. Our publishing partner, Hodder, will be publishing endorsed resources for the syllabuses in March 2021. Further details about the textbooks can be found on our public website or the publisher's website.

The last resource to publish from Cambridge's standard support package will be the Example Candidate Responses after the first exams are sat in the summer of 2023. Example Candidate Responses each contain actual student answers to exam questions with a commentary provided by the examiner and a marks breakdown. Cambridge aims to have these available to download from the School Support Hub by the following January 2024, so look out for these documents when they publish. So that summarises the support Cambridge will be providing for this new syllabus. Don't forget to look around the School Support Hub for the many other resources available to use in your teaching and learning. Also, why not take part in the teacher forums, which are also found on the School Support Hub, or even consider entering learners for the science competition? Good luck.

Spencer Radford:

I hope that this video has helped you to understand the key changes for Cambridge O level Physics for first assessment from 2023. Thank you for watching. If you have any questions or feedback you can submit these using the form below.

The form is open for two weeks, after which we will publish further information and guidance.