

Parent Guide

Welcome to Edexcel's GCSEs in science

You may be aware that the UK's science GCSEs recently underwent redevelopment. As one of the country's main awarding organisations, we have redeveloped our GCSE science qualifications. Now that our science GCSEs have been accredited by Ofqual, the country's independent regulator for education, we are offering schools a suite of qualifications that has been written by highly experienced teachers, with the input of professionals across science education.

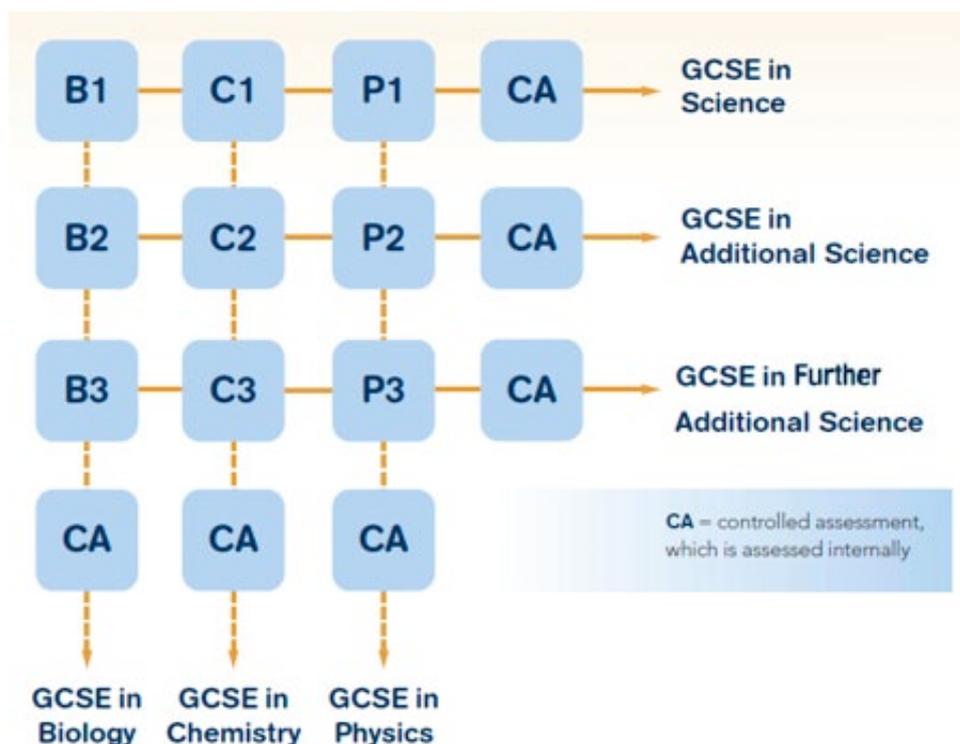
This short guide is designed to let you know a little about the science GCSEs. We give you an outline of how they are structured, what sorts of exams your child will face, and what they can then do with the GCSE science qualifications that they gain.

It's worth talking to teachers at your child's school to get the full picture. Different schools run their science curriculum in very different ways and the teachers will be able to tell you how they run the teaching in their school. In some cases, each class is taught all of its science by the same teacher; in others there are different specialist teachers in the three separate sciences –biology, chemistry and physics. In some cases, your child will learn all three sciences in parallel; in other schools, the teaching is arranged in blocks so that all of one science is taught in Term 1, a second science in Term 2 and the final science in Term 3.

Whichever way the teaching is organised, your child should spend roughly equal amounts of classroom time on the three different sciences and they'll take exams in the three sciences separately. The exact exams that are taken will depend on the GCSEs offered by your child's school. Again, schools separate into different types. Some schools enter students for the three separate sciences, meaning that the students can gain GCSEs in Biology, Chemistry and Physics. The slightly more common approach is for students to study about two-thirds of the total course and to take exams leading to two GCSEs: GCSE in Science and GCSE in Additional Science. Either allows a student to move on to study at A level if they achieve good grades. These two patterns are the most common, but by no means the only routes including a 'top-up' GCSE Further Additional Science qualification that can be taken after Science and Additional Science GCSEs – so, again, talk to your child's school if you are unsure and want further information.

What GCSEs do we offer?

It's probably best to look at a diagram of how the sciences are organised at GCSE so that you know what is available and which exams your child will take.



The commonest route is to start by studying the first unit of each science. This leads to the student following the top row of the diagram and taking three exams – B1 (biology), C1 (chemistry) and P1 (physics). To complete the GCSE in Science qualification, they'll also carry out a controlled assessment, an internally assessed piece of work related to a practical.

Having done GCSE in Science, the most likely next stage is to move on to GCSE in Additional Science – the second row of the diagram. The principle is the same as for GCSE Science – your child will learn equal amounts of biology, chemistry and physics and take an exam in each (B2, C2 and P2) and a controlled assessment. They can go on to complete another GCSE in Further Additional Science in order to achieve three GCSEs in Science. However, it's possible that, after GCSE in Science, your child may be moved onto a different course, for example a BTEC Level 2 in Applied Science, especially if their interest appears to be more applied (work related) approach to science.

What GCSEs do we offer?

Students can achieve three GCSEs in Science through study of Science, Additional Science and Further Additional Science. The advantages of this route are that they can delay their choice of whether they will go on to do three GCSEs in Science, perhaps even until after they have taken their first GCSE in Science at the end of Y10. However, they can also follow the route represented by the dotted vertical lines in the diagram and achieve three GCSEs in Biology, Chemistry and Physics. Both routes follow the same curriculum content and are assessed in the same way. If your child is taking the Biology, Chemistry and Physics path, they will need to take three exams and a piece of controlled assessment at the end of the course to gain each of the GCSEs. To take GCSE in Biology as an example, this means taking the exams B1, B2 and B3 and the controlled assessment. The advantage of this route is that grades will reflect student performance in individual subjects rather than across all sciences.

What are the courses and the exams like?

The courses have been developed carefully by practising teachers and examiners in line with the GCSE science criteria produced by Ofqual. There is a balance in the content of the courses: there is plenty of coverage of important scientific background and theories. Also, there are opportunities for students to look at how scientific knowledge is used and applied in the modern world, for example to develop better strains of crops, to produce better materials for construction and to use in medicine to make CAT scanners. Science has always addressed many “big issues” and students will also look at key issues that they will face in the coming years, whether global warming, the use of nuclear power, or the development of cloned or genetically modified organisms. The philosophy of the course is to develop young adults who have the scientific background to understand these issues as well as to engage with them.

The exam papers that your child will sit follow a common format. The exam papers each last one hour and they are marked out of 60. We’ve worked hard to make sure that the question papers look the same. So, it doesn’t matter if your child is taking Biology Paper 1, Chemistry Paper 2 or Physics Paper 3, the question papers will have a familiar feel to them. More importantly they’ll look similar to any papers that may have been used as practice papers. We feel that this is important: exams can be a stressful experience for some students, and an exam paper which looks familiar may help to inspire confidence.

Each question paper contains six questions. These questions will each have slightly more demanding question parts as the question is completed; and there will also be an incline in difficulty as your child works through from Q1 to Q6.

Our exam papers contain a range of different sorts of questions, designed to allow all candidates to show what they have learnt in the course. So, there will be some multiple choice questions, although most of the questions will be “open” questions, with space for the candidates to write their answer. These will typically be worth between 1 and 3 marks. There will also be some questions worth more marks, which will require a longer response. This type of question is new to the GCSE this time around, and your child will need to be familiar with these questions and practice this style.

What are the courses and the exams like?

Your child can take the exams at different tiers; Foundation (aimed at grades C to G) and Higher (aimed at grades A* to D). The papers they sit will most likely be determined by the school. Students can take any combination of Foundation and Higher papers. For example, if they are weak at biology but stronger at chemistry and physics, they may sit a Foundation paper in biology and a Higher paper in chemistry and physics. The marks gained in each will all count towards the overall grade awarded.

The controlled assessment tasks are set by Edexcel and marked by your child's teacher. Controlled assessment tasks are not tiered – all students sit the same tasks. They can be taken anytime in the academic year so your child's school will choose when is most convenient for them. Controlled assessments can be submitted to Edexcel for moderation (to validate the school's marking) in June. Most of the controlled assessment work is done in class whilst under supervision, and tasks will take around four lessons of time to complete. They will centre around a piece of practical work; students will be required to plan an investigation, carry out a practical, and analyse their own, and others', data. Controlled assessment tasks have a one year shelf life. This means that they can't be stored indefinitely in school and then submitted – they must be submitted for moderation in the year in which they are valid.

When do the exams and controlled assessments take place?

The course was officially launched for teaching from September 2011 and the rules changed for students taking examinations from 2014 onwards, the changeover point for when GCSEs must be taken in a linear way (i.e. all assessments taken at the end of the course).

For GCSE in Additional Science, the first certification is June 2013. This is also the first time students can submit controlled assessment for GCSE in Additional Science.

If your child is taking GCSE Further Additional Science after taking Science and Additional Science then the first time this qualification can be taken is June 2014.

If your child is taking the separate sciences, they will need to take three externally assessed units for each subject and one controlled assessment, e.g. for Biology they would need to take B1, B2, B3, and a controlled assessment. The Unit 1 and Unit 2 exam availability is exactly the same as for those students doing GCSE in Science or GCSE in Additional Science. The first time that the Unit 3 exams – B3, C3 and P3 – can be taken is in June 2013.

Your child may also be studying BTEC Level 2 Applied Science, or may be considering moving to BTEC Level 2 Applied Science. Our website provides more information on the support we provide to help teachers teach BTEC alongside GCSE Science. See www.edexcel.com/science2011 for more information, or talk to your child's teacher.

You may also be aware of the new English Baccalaureate (eBacc) that has been introduced by the government as a method of measuring performance. Our GCSE Sciences form part of this measure. Find out more at our website, or from your child's school.

What will my child do after GCSE?

At the end of Year 11, many students will finish their studies in science. These students will have gained valuable GCSEs in science, which are well respected by employers, who view good grades for GCSEs in science as an indication that a person has mastered a difficult discipline. Of course, for some careers, having GCSEs in science subjects is either very useful or, in some cases, compulsory. One such career is being a primary school teacher, where a GCSE pass at A* - C in a science subject is a requirement. Of course, a good proportion of students enjoy their sciences at GCSE so much that they go on to study more science, usually at AS and A2 Level or BTEC Level 3. Again, this may lead them into a job straight from school, where their science qualifications are again very impressive; or it may lead them into a variety of university courses, either science or non-science based. Other than the "pure" sciences, science A Levels are an essential requirement for those wanting to study for any medical discipline – including veterinary medicine – as well as for courses such as engineering. Sciences are also highly advantageous for students thinking of courses in architecture or psychology.

What sort of support materials are there for my child?

Resources can be split into two areas: ones that Edexcel have produced specifically to accompany the course and resources produced elsewhere.

The most important support for students are the textbooks that accompany the course and ActiveLearn, independent online revision and exam preparation for students.

The Edexcel student textbooks are written by highly-experienced authors with the help of the senior examiners and are full of hints and tips to help your child understand key areas. There are also exam-style questions to help your child to improve their responses. Lastly, they also give support in the skills required to succeed in the controlled assessments. ActiveLearn provides supported practice of exam-style questions with particular focus on improving answers to longer text questions, as well as checking and improving their understanding of science. Other science textbooks are available, some of which we have endorsed.

Most other Edexcel resources – such as the ActiveTeach CD-ROM – are really designed for teachers. More information on these resources can be found on our website at www.edexcel.com/science2011.

As always, there will be a variety of revision guides on the market. Do check that any guide you buy is suitable for the Edexcel GCSE – the other awarding organisations do have some very different content, especially at Additional Science and separate science level.

Lastly, the internet is always a good source of information, when used wisely. Of course, there is the Edexcel website (www.edexcel.com), which has a variety of different materials to help students and teachers through the GCSE courses. Please note that some of the material on this website is confidential and only accessible to teachers who have the relevant passwords. You'll also find links on the website to one of Edexcel's most useful support networks: Ask Edexcel. The Ask the Expert section of this allows you to put questions directly to one of our senior examiners.

- www.examzone.co.uk
- www.resultsplusdirect.co.uk

We look forward to helping your child fulfil their full potential.