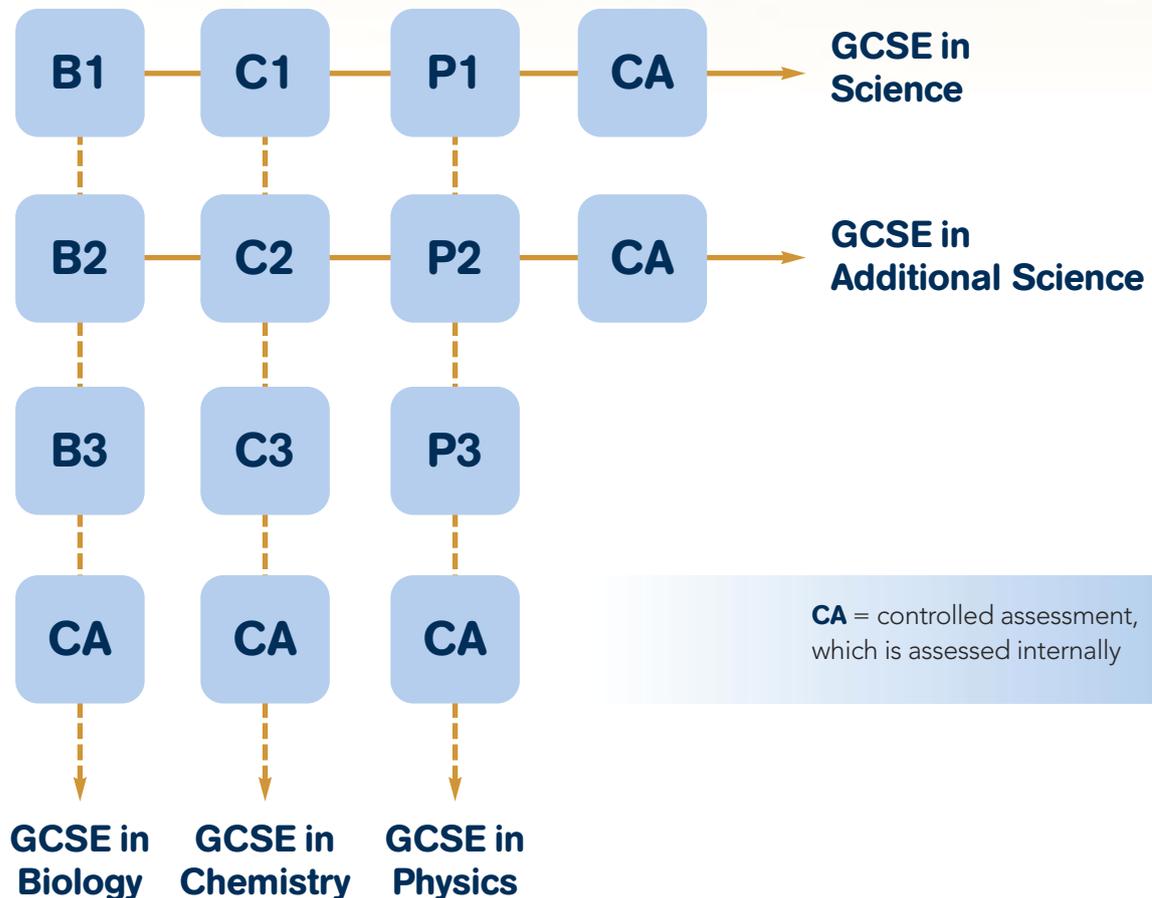




Assessment overview

Overall qualification structure

Outlined below is the structure of GCSE in Science, GCSE in Additional Science and GCSEs in Biology, Chemistry and Physics:



In order to cash-in for any GCSE, candidates must sit three examined units and one controlled assessment unit. There are some simple rules governing the nature of the controlled assessment:

- Candidates taking GCSE in Science must take the controlled assessment unit for GCSE in Science
- Candidates taking GCSE in Additional Science must take the controlled assessment for GCSE in Additional Science
- Candidates taking GCSE Biology (or Chemistry or Physics) cannot use the controlled assessment associated with B1 (or C1 or P1); but can use the controlled assessment task associated with either B2 or B3 (or C2 / C3 or P2 / P3).

Sitting patterns

We would expect to see three common sitting patterns:

1. Candidates taking GCSE in Science only – these candidates would sit B1, C1, P1 and the controlled assessment for GCSE in Science
2. Candidates taking GCSE in Science and GCSE in Additional Science – these candidates would sit B1, C1, P1 and the controlled assessment for GCSE in Science; then B2, C2, P2 and the controlled assessment for GCSE in Additional Science
3. Candidates taking separate sciences – using Biology as an example, these candidates would sit the B1, B2, and B3 exams, and the Biology controlled assessment unit, using a controlled assessment task from either B2 or B3.

NB Candidates CANNOT use the controlled assessment task from B1 when taking separate sciences.

Candidates taking other routes through the qualification need to be aware of the rule that **no examined unit can be used to count against more than one qualification**. In other words, if a candidate takes GCSE in Science and then goes on to take GCSE in Chemistry, then he or she must sit C1 twice – once for GCSE in Science and again for GCSE in Chemistry. These two attempts must be made in different examination series.

To make administration simpler for centres, the same code will be used for these common units.

It is also worth noting that GCSE in Science followed by a single separate science (e.g. GCSE in Chemistry) is not currently sufficient for School and College Achievement and Attainment Table (SCAAT) points, nor would it count towards the English Baccalaureate.

Externally examined units will be available in November, March and June examination series. The controlled assessment tasks are valid for one year. The tasks will be released one year in advance of them becoming 'live'. Each controlled assessment task will clearly show the moderation windows for which it is valid. These windows will always be May/June and the following October/November. Please note that there is no moderation window in March.

Re-sits and the terminal requirement

Please note that there are two rules set down for all new GCSE subjects, including the Edexcel suite of science GCSEs.

1 Only two results for any unit are allowed in the 'bank' at any time.

This is usually referred to as the 'one re-sit' rule, as a candidate who sits a unit and then re-sits it now has two results in the module bank for that unit. This means that candidates cannot keep re-sitting a unit in the hope of getting a higher mark.

This rule should be borne in mind, particularly by any candidate taking a route which means that a unit must be taken twice, e.g. GCSE in Science and GCSE in Physics. The two attempts at this unit must come from two different examination series.

A candidate intending to cash-in for GCSE in Science and GCSE in Physics needs P1 to cash-in for GCSE in Science and a different P1 result to cash-in for GCSE in Physics. Let's say that a candidate sits P1 in November 2012, scoring 20 uniform marks; and then sits P1 again in June 2013, scoring 50 uniform marks. If the candidate enters for cash-in for both GCSE in Science and GCSE in Physics in June 2013, then

he/she must use these two results (as the unit bank can only hold two results). This means, essentially, that a candidate could be forced into taking a poor result if cashing-in for both GCSEs at the same session, as he/she must take both of the two marks allowed in the unit bank. The solution is easy: the candidate should try to cash-in for GCSE in Science and GCSE in Physics in different series. So, if the candidate only cashes in GCSE in Science in June 2013, using the better mark of 50 uniform marks, this mark can only be re-used if a later attempt is made to retake GCSE Science. However, the candidate has now got space in the module bank to re-sit P1 to count towards GCSE Physics.

Once a student has cashed in, then the module bank is essentially reset and the candidate has two further attempts at each unit: a 'first' sit, and then a re-sit. In cases such as this, the candidate only has access to the two most recent results when wishing to cash-in.

2 Candidates must take at least 40% of the examination in the series in which they request a cash-in (the so-called terminal requirement).

Each GCSE unit, irrespective of the qualification and whether it is an externally or internally assessed unit, is worth 25%. So, this rule means that candidates must sit two of the units in the series in which they cash-in.

Therefore, a candidate aiming to cash-in for GCSE in Science in June 2013 could take B1 in November 2012, C1 in March 2013 and then P1 and the controlled assessment in June 2013. If the candidate sat B1 and the controlled assessment in November 2012, then C1 in March 2013 and then P1 alone in June 2013, the cash-in would be ruled ineligible and no result would be issued.

It is essential, therefore, that your department plans its route through the qualification carefully. The usual rule about the best result in the unit bank counting towards the cash-in still applies, but if a candidate is re-sitting a unit in order to meet the terminal requirement, then **the re-sit mark must be used**.

You can use **ResultsPlus**, our free online results analysis service, to help plan revision and focus on areas requiring improvement. Use the skills maps provided as part of the question-by-question analysis to identify and target specific topics and questions that need further attention.

Cash-in example

To illustrate this, let's look at a candidate sitting the following units:

November 2012: B1 (40 UMS); C1 (50 UMS);
March 2013: P1 (50 UMS).

The candidate wants to submit the controlled assessment in June 2013 and cash-in for GCSE in Science. However, as the controlled assessment is worth only 25%, this does not meet the terminal requirement and so the candidate must re-sit another unit in order to meet the requirement and be able to cash-in.

The candidate decides to re-sit B1 in order to meet the terminal requirement. In June 2013, the results are B1 (25 uniform marks) and controlled assessment (50 uniform marks). The candidate's final uniform mark score is therefore 25 (B1) + 50 (C1) + 50 (P1) + 50 (controlled assessment task) = 175.

The candidate may not use the higher mark of 40 uniform marks for B1, as the re-sit of the B1 unit has to be counted to meet the terminal requirement.

The other important thing to realise with the terminal requirement is that a candidate who has cashed-in, but is looking to improve his/her grade, must re-sit two or more units when attempting this process.

Our recommendation is that candidates submit the controlled assessment in their terminal series, along with at least one of the examined units.

Please note that the controlled assessment tasks are replaced each year. Each task can only be submitted for moderation at the times shown on its front cover (the main May/June moderation window and the following October/November). Centres must ensure that the work is valid in the series in which they submit it for moderation.

Note, especially, that a cash-in can only be requested in a series in which candidates sit at least 40% of the assessment. This has two particular knock-on effects:

1. A candidate who has already cashed in for a particular GCSE, and wishes to re-sit in order to improve his/her grade, must sit two or more units as part of the re-sit and at least two of these units must be used to make the new grade.
2. A candidate cannot fill up the unit bank and then request a cash-in at a later stage from banked units. If you have candidates who may sit either (1) GCSEs in Science and Additional Science; or (2) GCSEs in the three separate sciences, then you will need to be very careful here. Let's consider a candidate who has already sat B1, C1, P1, B2, C2 and P2 with a view to taking B3 and a controlled assessment, C3 and a controlled assessment and P3 and a controlled assessment, and cashing-in for the separate sciences. If this candidate now decides to take GCSEs in Science and Additional Science then, in order to fulfil the terminal requirement, this candidate will have to re-sit a unit of GCSE in Science and a unit of GCSE in Additional Science when submitting the controlled assessments for both GCSE Science and GCSE Additional Science to cash-in for these two GCSEs.

Structure of the exam

Each exam has the same structure: the paper will be one hour long and be worth 60 marks. The total will then be converted to a uniform mark of 80.

Each exam paper will contain six questions, each question finding its 'home' in a topic of the unit. Some questions may ask candidates to draw on knowledge across the topics in the unit.

The first pair of questions will be worth approximately 8 marks, with the next pair being approximately 10 marks and the final pair approximately 12 marks.

Each individual question will be ramped in difficulty. This means the starting question part is likely to be a straight forward one-mark question and the demand for each part will increase towards the end of the question. It is likely that the increasing demand will be reflected by an increase in mark allocation for the question parts.

In addition, there will also be ramping across the question paper, so that Q6 will have a higher overall demand than Q1. However, each question – even Q6 – should have an accessible beginning so that all candidates have access to all questions and candidates of lower ability do not lose confidence by facing questions of high difficulty early in the paper. For these reasons, there are no 'common' questions between Foundation and Higher Tier. Instead, the differentiation between the tiers comes from the level of demand of the questions and, to some extent, from the types of question and mark allocations for the questions.

The papers will contain a variety of question types: multiple choice, sentence completion, matching and short answers. The short answer questions will usually be worth between one and three marks, although candidates may encounter a four-mark question on the Higher Tier papers.

At Higher Tier, about one-quarter of the paper will be made up of one-mark questions; this will rise to around one-third for Foundation Tier. The remainder of the papers will be made up of two and three-mark questions (with Foundation Tier having more two-mark than three-mark questions), the likelihood of a four-mark question at Higher Tier; and then the six-mark extended writing questions.

The extended writing questions are worth six marks. It is most likely that they will appear in Q5 and Q6; although there may be examples of an extended writing question appearing in Q4, allowing Q5 to be comprised of a greater number of shorter structured questions. The extended writing questions will give candidates the opportunity to show depth of knowledge, or to consider a scientific issue or practical scenario. It is likely that there will be some stimulus material to prompt the candidate's answer – this stimulus material should be accessible enough that even lower ability candidates will be encouraged to attempt these longer questions. The marking of these questions will be through a levels-based mark scheme, with candidates being placed into one of three levels based on the scientific content of the response. Each level will be a two-mark band (1 – 2 marks; 3 – 4 marks and 5 – 6 marks). The final mark within the level may also be influenced by the quality of written communication in the answer.

Tiering

The new GCSE in Science has two tiers: Foundation Tier for those candidates working at grades G – C; and Higher Tier for those performing at D – A*. One of the hardest decisions is where candidates performing around the C/D level should be tiered.

This will depend on your judgement, taking into account:

- the nature of the different exam papers and whether the candidate is best suited to one-mark answers, or can often earn marks in longer answer questions
- how the candidate would deal with Higher Tier papers – by rising to the challenge or by becoming despondent due to the difficulty
- how likely it is that, between entry and examination, the candidate can improve performance to allow a good attempt at a Higher Tier paper
- how well the candidate scores on practice papers at both tiers.

If a candidate is very good at two of the sciences, but weaker at the third, then remember that a good performance in one or more papers can compensate for poorer performance in another.

As you can see in the uniform mark scale examples on the following pages, Higher Tier candidates do get rewarded with uniform marks, even if they are below the official D grade cut-off for the Higher Tier papers.

Many teachers will be familiar with tiered papers where some questions – those aimed at the C/D candidates – are common to both tiers. In this specification, there are no common questions between the tiers, but there are differences between the question papers:

- The Foundation Tier papers have questions with lower mark allocations - more 1-mark questions, with the bulk of the remaining questions being worth 2-marks, with one or two 3-mark questions and the two extended writing questions
- The Higher Tier papers have fewer 1-mark questions, then more of a range of 2-mark and 3-mark questions, and often a 4-mark question, as well as the extended writing questions
- The language of the papers and the degree of support given to candidates to help them access the paper is also greater in Foundation Tier.

Candidates can take a combination of Foundation and Higher papers, and this may be of use for candidates who are less strong in one of the three sciences. Candidates entered for Foundation Tier can only achieve a grade C for that paper, and this will limit the uniform marks they can score.

Remember that, if you put a candidate in for a unit and he or she does better or worse than expected, you are free to change the tier of entry by having the candidate re-sit at a different tier at the next examination session. **However, a candidate who sits a paper (e.g. B1) at Higher Tier and re-sits it at Foundation Tier has filled up both slots in the unit bank, so this will count as a re-sit.**

Reporting of marks

Each externally-assessed unit is marked out of 60 and, at Awarding, the raw mark will be converted to a uniform mark out of 80.

The internally-assessed units are marked out of 50 (for Additional Science and separate sciences), but out of 48 for GCSE Science. These raw marks, after moderation, will also be converted to uniform marks out of 80.

The uniform mark scale is always arranged (at GCSE) so that 90% of the total uniform mark is an A*, 80% is an A, 70% is a B and so on. Remember that the conversion to uniform mark is not as simple as just saying "40/60 must be 40 x 80/60 to get it to a UMS mark out of 80". Uniform mark conversion works by fixing all grade boundary marks (A, C and F) and, using these fixed points, scaling all other marks between these grade boundaries.

This table shows uniform marks against grades for each unit.

Untiered uniform mark score (unit)	72	64	56	48	40	32	24	16
Foundation Tier uniform mark score (unit)			(55)	48	40	32	24	16
Higher Tier uniform mark score (unit)	72	64	56	48	40	36		
Grade	A*	A	B	C	D	E	F	G

Remember that the different tiers target different grades, and so the range of uniform marks available to candidates at each tier is different. A candidate taking a Foundation Tier paper can only score a C grade at the very best and so the range of UMS marks available on the paper would be from 0 to 55. For Higher Tier candidates, the highest possible UMS mark is 80. The Higher Tier paper is aimed at A* – D (and an allowed E) so the 'normal' range of uniform marks goes down to 36 uniform marks. Higher Tier candidates who do not score enough marks to be awarded an E grade are not given a uniform mark of 0 – they are given uniform marks on a scale from 36 down to 0, depending on their raw mark, although the grade reported to them will still be 'U'.

You may be more used to the total uniform mark score for a paper being 100 (and the numbers therefore being a little easier) – for technical reasons this was not used for GCSE in Science. However, this table will enable you to match the uniform mark score on a paper to a grade with ease.

This table shows full uniform marks against qualification grades

Untiered uniform mark score (GCSE)	288	256	224	192	160	128	96	64
Grade	A*	A	B	C	D	E	F	G

As each GCSE comprises four units, the **uniform mark** total for each GCSE is 320. Again, 90% of the total **uniform marks** would yield an A* grade, 80% an A grade and so on.

For an example, a teacher estimates that a candidate is working around the C/D boundary and performs better in biology and chemistry than he does in physics. The candidate is therefore entered for B1 and C1 at Higher Tier, but P1 at Foundation Tier. His results (in uniform marks) are 48 for B1 (C grade), 42 for C1 (D grade) and 34 for P1 (E grade). The candidate also scores 40 for the controlled assessment, making a total for GCSE Science of 164 uniform marks (D grade).

If the same candidate had been entered for all the units B1, C1 and P1 at Higher Tier, it is likely that his performance on the more demanding P1 Higher Tier paper would be poorer. As the decrease in uniform marks below D grade is quite rapid at Higher Tier, he may achieve a lower uniform mark on the Higher Tier paper than on the Foundation Tier. Hence, if this candidate scored the same uniform marks of 48 for B1, 42 for C1 and 40 for the controlled assessment, but only 28 uniform marks for P1, the overall uniform mark for GCSE Science would be 158 (E grade).