Frequently Asked Questions: GCSE Mathematics B

1. How do the stages in this specification work?

The content of the GCSE Mathematics B (J567) specification is presented in six unique stages – four at each tier with two common stages - as shown below:

<table>
<tr><td rowspan="2">Foundation Initial Stage</td><td rowspan="2">Foundation Bronze Stage</td><td>Foundation Silver Stage</td><td>Foundation Gold Stage</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>same as
Higher Initial Stage</td><td>same as
Higher Bronze Stage</td></tr>
<tr><td colspan="2"></td><td colspan="2"></td><td>Higher Silver Stage</td><td>Higher Gold Stage</td></tr>
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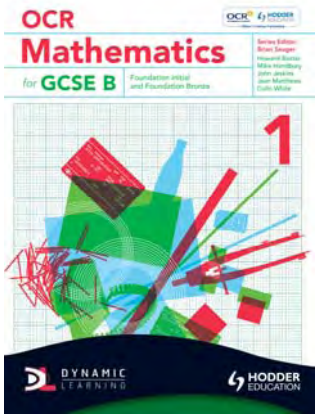
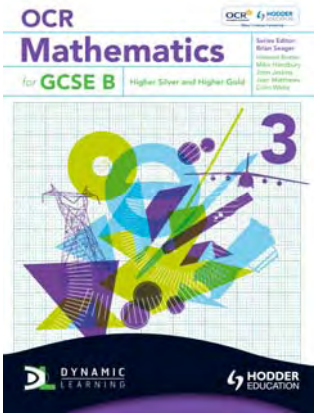
OCR's Publisher Partner for Mathematics B, Hodder Education, has produced a series of resources to support the stages, with each resource covering two of them.





http://www.hoddereducation.co.uk/ocrgcsemathsb

The rationale behind presenting the content in this way is outlined both in the specification and the Teachers' Handbook. The Teachers' Handbook also gives practical guidance about starting points and what proportions of questions on the final papers are drawn from each of the stages.

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2. Is this specification linear or modular?

This is a linear specification. Candidates either enter for the Foundation tier or the Higher tier and take two papers - one non-calculator and one where use of a calculator is expected. The two papers have to be taken in the same exam series and the overall grade is determined by the total mark for the two papers.

However the content is presented in stages for the purposes of teaching. OCR recognises that weaker learners within the tier will need to start at 'the beginning' and stronger ones could start part way through, as there is no need to repeat content that is already well understood. The stages are graduated in the level of demand so that sensible starting points can easily be identified. Learners' progress can therefore be tracked against the stage content, assessed using OCR's sample Stage Tests and recognised by awarding Stage Certificates. The tests and certificates can be accessed via our secure Interchange service at https://interchange.ocr.org.uk – log in, move the cursor over "GCE, GCSE, Principal Learning…" and then select "Sample Assessment Materials."

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3. Which stage should learners start on?

There are two suggested indicators for determining starting points given in the Teachers' Handbook – Key Stage 3 levels and target GCSE grades. Teachers should use such indicators only in conjunction with their own professional judgement.

The Teachers' Handbook can be found here:
http://www.ocr.org.uk/download/sm/ocr_39185_sm_gcse_2010_teach_hb.pdf

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4. How many stages should we cover?

At the end of the course, learners will be entered for papers that cover the entire content for the appropriate tier and as such should be taught as much of the relevant content as possible. Learners in centres that are subject to National Curriculum statutory requirements are also entitled to the entire programme of study for mathematics.

However the structure of this course is intended to allow teachers to tailor the level of teaching to the needs of learners and the course can be sped up or slowed down as appropriate.

Each stage is expected to take 50 to 60 teaching hours so in a typical two-year GCSE course there is scope for covering three stages (though this could be a little rushed) or cover two stages in depth and then 'cherry-pick' the most appropriate topics from a third. However prior knowledge of any content will reduce the teaching time for that stage, and the spiral nature of the stages means that some aspects can be taught more quickly, as they will have been touched upon in the previous stage.

You should keep in mind that since the assessments will include questions from all four stages from the tier, students working at the 'top end' of a tier will need to practice questions on topics they may not have covered for a fairly long time.

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5. How can I track, assess and recognise progress against the stages?

A spreadsheet is available on the Mathematics B web page that lists the content for each stage on its own tab: this can be copied and adapted to fit into any APP system your centre is using.

Stage Tests are available to centres through OCR's secure Interchange service, and instructions for accessing these can also be found on the Mathematics B web page.

Learners can be awarded a Stage Certificate where appropriate on successful completion of a stage. Like the Stage Tests themselves, these are available through Interchange and can be printed and signed by the teacher.

Hodder Education, the publisher partner for Mathematics B, also produces a range of interactive assessment tools as part of their Dynamic Learning resources –
visit http://www.dynamic-learning.co.uk/ for details of these.

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6. What are the target grades for the stages?

There are no hard-and-fast rules for these, but the stages were designed with the following in mind:

Foundation Initial	Foundation Bronze	Foundation Silver / Higher Initial	Foundation Gold / Higher Bronze	Higher Silver	Higher Gold
G, F, E	F, E, D	E, D, C	D, C, B	C, B, A	B, A, A*

So, for example, a learner who has a very strong understanding of the Foundation Bronze stage could be said to be working at around grade D standard.

The Stage Tests could be used as part of a teacher's judgement of which of the grades best fits a learner's current level of attainment. The Stage Tests are each of 60 marks and, in fairly general terms, one could say that a score of **45-60** would indicate the **top** grade, **30-44** the **middle** grade and **15-29** the **lower** grade. A score of less than 15 would indicate that a learner has not engaged with the content of the stage in a significant way.

Please note these Stage Tests have not been through a formal awarding process and these figures are for general guidance – please interpret them fairly liberally.

You will have noticed the "B" that appears for the Foundation Gold stage and it is worth clarifying this. The stage is named Foundation Gold because it consists of content targeted at the top end of the Foundation Tier, for example

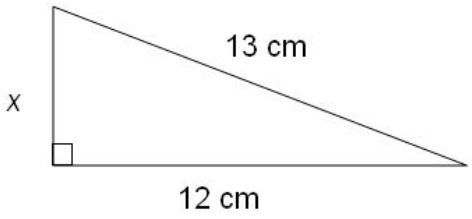
- basic index laws
- percentage change
- HCF and LCM
- *n*th term expressions
- inequalities

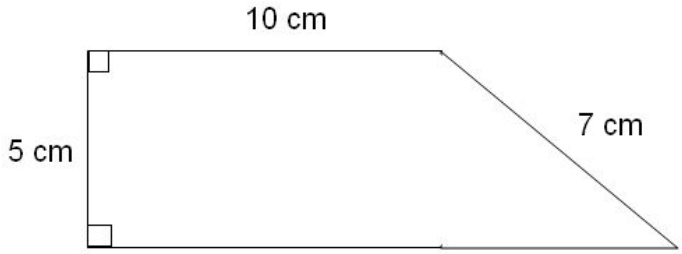
[continues overleaf

- plotting quadratic graphs from their equations
- errors in measurements
- Pythagoras' theorem in 2-D
- simple combined transformations
- experimental probability
- mean from grouped data

There is no implication that these are "grade B" topics as they could all be assessed on the Foundation tier question papers, albeit at the top end. But it can be claimed that a student who demonstrates a high level of competence at these topics, and can score over 75% on the Foundation Gold Stage Test, is working at or towards grade B, even though this grade is not available to them on the final papers at Foundation tier.

Simply understanding Pythagoras' theorem (for example) and being able to apply it in simple cases is one thing, and being able to use it in context or to solve a problem is another. Looking at the two situations below, finding the missing length in the triangle on the left is a fairly straightforward 2-D Pythagoras' question. The one on the right (find the perimeter) requires a fair bit more thought - it's not as obvious what is required at first glance.





It is then probably fair to say that a learner who is very secure in the content of the Foundation Gold stage, can use and apply the content confidently, and can score highly on the Stage Test, is working at or around grade B – and such a learner should be given the opportunity to progress to study Higher Silver and ultimately take the Higher tier papers at the end. It would be a shame if a learner, who is very competent at all the above, were denied the chance to achieve a B grade by being entered for what they would see as unchallenging Foundation tier papers.

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7. Which tier should learners be entered for?

Guidance concerning tier of entry for the final examinations can be found on pages 8 and 9 of the Teachers' Handbook, available on the OCR website.

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8. What are the grade boundaries for the specimen and mock papers?

There are no grade boundaries as such for the specimen and mock papers as they have not been used in a live examination series. However the following 'design thresholds' are kept in mind when setting papers:

Higher tier: Grade A circa 70% ; Grade C circa 35%
Foundation tier: Grade C circa 75% ; Grade F circa 35%

The following thresholds for all grades could result from these design thesholds:

Higher tier:

A*	88%
A	70%
B	52%
C	35%
D	21%
E	14%

Foundation tier:

C	75%
D	62%
E	49%
F	35%
G	21%

Please note, as with the Stage Tests, the specimen papers and mock papers have not been taken in a live examination series and the above is for illustrative purposes only.

Grade thresholds are determined at the end of the marking for each examination series, using a range of qualitative and quantitative information, and cannot be known in advance.

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