Edexcel GCSE maths advance information

Information here accompanies the summary tables produced by 3rd Space Learning (also available in the open resources folder 'GCSE 2022')

Foundation:

Number and ratio

From this list, it is likely that we'll see a two-part standard form calculation question, with part (a) converting either to or from standard form, and part (b) carrying out a calculation on Paper 1.

We might also expect a procedural product of prime factors question. Watch out for the error interval question on Paper 2, as students often get caught out by these!

The other number skills named are pretty broad key skills for Foundation candidates. Edexcel notes 'overlap of topic areas' with number. This is presumably as skills in the ratio section on the specification may be needed to answer some of the number questions, such as ordering fractions, decimals and percentages.

Direct proportion appears on all three papers, so it's possible that this could include interpretation of a proportion equation, potentially linked to the straight line graph or currency conversion mentioned on Paper 2.

Algebra

On Foundation, many of these topics are likely to be assessed in a procedural manner, so this could be a good place to target some last-minute revision. It would be a good idea to include linear inequalities in all revision work on linear equations, ensuring that students aren't put off by seeing that inequality symbol.

The 'quadratic equation' could be either solve by factorisation, or solve an equation in the form $ax^2 = b$. Forming an expression followed by a linear equation could indicate a 'form and solve' type context-based question. As linear sequences appear twice in the series, we should expect one to be finding the nth term.

Geometry and measure

A couple of nice steers here; it might be a good idea to begin memorising exact trig values with students now. As there's no accompanying inclusion of 'trigonometry', it is probable that this is just stating an exact value.

Volume of a cylinder appearing on Paper 1 (non-calculator) indicates that students may need to be familiar with leaving their answer in terms of π.

Probability and statistics

Edexcel seems to like frequency trees, so it's not a surprise to see this again. I think that frequency trees appear on most exam series for the 2015 specification!

'Probability' as a statement is a bit wide-ranging to be massively useful, and students need to be familiar with basic probability skills anyway. Venn diagrams appear in the Higher list but are not included at Foundation, so this may be one to skim over.

In statistics, there is nothing surprising here – some straightforward topics in terms of charts and graphs to focus on for some (hopefully!) easier marks.

Higher:

Number and ratio
Some of the more basic number and ratio skills also appear in the Foundation list, indicating that these are fairly likely to be included in the crossover questions, which appear on both papers. For example, there could be a product of primes question towards the start of Paper 1.
There are a few nice hints on straightforward topics to work on here, including simplifying surds and bounds. Paper 1 explicitly states 'equations of proportion', which may mean that the proportion work on Paper 2 is more context-based, or possibly graphical.

Algebra
There's a pretty comprehensive list available for Higher. It's looking like Paper 2 is going to have a good chunk of the Higher-level algebra.
'Form an equation' could require students to form the linear equation mentioned. As this isn't in the crossover content, it's likely to be towards the more difficult end of linear equations work.
Students always struggle with quadratic inequalities, so this is one to work on.
'Expansion of bracket' appears in the crossover content for Paper 3 and again in the Higher-only content as 'expansion of brackets', which could possibly be a quadratic or link to the difference of two squares mentioned.

Geometry and measure
Pythagoras' theorem is on both lists, so this is likely to be a crossover question, potentially with a follow-up on right-angled triangle trigonometry. Other priority topics include circle theorems (appearing on Papers 2 and 3), vectors (Papers 1 and 3), and sine and cosine rules.

Probability and statistics
We don't have the explicit statement of 'tree diagrams' as we do on Foundation, so it's likely that the combined events problems won't be given as tree diagram problems, although students might wish to use tree diagrams in their solutions.
Again, a good list for Higher statistics, with no real surprises or omissions. We might guess that the box plot question will also include quartiles and the distribution comparison, and it's likely there's an estimation of interquartile range (IQR) from a cumulative frequency graph.

This information is produced with grateful thanks to Christine Norledge, writing for 3rd Space Learning, for her in-depth analysis
Christine is a former secondary Maths teacher, currently working as a freelance author. She also has a resource-sharing website and YouTube channel.