

Belfairs Academy Mathematics Information Evening

Wednesday 22nd November
2017



COMMITMENT • RESPECT • EXCELLENCE • SELF-BELIEF • STRENGTH

Securing a GCSE in Mathematics

Students need to be **responsible** – attending every lesson with a positive attitude to learning.

Meeting homework deadlines.

Showing all working.

Students need to be **reflective** – effective use of self and teacher assessments to identify areas of strength and areas of misunderstanding.



Securing a GCSE in Mathematics

Students need to be **resilient** – especially if the maths appears difficult at first. They must break the mathematics down into sections.

Students need to be **resourceful** – Getting help: teachers, friends, internet, after school revision sessions, forming a study group are all good ways to be resourceful.



FAQ's

Which exam board are we using?

Edexcel

How many exams will my child sit?

3 exams, all 1 hour 30 minutes each.

Two are calculator exams, one non-calculator.

80 marks per exam, total 240 marks



FAQ's

What happens to my child's college/P16 placement if they do not secure their maths GCSE?

It is compulsory that these students continue to study mathematics at Post 16, re-sit GCSE mathematics in November.

Some colleges, apprenticeships, employers will not accept entry below Grade 4 and so choice of further study could be limited.



FAQ's

Who can I contact at Belfairs Academy about my child's progress in Mathematics?

Student's specific teacher

Mr Murphy - Year 9-11 Lead

Mr Noakes – Subject Leader of Mathematics

Mrs Haddow – Vice Principal and Raising Standard Leader for Y11



FAQ's

Typical topics students find challenging?

Direct and indirect proportion (incl. scale factors)

Percentage questions including compound interest

Ratio

Algebra – solving equations

Pythagoras' theorem

Rearranging formula

Drawing straight line graphs

Algebraic manipulation (simplifying, index laws, substitution, expanding and factorising including quadratic expressions)



Exam strategies



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Time management

Students will have 90 minutes for 80 marks.

1 mark = 1 minute

with some time left over at the end to check.

They need to be wary of spending too much time on questions. Spending 3 minutes on a 1 mark question, will not be the best use of time, there will be an easier method.

Likewise, if they spend 1 minute on a 6-marker, they've probably missed something.



Underline key words and information

Wordy questions can be daunting.

Routinely underlining key information to help pick out what is needed.

They should cross out any red herrings – for example, information in a table that they are not going to need.

They should consider ticking each piece of information off as they use it so they don't miss anything out.



Neat handwriting

The easier the students make it for the examiner to read their answers, the more marks they could obtain.

Lay out each step of their working clearly and include units where necessary.



Command words

Estimate → This means work out approximately by rounding the numbers to one significant figure.

E.g.: Estimate 13.7×6.2

Answer: $10 \times 6 = 60$

Explain → Informing the examiner how they got to their answer or how they know the answer is correct. This will require either a written sentence or a mathematical calculation.

Construct → This is another way of saying 'draw accurately' using mathematical equipment. Show all working.



Command words

Calculate → This does not mean use a calculator, it means 'work out' (and show their working).

Complete → This means to fill in a data table or to fill in gaps.

Work out → A written or mental calculation is needed.

E.g.: Work out 6^2

Answer: $6 \times 6 = 36$



Command words

Expand (multiply out the brackets)

$$4(d - 3) = 4d - 12$$

Factorise (find factors and add brackets)

Solve → this means to work out the value of something; usually a variable in an algebraic equation. **E.g.: solve $3x = 12$**

Answer: $x = 4$

Simplify → This is the process of making something simpler, eg: algebraic expression, fraction or a ratio.

E.g.: simplify $12 : 15$

Answer: $4 : 5$



Rounding

Students need to make sure they read whether they need to round to **decimal places** or **significant figures**.

For example: 0.0453682

0.05 2 **decimal** places
0.045 2 **significant** figures

For example: 85762

85800 3 significant figures



Units and Conversions

Check: are the units the same throughout the question?

A box is on a table.

The area of the box in contact with the table is 1500 cm².

The pressure on the table is 28 newton/m².

Work out the force exerted by the box on the table.

$$p = \frac{F}{A}$$

p = pressure

F = force

A = area

..... newtons

(Total 3 marks)

Check: are there units given on the answer line?

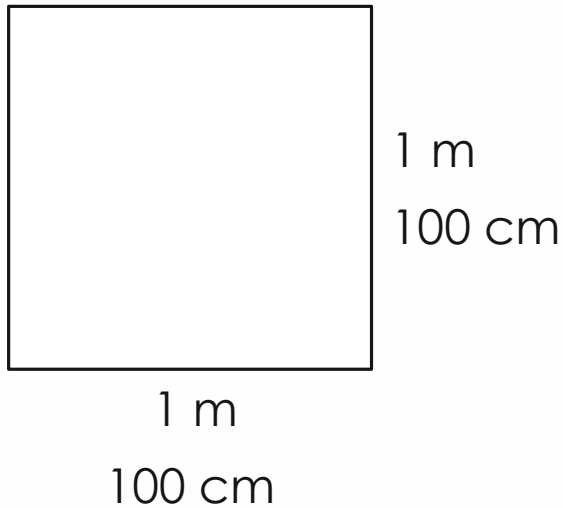
Remember:

60 minutes = 1 hour

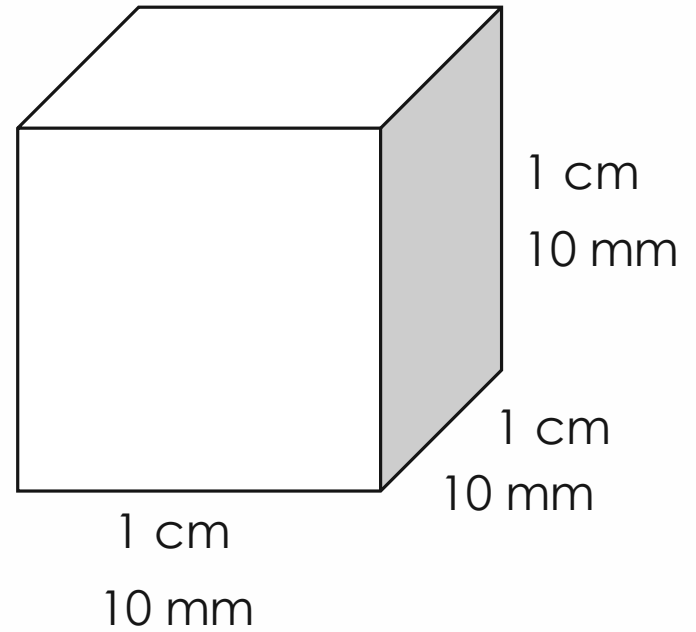
15 minutes = 0.25 hours, **NOT 0.15**



Units and Conversions



$$1 \text{ m}^2 = 10\,000 \text{ cm}^2$$



$$1 \text{ cm}^3 = 1\,000 \text{ mm}^3$$



Give reasons for your answer

Is it plural or singular? Students need to use the marks available to interpret how many reasons to give.

This does not mean they should write an essay!

The examiner will be looking for keywords in their answers.

It might help to plan their answers briefly first to make sure they leave enough space for reasons.



Diagrams not drawn to scale

Rulers and protractors will be of no use because some diagrams are not always drawn to the correct scale. (Unless told to use this equipment)

Students need to use angle reasoning, area and volume formulae, trigonometry or circle theorems to help themselves answer these questions.

The assumption now is that all diagrams are not drawn accurately.

Diagram to illustrate that the angles actually aren't correct



Crossing out working

Crossed out working cannot be marked if it is replaced.

Students are better off leaving incorrect working there and gaining one or two marks than gaining none.

Students need to ensure they leave one final answer.



Answer everything

Again, students are better off leaving incorrect working there and gaining one or two marks than gaining none.

Encourage your child to have a go at the questions throughout the paper, try to attempt as much as they can.



Checking their workings

If students finish early...

They must check their working.

This doesn't mean just looking at their answers, they need to go over every step of their working to make sure they haven't made any avoidable errors with times tables or negatives.



Reasoning , interpretation and communicating mathematically.
Solving problems within straightforward contexts.

Old Exam

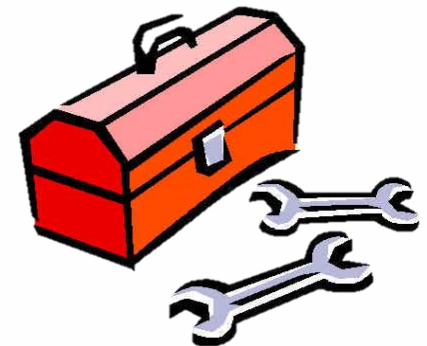
Work out 29×52

The mathematical skills haven't changed, students have to decide the right time to use them.

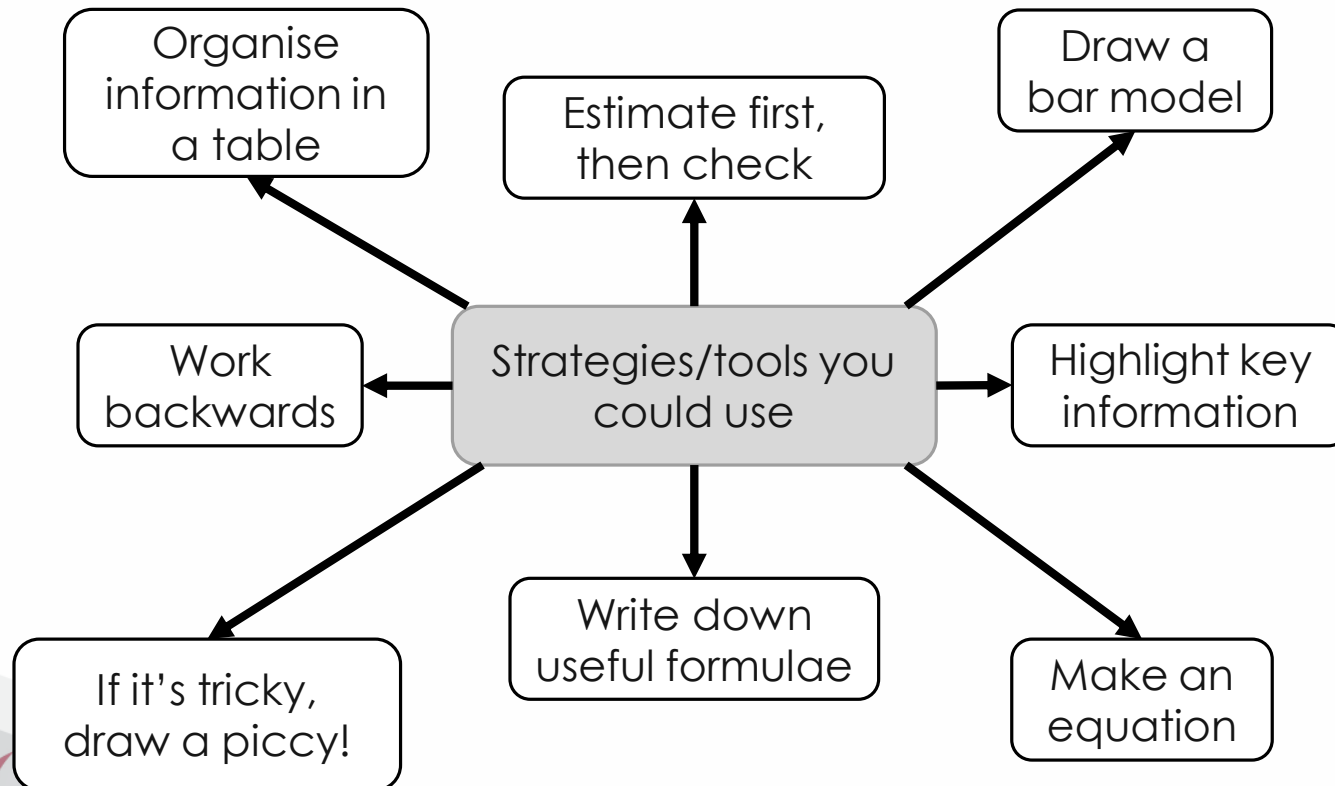
Students all have a 'mathematical toolbox' full of skills that have been built up over the years. All they have to do is decide what is the correct tool to use for the job.

New Exam

A local football club have just reached the county cup final. They want to bring 29 coaches to the final. Each coach has 52 seats. How many supporters are going to the final?



Exam techniques



Exam techniques

Step 1

Read the question highlighting key information.

Step 2

Plan and structure how you are going to answer it.

Step 3

Answer it showing all your mathematical working out.

Step 4

Check your answers.



Year 11 Mathematics PPE Examinations

Paper 1 (non-calc): November 27th Period 1
Paper 2 (calc): November 29th Period 1
Paper 3 (calc): December 1st Period 1

Results : December 20th December

Planned second round of PPEs for the end of March

Equipment

Scientific Set including compass and protractor
Casio Scientific calculator Model fx – 83GT Plus
Maths GCSE 9-1 Edexcel Revision workbook (RRP approx. £6)



Maths Equipment

- ❖ It is essential that all students have a scientific calculator for their maths lessons and their exams
- ❖ The calculators are configured by the students during their lessons, therefore it is imperative they use the same calculator in their exams
- ❖ Students should bring these to school with them every day and also for every exam
- ❖ If you have not already purchased a calculator we recommend the CASIO-FX85GT Plus
- ❖ Calculators can be purchased from parent pay at cost of £6.55.



Your GCSE Examinations

Paper 1 (non-calc) : 24th May 2018

Paper 2 (calc) : 7th June 2018

Paper 3 (calc) : 12th June 2018



Useful websites

These websites are suggestions to assist with revision.

<https://www.mathswatchvle.com/>

<https://corbettmaths.com/>

<https://examsolutions.net/>

<http://www.mathsgenie.co.uk/>

Equipment

Scientific Set including compass and protractor
Casio Scientific calculator Model fx – 83GT Plus
Maths GCSE 9-1 Edexcel Revision workbook and
Revision guide (RRP approx. £6)

