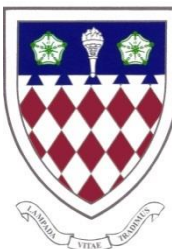


GCSE Mathematics 2017



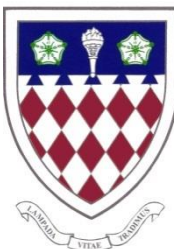
GCSE Mathematics 2017

GCSE Maths is going to
change and get more
demanding for everyone.



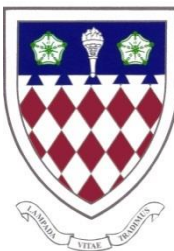
Why is this happening?

The changes are designed to help students emerge from GCSE mathematics with a level of confidence and fluency that will provide a genuine foundation for the rest of their learning and working lives.



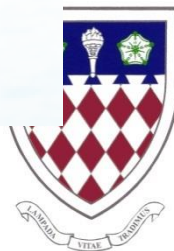
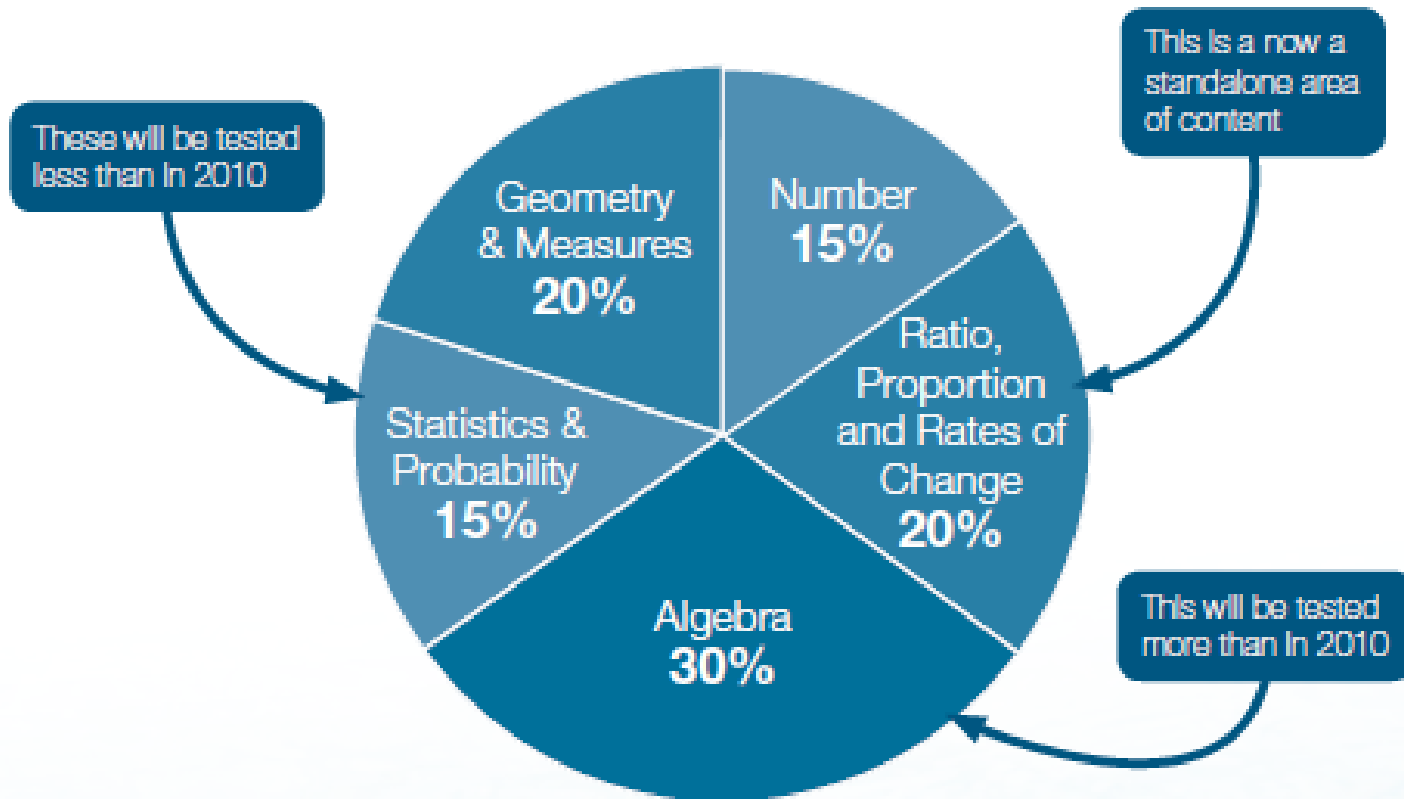
What is changing (1)

- The **volume of subject content** has increased.
- The **demand of that content** is increasing too, with harder topics being introduced.



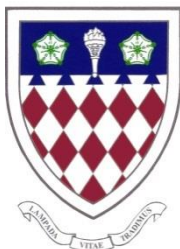
Content

Higher



What is changing (2)

- The total time for the examinations is increasing, from 3 ½ hours to 4 ½ hours.
- All exams will be sat at the end of the course.
- There is no controlled assessment.
- There are fewer marks at the lower grades and more marks at the higher grades at both Foundation Tier and Higher Tier.

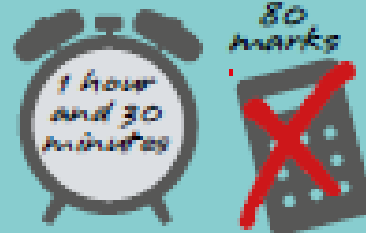


Examination papers

Foundation
(grades 1-5)

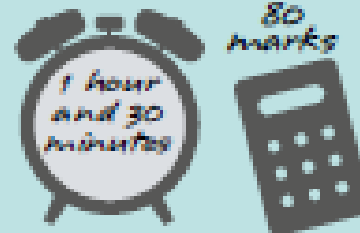
Paper 1
Non-calculator

33.3% weighting



Paper 2
Calculator

33.3% weighting



Paper 3
Calculator

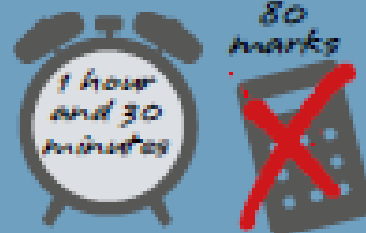
33.3% weighting



Higher
(grades 4-9)

Paper 1
Non-calculator

33.3% weighting



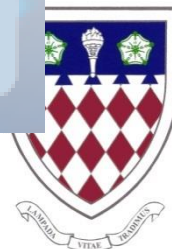
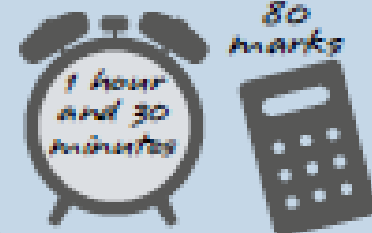
Paper 2
Calculator

33.3% weighting



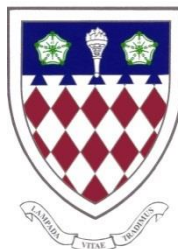
Paper 3
Calculator

33.3% weighting



What is changing (3)

In the assessments there's a greater emphasis on **problem solving** and **mathematical reasoning**, with more marks now being allocated to these higher-order skills.



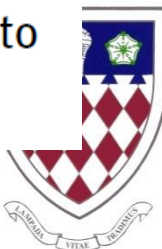
Assessment objectives

AO1 Questions that test students' memory of the content they learned in class

AO2 Questions that present a scenario and ask students to apply the correct maths

AO3 Questions that present a problem and leave the student to solve it

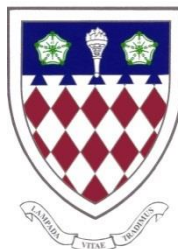
Unlike AO1 and AO2, AO3 questions will often leave the students with no hints or tips on how to solve the problem. They will often be open-ended and leave the students to develop their own method of answering the question.



AO1

Chelsea won the Premier League Championship in 2009/10. They played 38 games and won 27 of them. What percentage of the games they played in the league did they win?

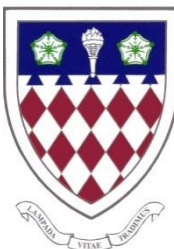
(This is a simple AO1 question. Although the information is set in a context, students just need to recall and use the correct formula in order to gain a mark.)



AO2

In the football season 2009/10, Chelsea played some games away from their home ground. Of these away games, they drew 4 games, lost one more than they drew and won twice as many as they lost. How many matches did they play away from home?

(This is an example of an AO2 question. The students have to select and apply the correct method in the context to find the appropriate solution.)

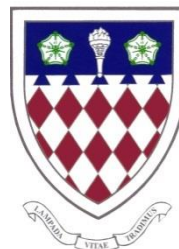


A03

In the season 2009/10, Chelsea played 38 matches.

They drew 5 of their games, lost 3/19 of their games and won the rest. If they gained 3 points for a win, 1 point for a draw and 0 points for a loss, how many points did they have at the end of the season?

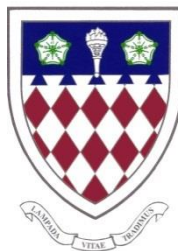
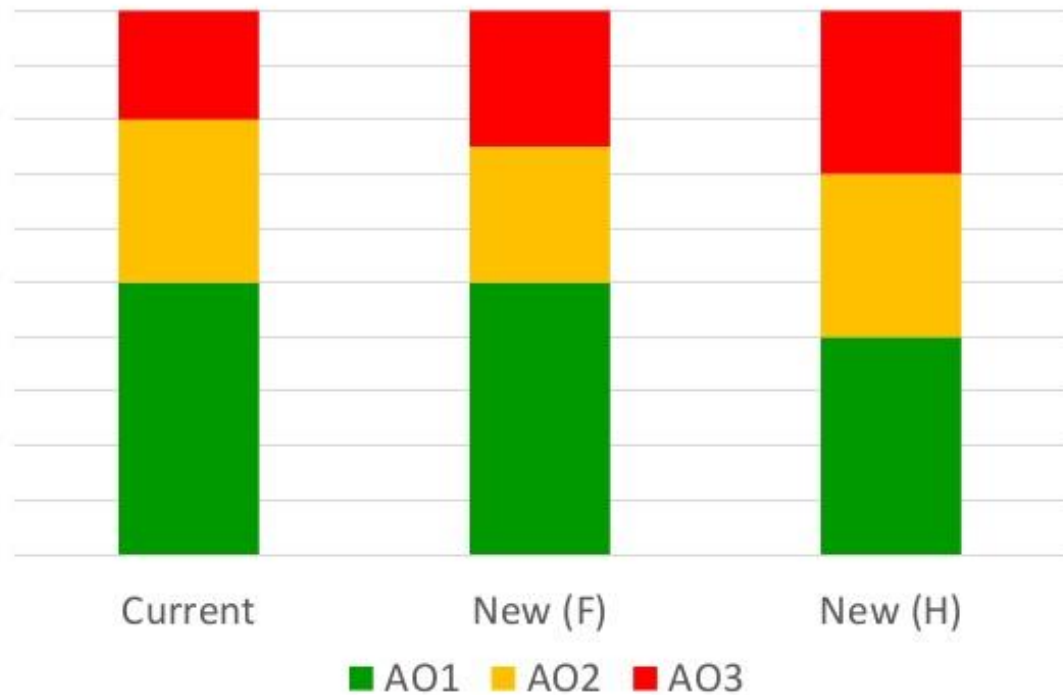
(This is an example of an A03 question. The students will have to interpret and analyse the problem and generate a strategy to solve it. Quite often in these questions, there will be more than one way of finding an answer that is correct.)



Successful

Assessment objectives

Changes to assessment objectives



What is changing (4)

A **new grading structure** is being introduced, from grade 9 to 1, to replace the familiar A* to G grading scale.

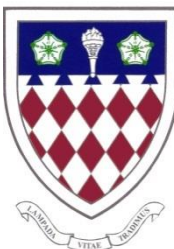
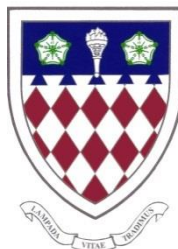
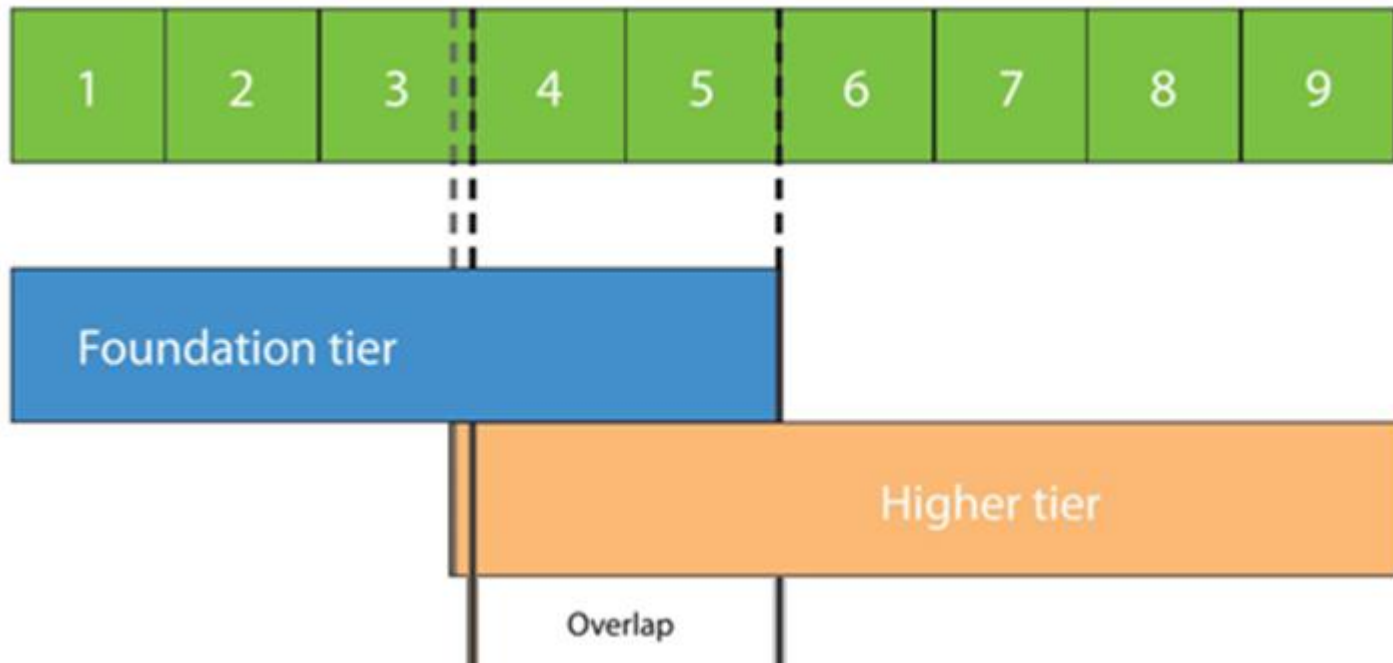
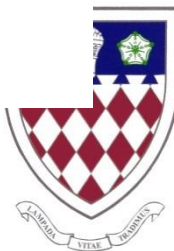
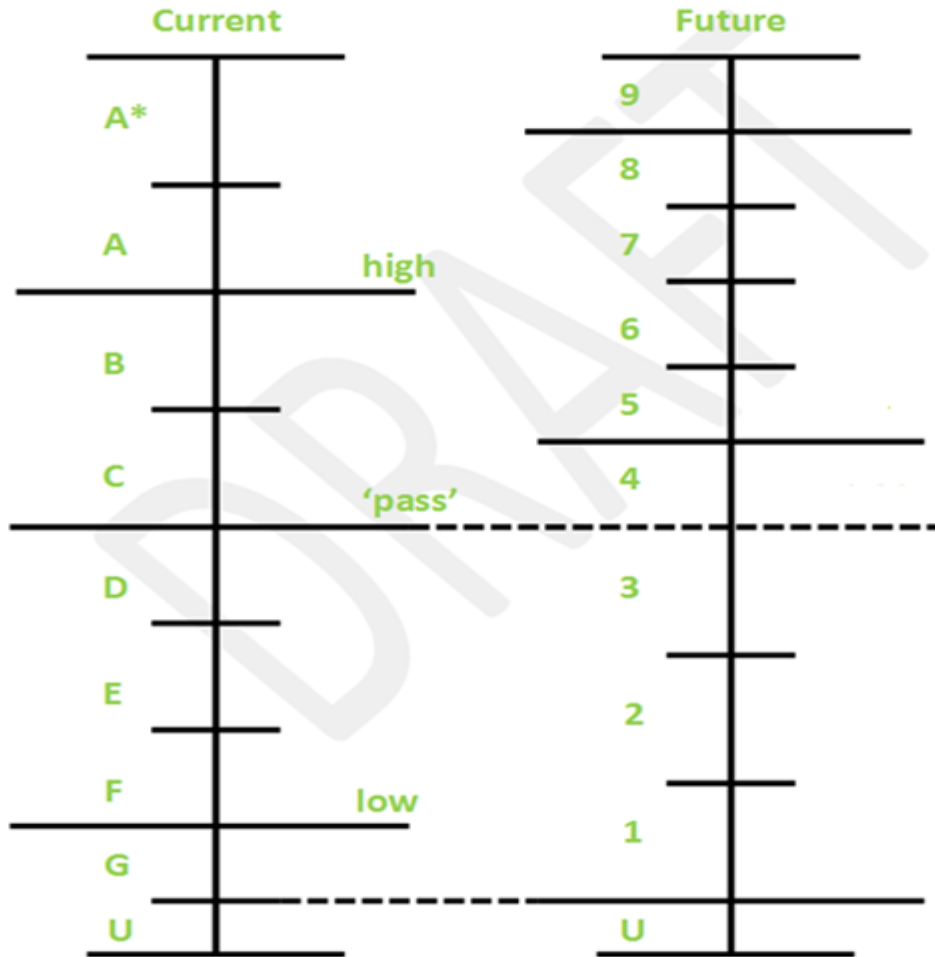


Illustration of grades and tiering in the new GCSE mathematics

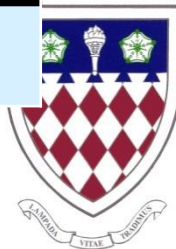


Grade mappings



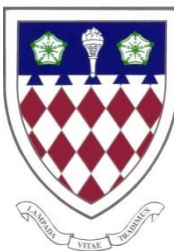
New grade distributions

Edexcel			2017 (Estimated)		
Grade	%	Cumulative %	Grade	%	Cumulative %
A*	6.4	6.4	9	3.4	3.4
A	10.5	16.9	8	6.0	9.4
			7	7.5	16.9
B	18.7	35.6	6	12.4	29.3
			5	15.9	45.2
C	29.2	64.8	4	19.6	64.8
D	18.6	83.4			



What is changing (5)

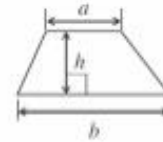
Students will be required to memorise formulae – fewer formulae will be provided in examinations.



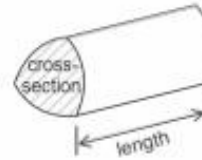
Formulae removed

Changes to the provision of formulae

Area of trapezium = $\frac{1}{2}(a+b)h$



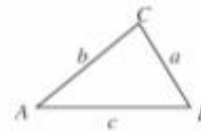
Volume of prism = area of cross-section \times length



In any triangle ABC

Area of triangle = $\frac{1}{2}ab \sin C$

Sine rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

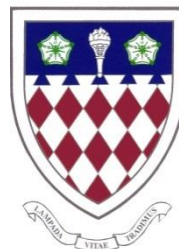


Cosine rule $a^2 = b^2 + c^2 - 2bc \cos A$

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$, where $a \neq 0$, are given by

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$



Formulae provided

Changes to the provision of formulae

$$\text{Volume of sphere} = \frac{4}{3} \pi r^3$$

$$\text{Surface area of sphere} = 4 \pi r^2$$



$$\text{Volume of cone} = \frac{1}{3} \pi r^2 h$$

$$\text{Curved surface area of cone} = \pi r l$$



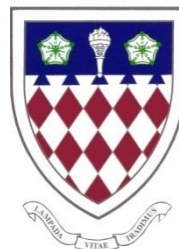
Kinematics formulae

Where a is constant acceleration, u is initial velocity, v is final velocity, s is displacement from the position when $t = 0$ and t is time taken:

$$v = u + at$$

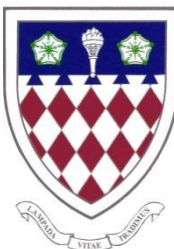
$$s = ut + \frac{1}{2}at^2$$

$$v^2 = u^2 + 2as$$



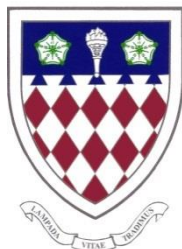
Need more challenge?

AQA GCSE **Further mathematics** for those aiming for grade 8 or 9.

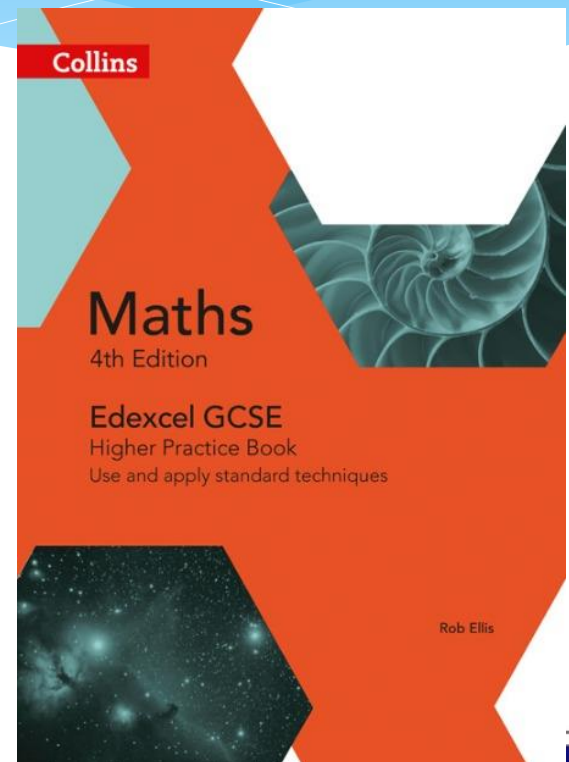
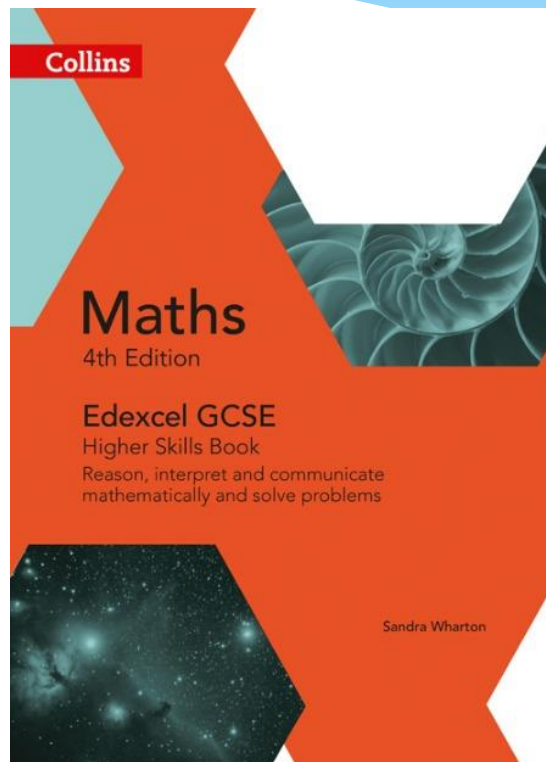
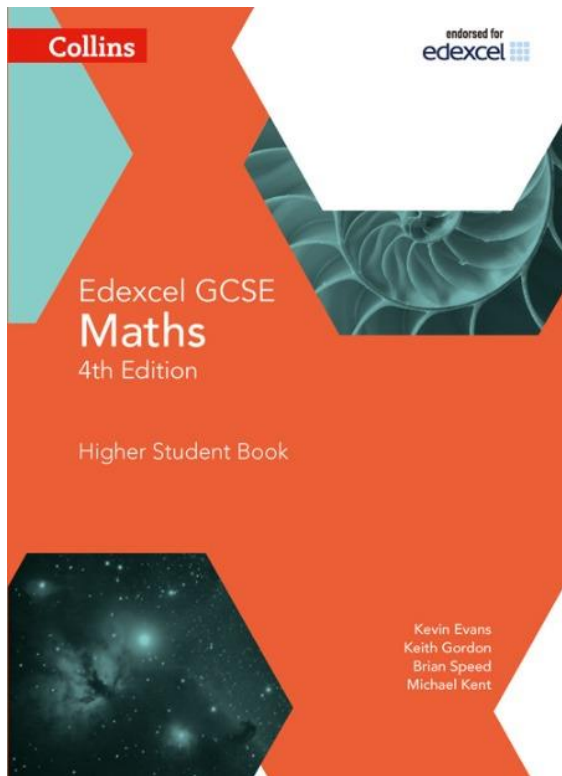


Help!

- New text books.
- MyMaths website.
- MathsWatch DVD (£3.60).
- Talk to your teachers for support.
- Mathematics Clinic every Wednesday.
- 18 Past Papers + mark schemes (£5)



New text books



MyMaths website

The screenshot shows a web browser window with the address bar displaying `www.mymaths.co.uk/parent.html`. The browser's address bar includes navigation icons (back, forward, refresh, home) and a search icon. Below the address bar is a bookmark bar with folders for 'Apps', 'History', 'Banking', 'Broadband', 'Media', 'Medical', 'Phone', 'School', 'Tools', 'Travel', 'Downloads', 'Utilities', 'Print', 'Shopping', and 'Other bookmarks'. The website header features the MyMaths logo with the tagline 'Bringing maths alive' and a login form with 'Username' and 'Password' fields and a 'Go' button. A navigation menu below the header includes buttons for 'Home', 'Primary', 'Secondary', 'Parents' (highlighted), 'Subscribe', 'Help', and 'News'. The main content area is titled 'Parents' and contains the text: 'The MyMaths resources are available 24 hours a day, 7 days a week from school or from home.' To the right of this text is an illustration of a woman and a child sitting at a desk with a computer. Below the main content are three columns, each with an icon of stacked blocks and a heading: 'Fully interactive', 'Login at home', and 'Check their progress'. Each column contains a short paragraph describing the feature. The Windows taskbar is visible at the bottom of the browser window, showing the Start button, search icon, and several application icons. The system tray on the right shows the time as 19:16 and the date as 01/11/2015.

MyMaths - Bringing math x Allan

www.mymaths.co.uk/parent.html

Apps History Banking Broadband Media Medical Phone School Tools Travel Downloads Utilities Print Shopping Other bookmarks

MyMaths.co.uk
Bringing maths alive

Username
Password Go

Home Primary Secondary **Parents** Subscribe Help News

Parents

The MyMaths resources are available 24 hours a day, 7 days a week from school or from home.

Fully interactive

MyMaths is a fully interactive, online mathematics learning solution for children of all ages and abilities. It helps your child to develop their understanding of maths through a variety of engaging activities, games and assessments. Teachers, pupils and parents love MyMaths because lessons are clearly laid out and they are supported resources that

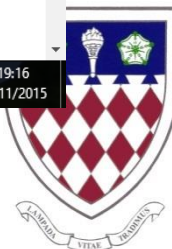
Login at home

Provided your child's school subscribes to MyMaths, your child will be able to access their homework set by their teacher and get instant results by logging in to the online student portal at home. Your child's school will provide their pupils with log-in details.

Check their progress

As a parent, your child's school can also provide you with log-in details to access MyMaths alongside your child. You will then be able to support your child's learning by seeing what they are working on and checking their progress.

19:16
01/11/2015



Finally?

What can you do to support your daughter in maths?

1. Encourage your daughter whenever possible. Revision prior to every assessment is a vital part of developing skills for the final examination series.
2. Make the most of technology available to us today; graphing tools, mymaths and mathswatch, check out the numeracy apps to boost confidence and speed up calculations
3. Homework is a vitally important part of developing skills independently, it provides consolidation and enrichment opportunities. So your continued support with a quiet place to work, preferably in a social media free-zone to aid concentration and encouragement when questions are tough is always appreciated.