

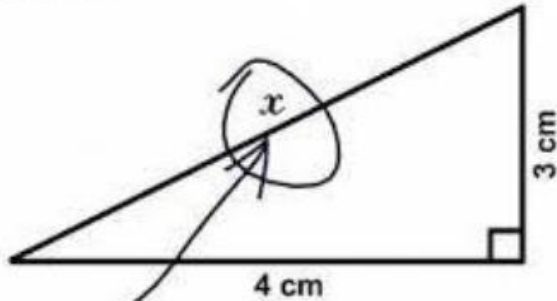


Y11

Maths Preparation  
Ms KU

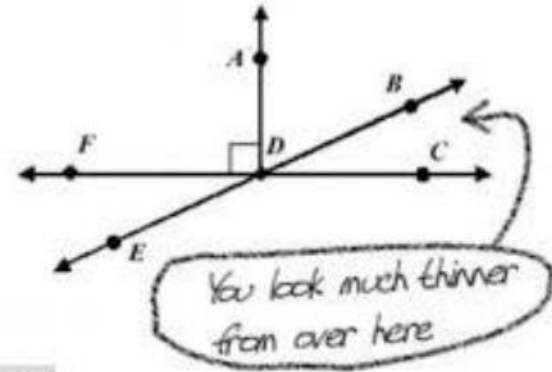
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3. Find x.



Here it is

3. Name an angle complimentary to BDC:



# Revision in Mathematics

Expand  $2(x + y)$

$$\begin{array}{r} 2(x+y) \\ 2(x+y) \\ 2(x+y) \\ 2(x+y) \end{array}$$

What is a six-sided polygon known as?

a stop sign



To change centimeters to meters you ?

take out centi

2. Write a fraction that is equivalent

# Exam Dates



**Pearson Edexcel GCSE**

Summer 2023 Examination Timetable - Provisional

**Subject Index: M**

[Homepage](#) 

Subject	Examination code	Title	Date	Time	Duration
Mathematics	1MA1 1F	Paper 1 (Non-Calculator) Foundation Tier	Friday 19 May	Morning	1h 30m
	1MA1 1H	Paper 1 (Non-Calculator) Higher Tier	Friday 19 May	Morning	1h 30m
	1MA1 2F	Paper 2 (Calculator) Foundation Tier	Tuesday 06 June	Morning	1h 30m
	1MA1 2H	Paper 2 (Calculator) Higher Tier	Tuesday 06 June	Morning	1h 30m
	1MA1 3F	Paper 3 (Calculator) Foundation Tier	Wednesday 14 June	Morning	1h 30m
	1MA1 3H	Paper 3 (Calculator) Higher Tier	Wednesday 14 June	Morning	1h 30m

### Foundation Tier Formulae Sheet

#### Perimeter, area and volume

Where  $a$  and  $b$  are the lengths of the parallel sides and  $h$  is their perpendicular separation:

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

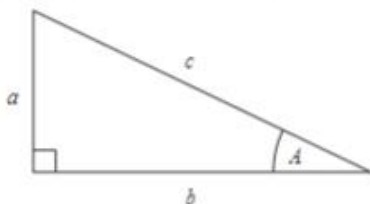
Volume of a prism = area of cross section  $\times$  length

Where  $r$  is the radius and  $d$  is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

#### Pythagoras' Theorem and Trigonometry



In any right-angled triangle where  $a$ ,  $b$  and  $c$  are the length of the sides and  $c$  is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle  $ABC$  where  $a$ ,  $b$  and  $c$  are the length of the sides and  $c$  is the hypotenuse

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$

#### Compound Interest

Where  $P$  is the principal amount,  $r$  is the interest rate over a given period and  $n$  is number of times that the interest is compounded:

$$\text{Total accrued} = P \left( 1 + \frac{r}{100} \right)^n$$

#### Probability

Where  $P(A)$  is the probability of outcome  $A$  and  $P(B)$  is the probability of outcome  $B$ :

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

### Higher Tier Formulae Sheet

#### Perimeter, area and volume

Where  $a$  and  $b$  are the lengths of the parallel sides and  $h$  is their perpendicular separation:

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

Volume of a prism = area of cross section  $\times$  length

Where  $r$  is the radius and  $d$  is the diameter:

$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

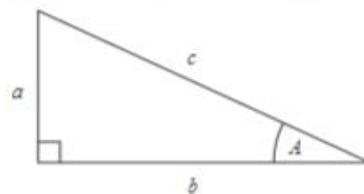
#### Quadratic formula

The solution of  $ax^2 + bx + c = 0$

where  $a \neq 0$

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

#### Pythagoras' Theorem and Trigonometry

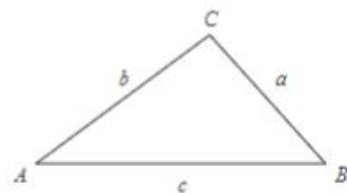


In any right-angled triangle where  $a$ ,  $b$  and  $c$  are the length of the sides and  $c$  is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle  $ABC$  where  $a$ ,  $b$  and  $c$  are the length of the sides and  $c$  is the hypotenuse:

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$



In any triangle  $ABC$  where  $a$ ,  $b$  and  $c$  are the length of the sides:

$$\text{sine rule: } \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\text{cosine rule: } a^2 = b^2 + c^2 - 2bc \cos A$$

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

#### Compound Interest

Where  $P$  is the principal amount,  $r$  is the interest rate over a given period and  $n$  is number of times that the interest is compounded:

$$\text{Total accrued} = P \left( 1 + \frac{r}{100} \right)^n$$

#### Probability

Where  $P(A)$  is the probability of outcome  $A$  and  $P(B)$  is the probability of outcome  $B$ :

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

$$P(A \text{ and } B) = P(A \text{ given } B) P(B)$$

#### END OF ADVANCE INFORMATION

# HOW TO KNOW YOURSELF



# Assessment dates

- 14 Nov Mon P4 ( Cal)
- Week beginning 5 Dec MOCK test 1
- Week beginning 6 Mar MOCK test 2
- 17 Apr Mon P3 ( non-cal)
- 24 Apr Mon P4 (cal)
- 8 May Mon P4 ( cal)

After the test, students will receive feedback sheet.





# Strengths and areas for improvement: NMS feedback sheets

Foundation Paper Even					
Q	Topic	Max	Actual	%	Hegarty
2	Fraction of an amount	1	1	100%	[77]
4	Multiples of a number	1	1	100%	[33]
6	Ratio	1	1	100%	[328]
8	Sequences	2	2	100%	[196-197]
10	Circle definitions	2	2	100%	n/a
12	Proportions and measures	3	3	100%	[739 - 742]
14	Perimeter and area	2	1	50%	[549,550,556,557]
16	Probability tables	4	0	0%	[351,352]
18	Reflections	2	1	50%	[639-641]
20	Venn diagrams	4	4	100%	[372,373]
22	Expanding and factorising	4	1	25%	[162,163,168,169]
24	Scatter graphs	2	0	0%	[453,454]
26	Converting measures	1	0	0%	[702]
28	Standard form	3	3	100%	[122,125,126]
30	Area of circles	3	0	0%	[539-542]
Total Marks		35	20	57%	0

Grades

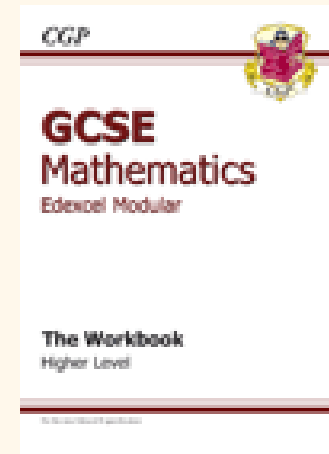
Focus on things  
where you feel  
you're leaning



New Mills  
School

## Revision resources

- Once strengths and areas for improvement are known, revise Maths topic by topic then practice GCSE style questions which are pitched at the appropriate level.
  - Hegarty Maths - useful for re-learning the topic
  - Maths Genie – GCSE questions by topic/grade
  - OnMaths – GCSE questions by topic/grade
  - Past Papers



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# Maths Genie

- Maths Genie contains GCSE questions organised by topic and grade (see image to right) questions which are pitched at the appropriate level.
- It also contains worked solutions AND further instructional videos, on the individual topic.

Grade 5

Videos	Exam Questions	Exam Que	Solutions
<a href="#">Writing a Ratio as a Fraction or Linear Function</a>	<a href="#">Exam Questions</a> <a href="#">Exam Questions</a>	<a href="#">Ratio Fract</a> <a href="#">Ratio Probl</a>	<a href="#">Solutions</a> <a href="#">Solutions</a>
<a href="#">Direct and Inverse Proportion</a>	<a href="#">Exam Questions</a>	<a href="#">Direct and</a>	<a href="#">Solutions</a>
<a href="#">Reverse Percentages</a>	<a href="#">Exam Questions</a>	<a href="#">Reverse Pe</a>	<a href="#">Solutions</a>
<a href="#">Standard Form</a>	<a href="#">Exam Questions</a>	<a href="#">Standard F</a>	<a href="#">Solutions</a>
<a href="#">Speed and Density</a>	<a href="#">Exam Questions</a>	<a href="#">Compound Measures</a>	<a href="#">Solutions</a>
<a href="#">Changing the Subject of a Formula</a>	<a href="#">Exam Questions</a>	<a href="#">Changing the Subject of a Formula</a>	<a href="#">Solutions</a>
<a href="#">Expanding and Factorising Quadratics</a>	<a href="#">Exam Questions</a>	<a href="#">Expanding and Factorising Quadratics</a>	<a href="#">Solutions</a>
<a href="#">Solving Quadratics</a>	<a href="#">Exam Questions</a>	<a href="#">Solving Quadratics</a>	<a href="#">Solutions</a>

Click for hand written solutions

Click for video tutorial

Click for questions

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School

# Onmaths

- You have an onmaths account which link with your teachers.
- Onmaths will give you a current grade with topics you need to revisit.

## Certificate of Completion

Mr [Name] has successfully completed this paper

Paper: Edexcel 2017 Paper 3 Higher  
Prediction  
Grade Achieved: 9  
Marks Achieved: 75 out of 80  
Percentage Achieved: 94%

Q	Topic Area	Your Marks
1	Ratio: Given amount different between parts	100%
2	Straight-Line Graphs: Draw Graph ( $m = 2$ )	100%
3	Inequalities: Finding Integers and Solving	100%
4	Compound Measures: Finding Pressure	100%
5	Transformations: Describe Translation	100%
6	Compound Measures: Density From a Triangular Prism	100%
7	Polygons: Exterior Angle Between Identical Polygons	100%
8	Venn Diagrams: Find Intersection, Union and Not Probability	100%
9	Bearings: Use Trigonometry To Find Bearing	100%
10	Compound Measures: Problem From Prism And Rate Of Filling	100%
11	Cumulative Frequency: Construct and Interpret Boxplot	100%
12	Bounds: Finding Area	100%
13	Sampling: Capture-Recapture	100%
14	Further Trigonometry: Sine Rule and Trig Area	100%
15	Rearranging Formulae: Involving Factorising	100%
16	Quadratic Formula: Rearranging	100%
17	Similarity And Congruence: Volume Scale Factor Given Areas	0%
18	Iteration: Rearrange and Solve	100%
19	Function Notation: Advanced Inverse Function	100%
20	Surds: Complex Rationalising	100%
21	3D Right-Angles: Trigonometry in Cuboid	100%
22	Curve Gradient and Area: Find Area Using Trapezium Rule	100%

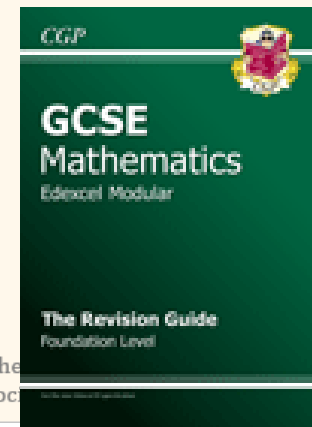
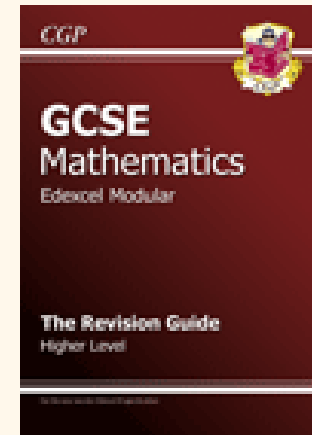
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# Revisit work you have done



- Use a Revision Guide and Knowledge Organiser.

Look up anything you don't know and then have a go at some questions



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**“BELIEF + HARD WORK + SUPPORT = SUCCESS.”**

# What is Hegarty Maths?

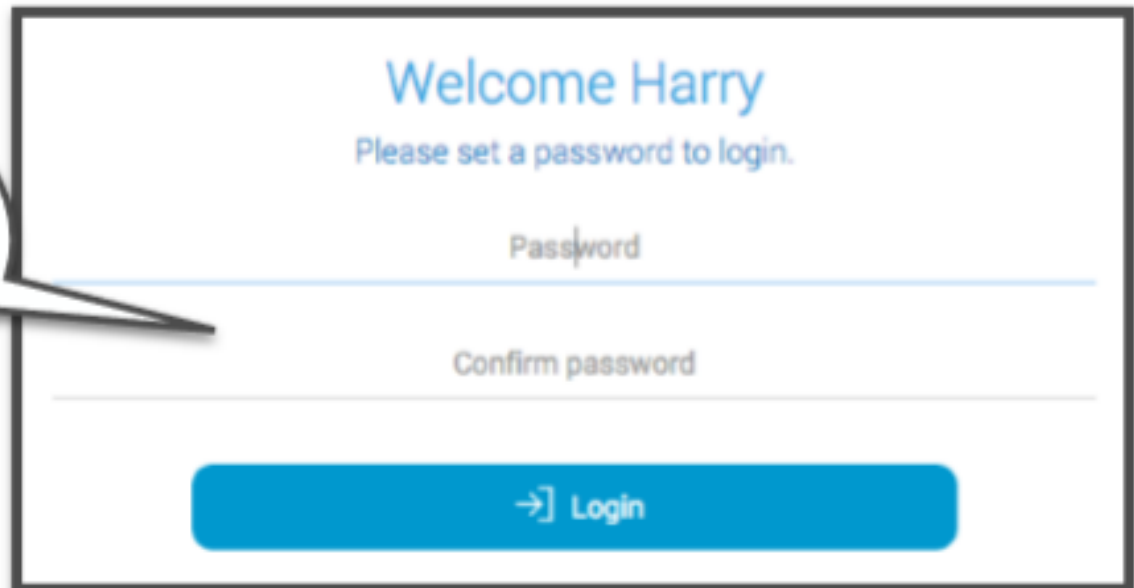
- An online platform for all year groups to help you learn, practice and revise maths;
- Each topic is broken into tiny pieces with a video and a quiz to test your understanding
- Topics range from simply learning your times tables all the way through to grade 9 topics at GCSE.
- There is something for everyone!

# How do you login?

- Search for New Mills School  
(Don't forget to put the space between the words)
- Type in your first and last name and your dob
- Create a password (if you login for the first time)  
Otherwise, type in your password.

**Set and confirm your  
own password.**

Remember to write it in  
your maths book and  
planner!



Welcome Harry

Please set a password to login.

Password

Confirm password

→] Login



# What does studying look like?

Number > Place value

The screenshot shows a video player interface. At the top, the title is "Read and write positive integers". Below it, the "Big Idea: Place Value" is highlighted in green. The video content includes a grid with numbers and arrows indicating place value relationships. A yellow oval callout bubble is overlaid on the video, containing the text: "A video explaining the topic by a real maths teacher".

## 13 - Read & write positive integers

Learn how to identify the place value of various numbers; some easy and some complex.

Video watched 0.00x

Your score **New lesson** HegartyMaths avg 89%

[Do quiz](#)

A yellow oval callout bubble with a blue border contains the text: "A self-marking quiz that is directly related to the video – no trick questions".

Spotted a mistake in this video?

## Building blocks

This card shows a "Question preview" for "9 - Addition facts". The main content is the equation  $8 + 9$ . It includes a "Evaluate" button and a right-pointing arrow icon. The background text indicates it is part of the "Arithmetic with positive integers" section, with a video watched of 0.00x and a score of "New lesson" against a 97% average.

This card shows a "Question preview" for "10 - Multiplication facts (times tables)". It includes a "Evaluate" button and a right-pointing arrow icon. The background text indicates it is part of the "Arithmetic with positive integers" section, with a video watched of 1.00x.

Building blocks – don't understand the video? Building blocks show you the topics you need to understand BEFORE you try this new topic. They act as more support for your learning.

# What does excellence look like?

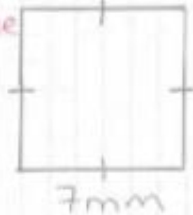
## VIDEO NOTES

Hegarty maths - Perimeter (2)

14<sup>th</sup> July 2016

Example

①



Dash means same length

Key words

- Length
- Units
- Distance

$$\begin{aligned} \text{Perimeter} &= 7+7+7+7 \\ &= 4 \times 7 \\ &= \underline{28 \text{ mm}} \end{aligned}$$

Don't forget units!

Example

②



Double dash means same as other double dash but not same as single dash

$$\begin{aligned} P &= 4+9+4+9 \\ &= 18+8 \\ &= \underline{26 \text{ m}} \end{aligned}$$

$$\begin{aligned} P &= 2 \times 9 + 2 \times 4 \\ &= 18 + 8 \\ &= \underline{26 \text{ m}} \end{aligned}$$

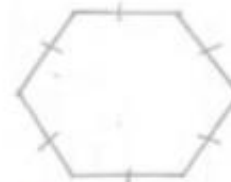
$$\begin{aligned} P &= 2 \times (4+9) \\ &= 2 \times 13 \\ &= \underline{26 \text{ m}} \end{aligned}$$

Doesn't matter which method you use, they all work 😊

Here is an example of a great homework!

Example

③



Hexagon has 6 sides

9m

$$\begin{aligned} P &= 6 \times 9 \\ &= \underline{54 \text{ m}} \end{aligned}$$

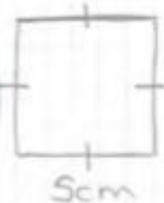
Regular means all sides are same length

Example

④

Work out the perimeter of a square with side length 5cm.

Always draw a sketch from the information given



$$\begin{aligned} P &= 4 \times 5 \\ &= \underline{20 \text{ cm}} \end{aligned}$$

Example

⑤

Work out the perimeter of an equilateral triangle with side length 4.1mm.

same as regular use distributive law or multiplication

$$\begin{aligned} P &= 3 \times 4.1 \\ &= 3 \times (4 + 0.1) \\ &= 12 + 0.3 \\ &= \underline{12.3 \text{ mm}} \end{aligned}$$



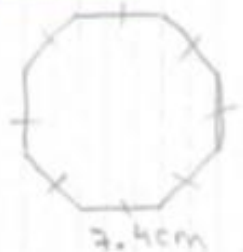
Example

⑥

Work out the perimeter of a regular octagon with side length of 7.4cm.

$$\begin{aligned} 8 \times 4 &= 32 \\ 8 \times 0.4 &= 3.2 \end{aligned}$$

$$\begin{aligned} P &= 8 \times 7.4 \\ &= 8 \times (7 + 0.4) \\ &= 56 + 3.2 \\ &= \underline{\underline{59.2 \text{ cm}}} \end{aligned}$$



Example

⑦

Work out the perimeter of a rectangle with width 5.2cm and height 7.9cm.

$$\begin{aligned} P &= (2 \times 5.2) + (2 \times 7.9) = 2 \times (5.2 + 7.9) \\ &= 10.4 + 15.8 \\ &= \underline{\underline{26.2 \text{ cm}}} \end{aligned}$$



Mental Maths

$$5.2 + 7.9 = 13.1$$

$$13.1 \times 2 = \underline{\underline{26.2}}$$

REMEMBER!  
There is more than one way 😊

Unit Notes

1) Perimeter of Shaded Shape? No Calculator

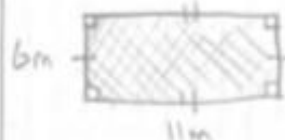


2mm

4 sides all with single dash  
↳ Square

$$\begin{aligned} P &= 4 \times 2 \\ &= \underline{\underline{8 \text{ mm}}} \checkmark \end{aligned}$$

2) Perimeter of Shaded Shape?



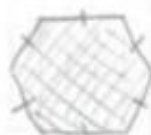
6m

11m

Rectangle

$$\begin{aligned} P &= (2 \times 6) + (2 \times 11) \\ &= 12 + 22 \\ &= \underline{\underline{34 \text{ m}}} \checkmark \end{aligned}$$

3) Perimeter of Shaded Shape?



5m

6 equal sides  
↳ Hexagon

$$\begin{aligned} P &= 6 \times 5 \\ &= \underline{\underline{30 \text{ m}}} \checkmark \end{aligned}$$

What score did you get in the quiz?

100%

Great effort! Why not try the next HW or **improve some of your other scores.**

Below 70%

70 - 99%

**Try the quiz again** and work hard to learn from any previous mistakes.

**Don't give up.** If you have taken full notes of the video, worked on your building blocks and you're still struggling then leave comments for your teacher to ask for help. It's important you make sure you **ask your teacher for help** to make sure you can eventually get 100%.



# We are monitoring your efforts



Total time watching videos



Time spent in total

Total time spent on quizz

17.2 hrs

20.1 hrs

Total time doing Fix Up  
5s

15 hrs

52.3 hrs

Questions answered correctly



Number of questions answered

1219

1096

Minimum Target = 1 hour per week

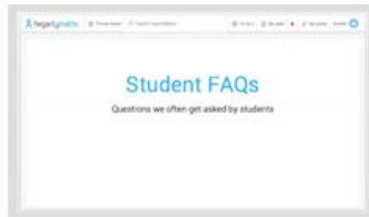
Student	Collecting like term...	Collecting like term...	Simplifying expres...	Simplifying expres...	Expand a single br...	Expand two single ...	Expand double bra...	Expand double bra...	Expand double bra...	Expand double bra...	Expand brackets (d...	Expand triple brack...	HCF of algebraic e...	Factorise simple ex...	Factorise simple ex...	Simplifying expres...	Simplifying expres...	Expressions with al...	Indices with algebr...	Indices with algebr...	Indices with algebr...	Students topic aver...
Courtney	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%		70%	100%	66%		81%
Zeeshan	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	80%	100%	100%	100%	100%			100%	93%		82%
Jordan	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	100%	100%	100%	100%	80%		100%	100%		88%
Jaideen	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	20%	100%	100%	100%	100%			88%	80%		79%
Joseph	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	90%	80%	0%	90%	84%				100%			62%
Luis	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	60%	80%	92%	100%							65%
Jamie	100%	100%	100%	70%	100%	100%	10%	40%	100%	100%			80%	84%	100%	60%	0%			87%	60%	64%
Lauren	100%	60%	100%	100%	100%	100%	100%	90%	90%	80%	20%	80%	100%	80%					100%	66%		68%
Cemein	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	40%	100%	100%	100%	100%			100%	93%		81%
Joshua	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	90%	100%	90%	100%			100%	73%		82%
Anthony	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	100%	100%	100%	100%		90%	88%	100%		87%
Jessica	100%	100%	100%		100%	100%	100%	100%	100%	20%												36%
Chloe	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Benjamin	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	40%	100%	100%	100%	80%			100%			76%
Karthikan	100%	100%	100%	100%	100%	92%	100%	100%	100%	100%	100%	100%	100%	100%	70%	100%	100%	60%	100%	80%		90%

- We can see your scores
- What time of day you did it
- How many times you watched the video
- How many times you attempted it
- Everyone's actual answers to every homework



# Support

There is student help section on the website



## FAQs

These are the questions we get asked by students all the time. ([Is your question in here?](#))



## Starter Guide

Download our student starter guide (it's also a great read for parents) ([click here](#))



## Favourite Downloads

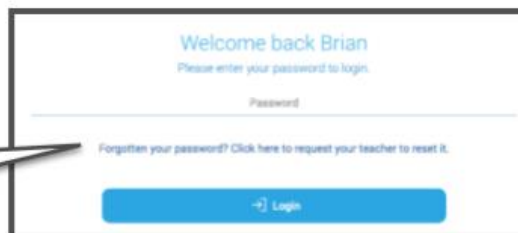
Here are some great resources for you to use and share

- **Can you do all these skills?** - You should have seen most of these KS3 booster skills in Primary School (PDF) ([click here](#))
- **new** GCSE **Higher** Skills Revision List [ [Word](#) | [PDF](#) | [Both documents](#) ]
- **new** GCSE **Crossover** Skills Revision List [ [Word](#) | [PDF](#) | [Both documents](#) ]
- **new** GCSE **Foundation** Skills Revision List [ [Word](#) | [PDF](#) | [Both documents](#) ]
- **Pre-A Level Transition Course** - absolute must-know skills before studying Maths in the sixth form (PDF) ([click here](#))
- **new** **Thank your teacher** - let your teacher know they've done a great job (PDF) ([click here](#))

# FAQ's

What if I forget my password?

This link will **notify your teacher** that you need the password reset when they next login.



What device should I use?

HegartyMaths will work on any modern device but we **recommend a PC or Mac for the best experience.** Tablets work well too.

HegartyMaths will work on the latest versions of Chrome, Edge, IE and Safari. **We do not support Firefox.**

What browser should I use?

Do I have to watch the video?

**In short, yes!** The video and the quiz are designed together so that you can be successful. The video will show you how to tackle the majority of the problems assessed in the quiz.

Try and explain to your teacher in a comment what you think is wrong. Submit a **question problem report.**

What do I do if I think there is a mistake in a question?

How can I contact HegartyMaths?

You can give us feedback on the site using the **contact us** form.

