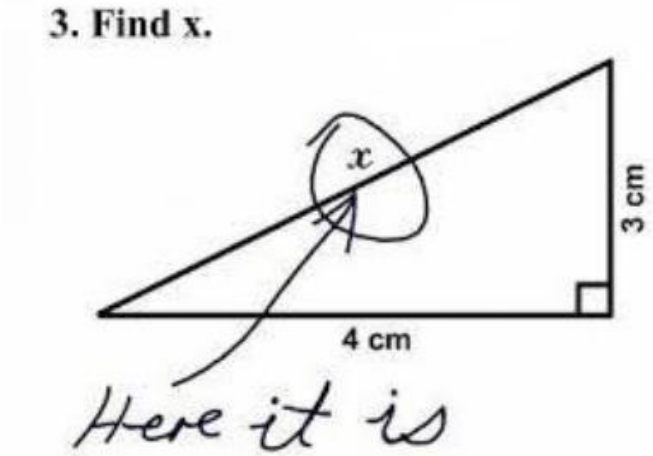
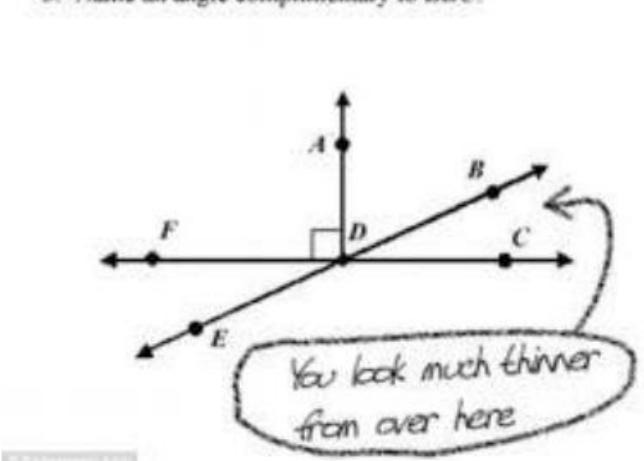
Y11

Maths Preparation

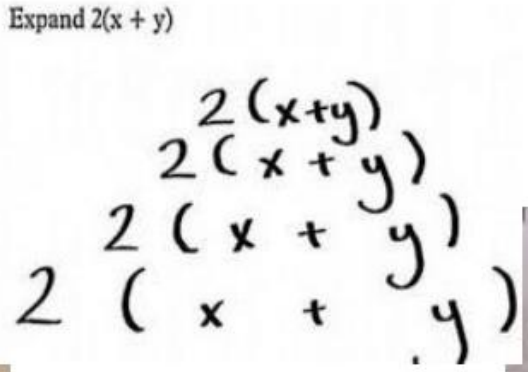
Ms KU

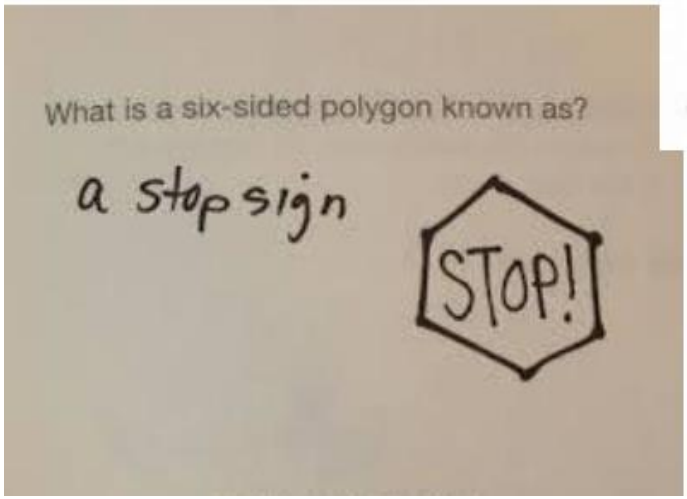
Empowering everyone to be the best they can be, optimising their future success, wellbeing and contribution to community and society

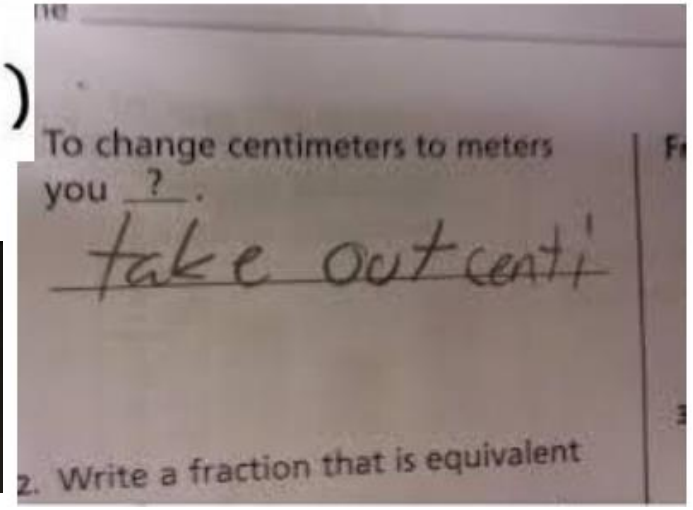




Revision in Mathematics







Exam Dates

Pearson Edexcel

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:

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

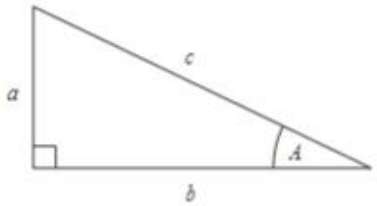
Volume of a prism = area of cross section × length

Where r is the radius and d is the diameter:

Circumference of a circle = $2\pi r = \pi d$

Area of a circle = πr^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:

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 or B) = P (A) + P (B) – P (A and B)

Continue ▶

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:

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

Volume of a prism = area of cross section × length

Where r is the radius and d is the diameter:

Circumference of a circle = $2\pi r = \pi d$

Area of a circle = πr^2

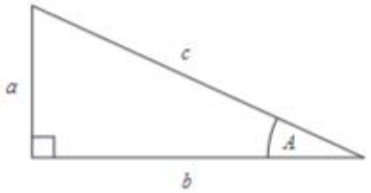
Quadratic formula

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

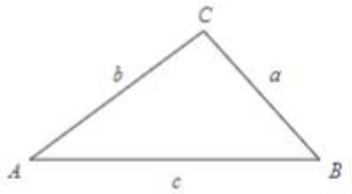


In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

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

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:

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

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

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:

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 or B) = P (A) + P (B) – P (A and B)

P (A and B) = P (A 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

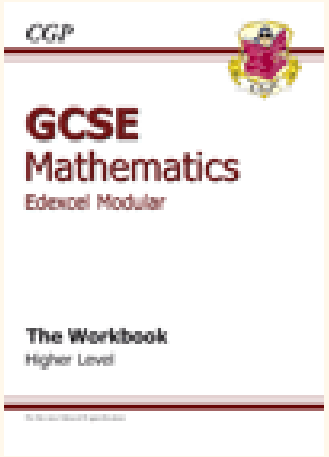
Focus on things where you feel you're leaning

Respectful, Reflective, Resilient, Resourceful, Responsible

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



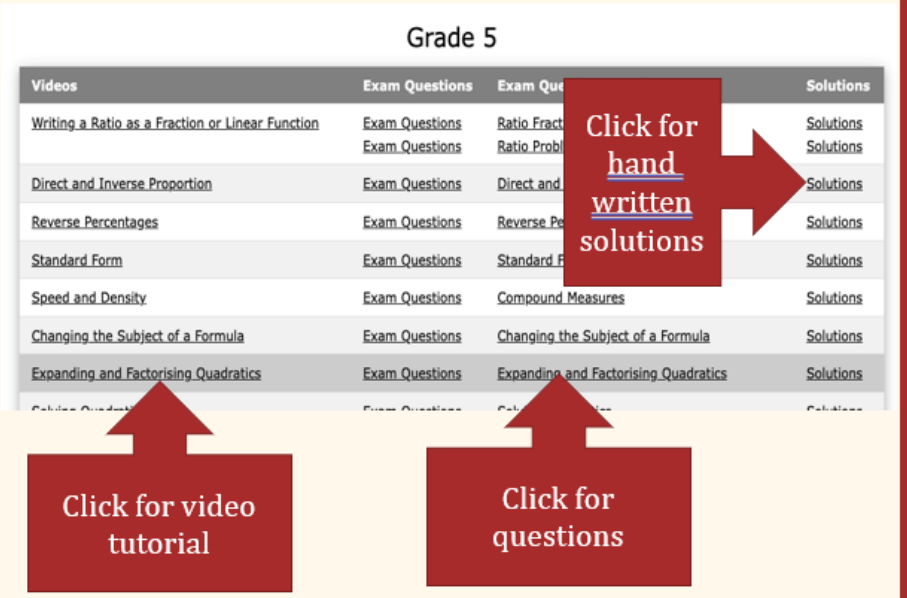
Respectful, Reflective, Resilient, Resourceful, Responsible

New Mills School

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.



Respectful, Reflective, Resilient, Resourceful, Responsible

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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

[redacted] 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%

Empowering everyone to be the best they can be, optimising their future success, wellbeing and contribution to community and society

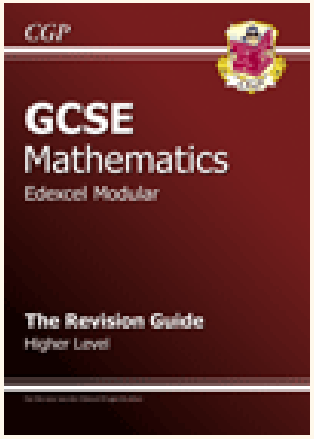
Respectful, Reflective, Resilient, Resourceful, Responsible

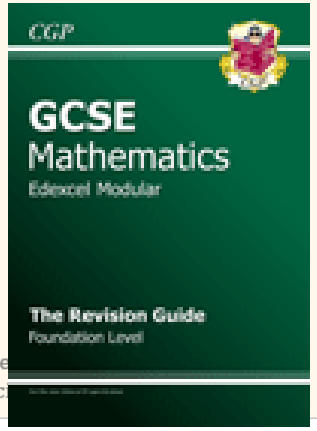
Revisit work you have done

New Mills School

- Use a Revision Guide and Knowledge Orgniser.

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





Empowering everyone to be the best they can be, optimising the
future success, wellbeing and contribution to community and soc

Respectful, Reflective, Resilient, Resourceful, Responsible

"BELIEF + HARD WORK + SUPPORT = SUCCESS."

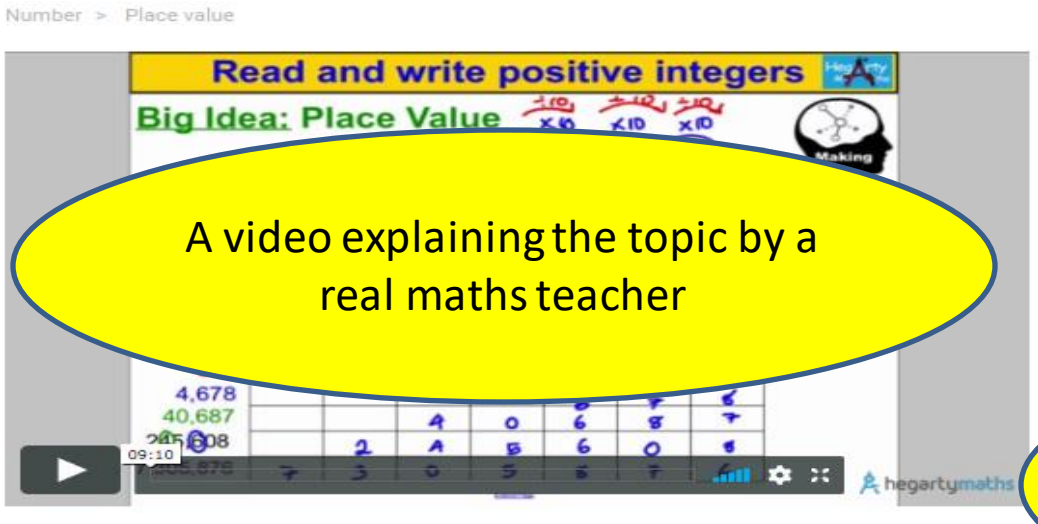
What is Hegarty Maths?

- 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!

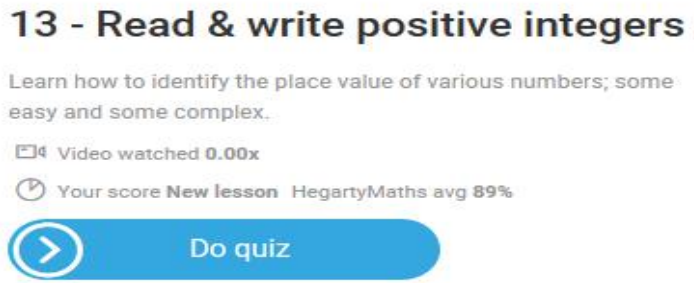
How do you login?

- 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.

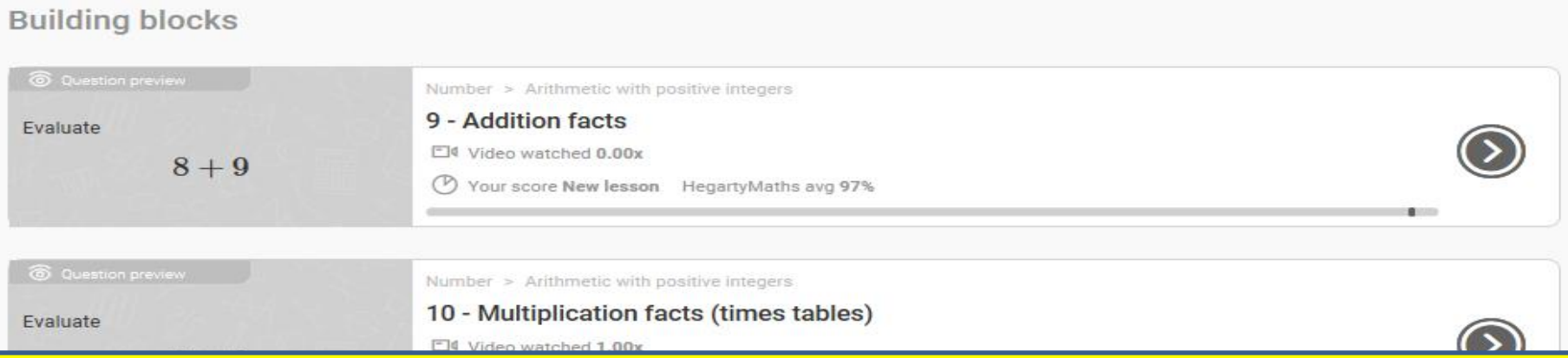
What does studying look like?



A video explaining the topic by a real maths teacher

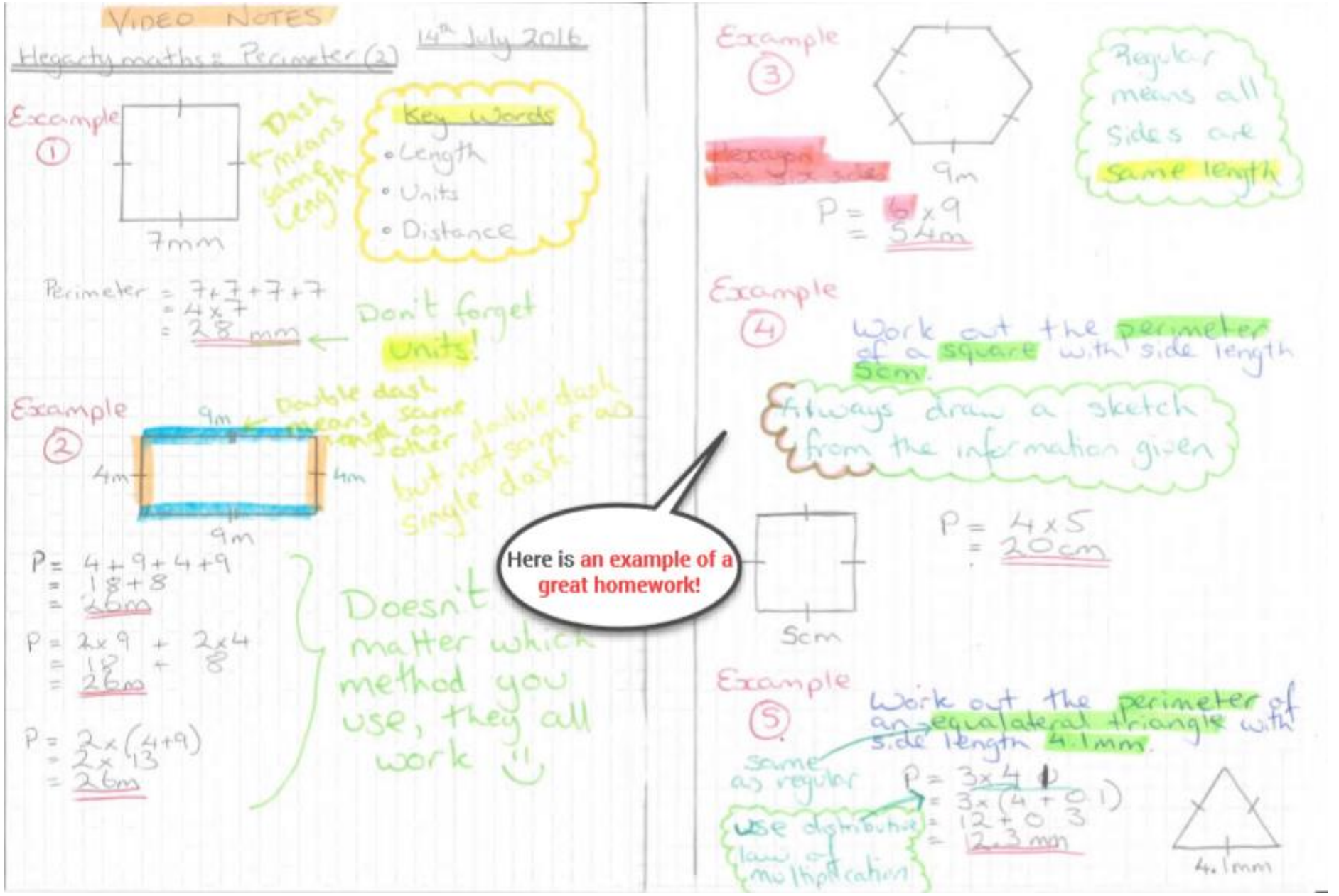


A self-marking quiz that is directly related to the video – no trick questions



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?



Example ⑥

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

8 × 4 = 32
8 × 0.4 = 3.2

$P = 8 \times 7.4$
$= 8 \times (7 + 0.4)$
$= 56 + 3.2$
$= 59.2\text{cm}$

Example ⑦

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

$P = (2 \times 5.2) + (2 \times 7.9)$ ← 2 × (7 + 0.9) = 14 + 1.8
$= 10.4 + 15.8$
$= 26.2\text{cm}$

Mental Maths
5.2 + 7.9 = 13.1
13.1 × 2 = 26.2

REMEMBER! There is more than one way 🙂

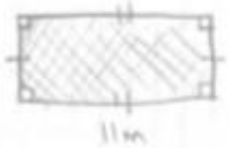
No Calculator

1) Perimeter of Shaded Shape?

4 sides all with single dash
↳ square

$P = 4 \times 2$
$= 8\text{mm}$ ✓

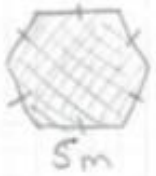
2) Perimeter of Shaded Shape?



Rectangle

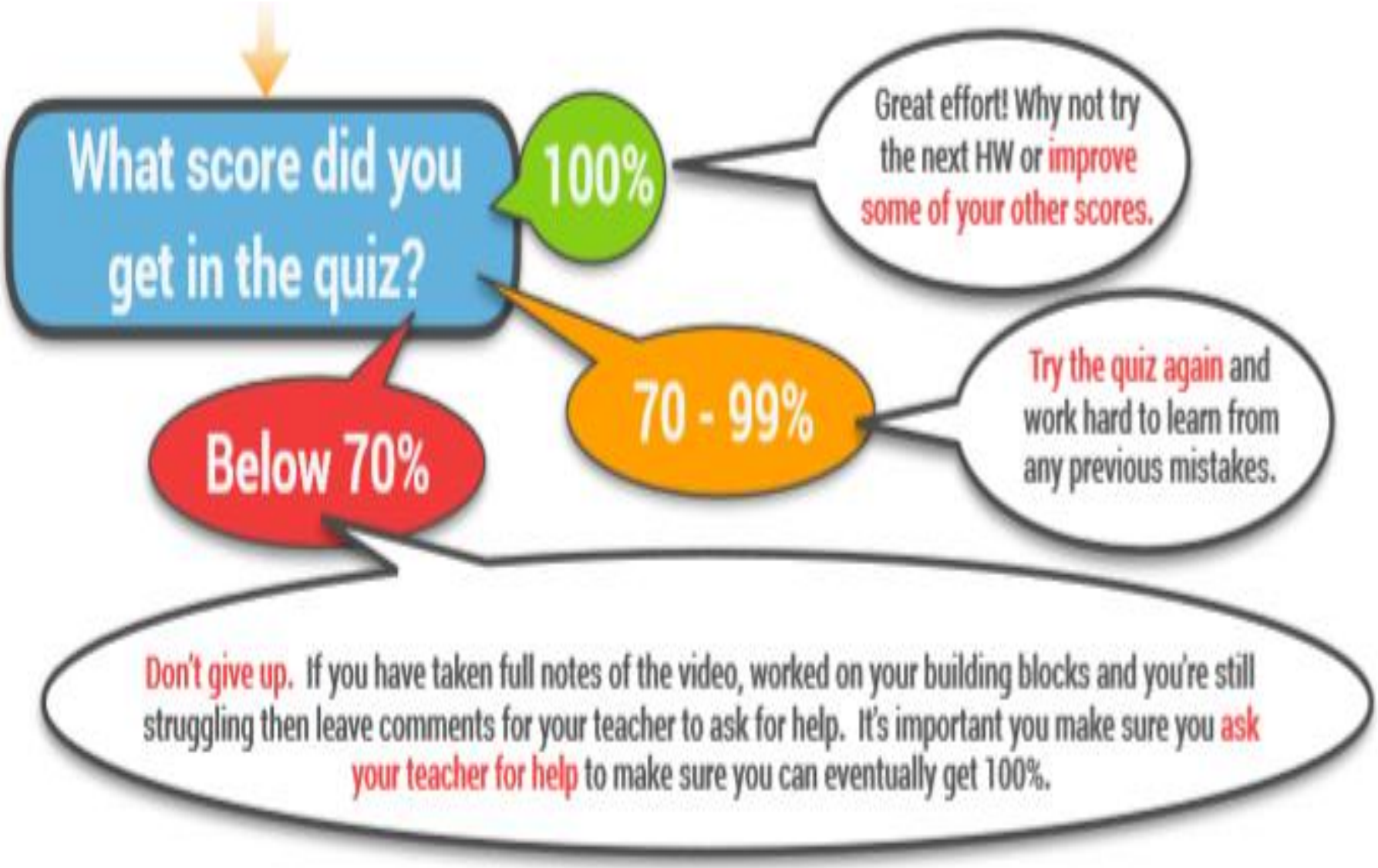
$P = (2 \times 6) + (2 \times 11)$
$= 12 + 22$
$= 34\text{m}$ ✓

3) Perimeter of Shaded Shape?



6 equal sides
↳ Hexagon

$P = 6 \times 5$
$= 30\text{m}$ ✓


What score did you get in the quiz?
100%
Great effort! Why not try the next HW or improve some of your other scores.
70 - 99%
Try the quiz again and work hard to learn from any previous mistakes.
Below 70%
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 spent on quizz

17.2 hrs

Total time watching videos

20.1 hrs

Total time doing Fix Up 5s

15 hrs

Time spent in total

52.3 hrs

Number of questions answer

1219

Questions answered correctly

1096

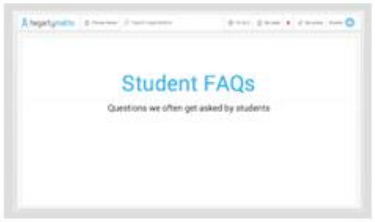
Minimum Target = 1 hour per week

Key Active Late 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 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%	0%	100%	100%	100%	100%		70%	100%	66%		81%
Zeeshan	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	80%	100%	100%	100%	100%			100%	93%		82%
Jordon	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%	20%	100%	100%	100%	100%			88%	80%		79%
Joseph	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%	60%	80%	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%	40%	100%	100%	100%	100%			100%	93%		81%
Joshua	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%	80%	100%	100%	100%	100%		90%	88%	100%		87%
Jessica	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%
Benjamin	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%	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.

What browser should I use?

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

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.

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

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

How can I contact HegartyMaths?

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