

MATHEMATICS

YEAR 8 Independent Learning Booklet
2021-2022



NAME:

FORM:

Contents

Contents:

- 1) Learning Journey
- 2) How to use HegartyMaths
- 3) How to log in to HegartyMaths
- 4) HegartyMaths Clips to revise along with lessons in school
- 5) Maths Vocabulary
- 6) Weekly Independent Tasks
- 7) Recommended reads

- During the term you will follow the Learning Journey shown and complete at least one Hegarty task on the topic.
- You will also have questions to complete in this Independent Learning Booklet
- These will be checked by your teacher each week.
- The work in this booklet is for lesson consolidation, revision, and some extra maths challenge!

Learning Journey

These are the topics we are covering each week this term. Tick the 'Red' 'Amber' or 'Green' column depending on how well you think you have understood each topic.

Spring 1	Topic	Red	Amber	Green
		:(:	:)
Week 1	Decimals and Percentages.			
Week 2	Fractions and Complex Calculations.			
Week 3	Standard Form.			
Week 4	Standard Form.			
Week 5	Number Sense.			
Week 6	Money Problems.			

Learning Journey

These are the topics we are covering each week this term. Tick the 'Red' 'Amber' or 'Green' column depending on how well you think you have understood each topic.

Spring 2	Topic	Red	Amber	Green
		:(:	:)
Week 1	Angles in Parallel Lines			
Week 2	Angles in Quadrilaterals			
Week 3	Angles in Polygons			
Week 4	Area			
Week 5	Area			
Week 6	Symmetry			

“BELIEF + HARD WORK + SUPPORT = SUCCESS.”

What does independent learning on Hegarty Maths look like?

Number > Place value

Read and write positive integers

Big Idea: Place Value

1,000,000s	100,000s	10,000s	1,000s	100s	10s	1s
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Units
678						
4,678						
40,687						
25,608						
25,678						

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

Spotted a mistake in this video?

Building blocks

Question preview

Evaluate

$8 + 9$

Number > Arithmetic with positive integers

9 - Addition facts

Video watched 0.00x

Your score New lesson HegartyMaths avg 97%

Question preview

Evaluate

8×9

Number > Arithmetic with positive integers

10 - Multiplication facts (times tables)

Video watched 1.00x

Your score New lesson HegartyMaths avg 96%


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. These are always found at the bottom of the page

An example of great work – copying the notes and practicing showing off your process when attempting the questions

Example ⑥ Work out the perimeter of a regular octagon with side length of 7.4cm.

$8 \times 4 = 32$
 $8 \times 0.4 = 3.2$

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



7.4cm

Example ⑦ Work out the perimeter of a rectangle with width 5.2cm and height 7.9cm.

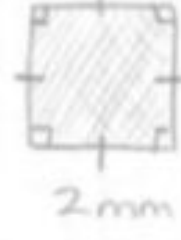
$P = (2 \times 5.2) + (2 \times 7.9) = 10.4 + 15.8$
 $= \underline{26.2\text{cm}}$

Mental Maths
 $5.2 + 7.9 = 13.1$
 $13.1 \times 2 = \underline{26.2}$

REMEMBER!
 There is more than one way!!

Quiz 2: Notes

1) Perimeter of Shaded Shape? *No Calculator*

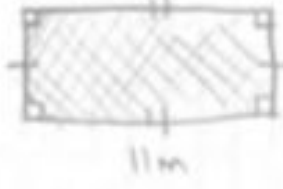


2mm

4 sides all with single dash
 \rightarrow Square

$P = 4 \times 2$
 $= \underline{8\text{mm}}$ ✓

2) Perimeter of Shaded Shape?




6m 11m

Rectangle

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

3) Perimeter of Shaded Shape?



5m

6 equal sides
 \rightarrow Hexagon

$P = 6 \times 5$
 $= \underline{30\text{m}}$ ✓

Don't forget to write a comment to your teacher if you get something wrong – they'll be able to help you!

What score did you get in the quiz?

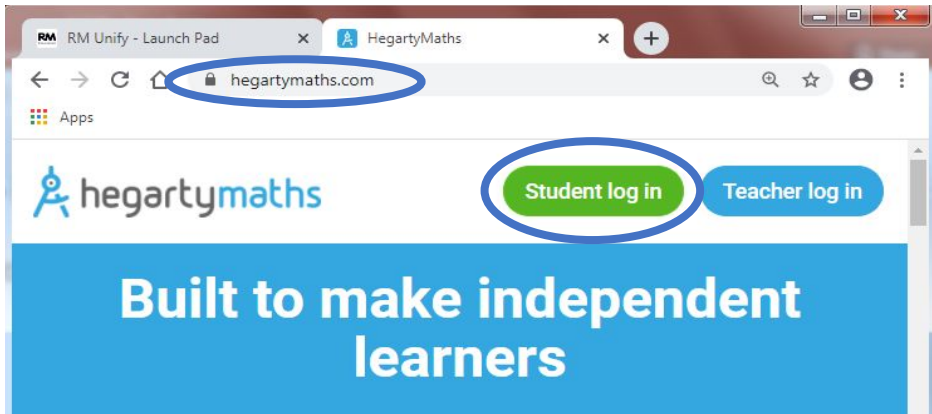
100% Great effort! Why not try the next HW or improve some of your other scores.

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%.



How to log into HegartyMaths

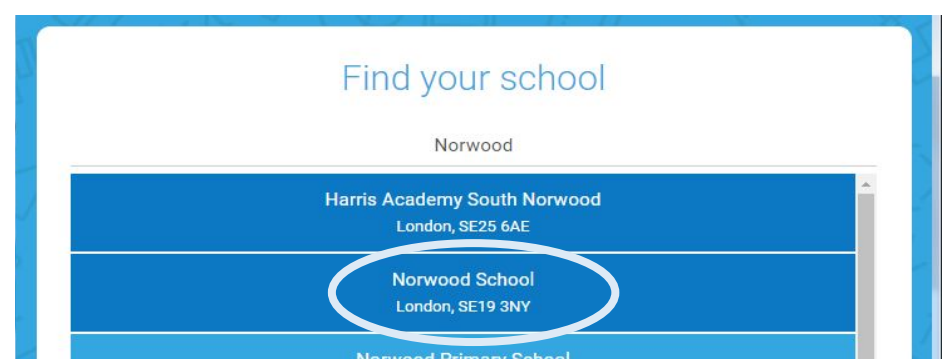


Step 1

From the website, www.hegartymaths.com, click on "Student log in"

Step 2

Type in 'Norwood' to find our school. It will be the second option



Step 3

Enter First name, Last name, and Date of birth. These must be the same as the details on the school register. Names are cAsE insEnsiTivE, so it doesn't matter if you write them in *lower case* or *UPPER* case or a *MiX*.

Step 4

The first time you log in, the system asks you to choose a password which you will need to write twice. Create a memorable password so you do not forget it. Only a teacher can reset a student password, so choose carefully! (Maybe write it down inside the cover of your Maths book?). Passwords ARE case sensitive!

The next time you log in, you'll just be asked for your password once.

If you have forgotten your password, click the link to request your teacher to reset it. They won't get the message until the next time they log in to HegartyMaths themselves, so don't leave your homework until the last minute!

Week beginning 3/1/2022

Hegarty Clip 89
(Percentage/Decimal Multipliers)

Attempts: _____
Score: _____

	Question	Answer	Mark
1	Arrange in order from largest to smallest. 21%, 0.25, 16%, 0.2, 3%		
2	Arrange in order from largest to smallest. 64%, 0.05, 100%, 0.99, 1.25, 3%		
3	250 students attend a primary school. 94% of the students go on a visit to the zoo. How many students went to the zoo?		
4	David's salary used to be £19,500 before he received a 8% pay rise. Work out how much David is now paid?		



72% of the Earth's surface is covered by water.



Tick all answers below which represent the percentage of earth which is not covered by water.

0.28

$\frac{56}{200}$

0.72

$\frac{7}{25}$

$\frac{36}{50}$

Use this space for notetaking from the Hegarty video, e.g. key words and examples



If you want to work even more on this topic, try task 90 on Hegarty!

Week beginning 10/1/2022

Hegarty Clip 62 (Amount as Fraction of Another)

Attempts: _____

Score: _____

	Question	Answer	Mark
1	$\frac{1}{2}$ of a number is 7, what is the number?		
2	$\frac{5}{6}$ of a number is 15, what is the number?		
3	$\frac{5}{12}$ of a number is 35, what is the number?		
4	A number is increased by $\frac{1}{3}$ to 16. what was the number?		
5	A number is decreased by $\frac{1}{4}$ to 21, what was the number?		



Rebecca is $\frac{1}{3}$ of Barry's age.

Barry is $\frac{1}{6}$ of Neville's age.

If Rebecca is 4 years old, how old is Neville?

Use this space for notetaking from the Hegarty video, e.g. key words and examples



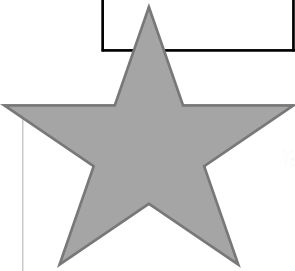
If you want to work even more on this topic, try tasks 97 and 98 on Hegarty!

Week beginning 17/1/2022

Hegarty Clip 122
(Ordinary to Standard Form)

Attempts: _____
Score: _____

	Question	Answer	Mark
1	Write these numbers in standard form: one million		
2	Write these numbers in standard form: nine hundred thousand		
3	Write these numbers in standard form: two thousandths		
4	The distance from the Sun to Pluto is 3.67 billion miles. Write this number in standard form		
5	The length of a cell is 0.016 mm Write this number in standard form.		



Which of the following cards correctly represents 0.0003?

3×10^4

$\frac{1}{3\,000}$

$\frac{1}{3^4}$

$\frac{1}{30\,000}$

3×10^{-4}

Use this space for notetaking from the Hegarty video, e.g. key words and examples



If you want to work even more on this topic, try task 123 on Hegarty!

Week beginning 24/1/2022

Hegarty Clip 125
(Multiply Standard Form)

Attempts: _____
Score: _____

	Question	Answer	Mark
1	Calculate: $2 \times 10^3 \times 3 \times 10^4$		
2	Calculate: $5 \times 10^{-14} \times 4 \times 10^{-7}$		
3	Calculate: $2 \times 10^2 \times 3 \times 10^7 \times 6 \times 10^4$		
4	Calculate: $(5 \times 10^4)^2$		



There are approximately 5×10^4 grains of rice in a one kilogram bag of rice.
Approximately how many grains of rice will be in 20 one kilogram bags of rice?

A penny weighs 0.0036kg.
Find the total mass of £400 worth of pennies.

Use this space for notetaking from the Hegarty video, e.g. key words and examples



If you want to work even more on this topic, try tasks 126 and 128 on Hegarty!

Week beginning 31/1/2022

Hegarty Clip 129
(Complex Calculations and Rounding)

Attempts: _____
Score: _____

	Question	Answer	Mark
1	Round: 93.2941 to 1dp		
2	Round: 10.046 to 2dp		
3	Round: 0.0346 to 3 dp		
4	Round: 844 to 1sf		
5	Round: 0.531 to 2sf		



Without working out the calculations,
which cards are equal in value?

$64 + \frac{38}{2}$

$(64 + 38) \div 2$

$\frac{1}{2} \times 64 + 38$

$\frac{64 + 38}{2}$

$64 + 38 \div 2$

$38 + 64 \div 2$

$38 \div 2 + 64$

Use this space for notetaking from the Hegarty video, e.g. key words and examples



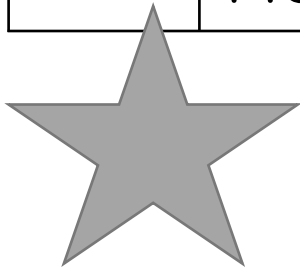
If you want to work even more on this topic, try task 130 on Hegarty!

Week beginning 7/2/2022

Hegarty Clip 747
(Money Problems)

Attempts: _____
Score: _____

	Question	Answer	Mark
1	Ed buys a box of eggs costing £2.30, two packs of bacon for £2.60 each and two tins of baked beans. He pays with a £10 note and gets 80p change. How much does a tin of beans cost in pounds, £?		
2	A notebook costs £1.50, a pen costs 37p , a pencil costs 26p and a sharpener costs 85p. Remi buys 3 pencils, 2 pens, 3 sharpeners and some notebooks. He pays with £8 and receives 93p change. How many notebooks did he buy?		



72% of the Earth’s surface is covered by water.



Tick all answers below which represent the percentage of earth which is not covered by water.

0.28

$\frac{56}{200}$

0.72

$\frac{7}{25}$

$\frac{36}{50}$

Use this space for notetaking from the Hegarty video, e.g. key words and examples



If you want to work even more on this topic, try task 763 on Hegarty!

Week beginning 21/2/2022

Hegarty Clip 481
(Alternate Angles)

Attempts: _____
Score: _____

Hegarty Clip 482
(Co-interior Angles)

Attempts: _____
Score: _____

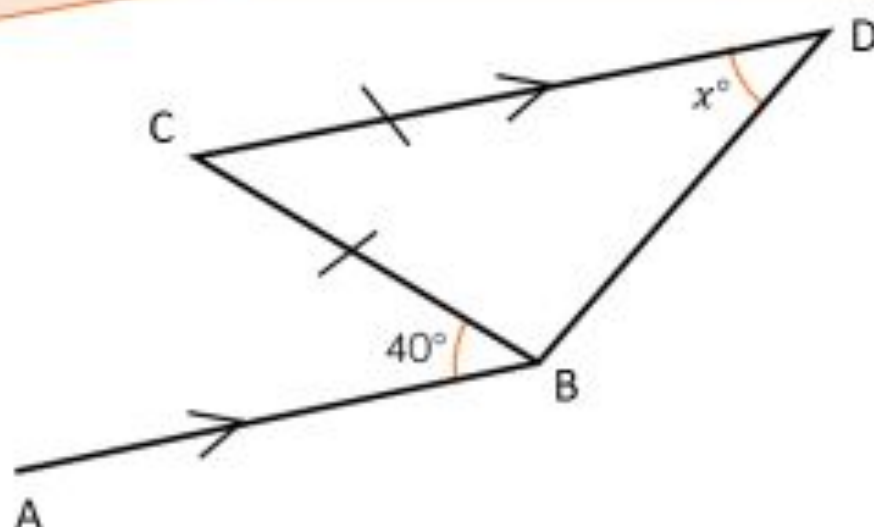
Hegarty Clip 483
(Corresponding Angles)

Attempts: _____
Score: _____



Rosie is calculating the value of the angle labelled x .

x is equal to 40 because angle BCD is alternate to ABC and triangle BCD is isosceles.



What mistake has she made?

Use this space for notetaking from the Hegarty video, e.g. key words and examples




If you want to work even more on this topic, try task 490 on Hegarty!

Week beginning 28/2/2022

Hegarty Clip 824 (Quadrilaterals)

Attempts: _____

Score: _____

	Question	Answer	Mark
1	A quadrilateral has no equal angles and only one pair of parallel sides. What type of quadrilateral is it?		
2	True or false: <i>A rhombus has four equal length sides.</i>		
3	Draw a kite in the space to the right		
4	What is the mathematical name of this shape? 		



Complete the table below.

	Square	Rhombus	Trapezium
Number of pairs of parallel sides	2		
Diagonals always equal in length			No

Use this space for notetaking from the Hegarty video, e.g. key words and examples



If you want to work even more on this topic, try task 683 on Hegarty!

Week beginning 7/3/2022

Hegarty Clip 561
(Interior Angles in Polygons)

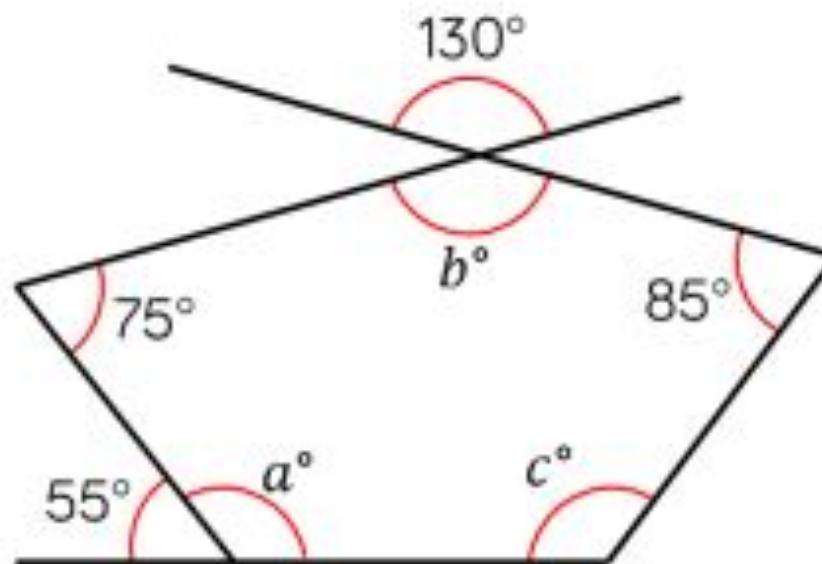
Attempts: _____
Score: _____

Hegarty Clip 563
(Exterior Angles in Polygons)

Attempts: _____
Score: _____



Calculate the unknown angles in this polygon.
Give mathematical reasons for all your answers.



Does the order in which you find the angles matter?

Use this space for notetaking from the Hegarty video, e.g. key words and examples



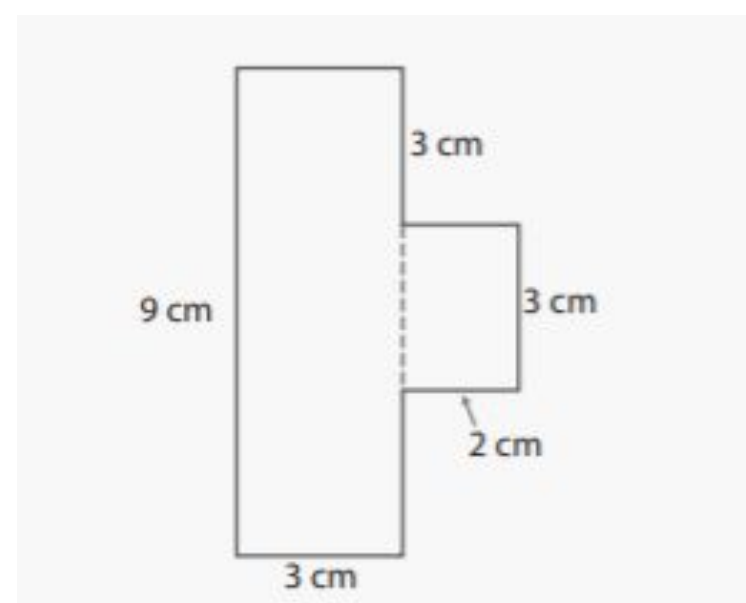
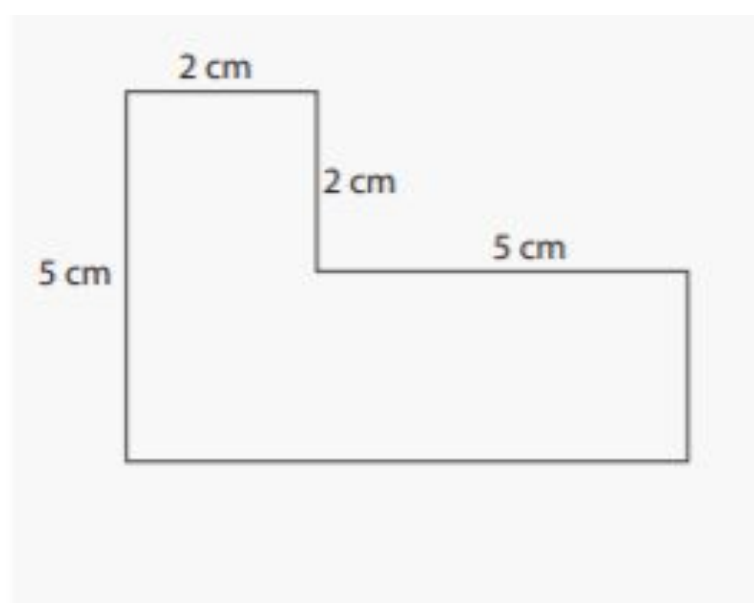
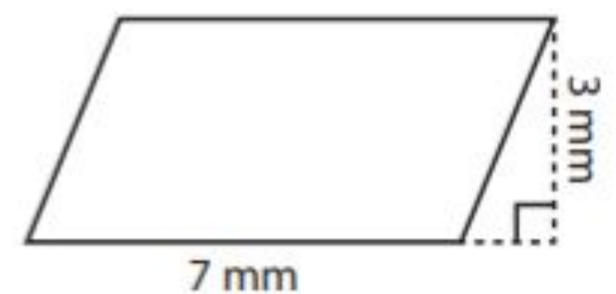
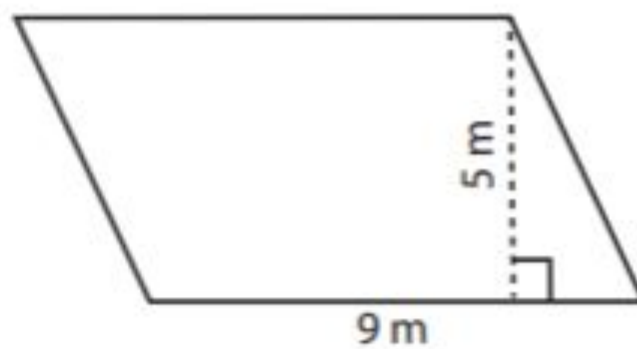
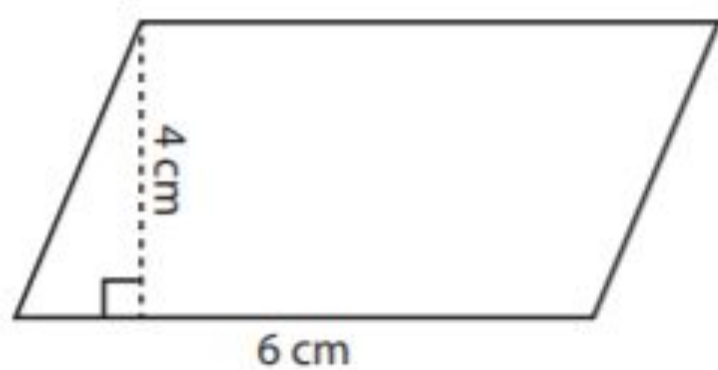
If you want to work even more on this topic, try tasks 562 and 564 on Hegarty!

Week beginning 14/3/2022

Hegarty Clip 559 (Area of a Trapezium)

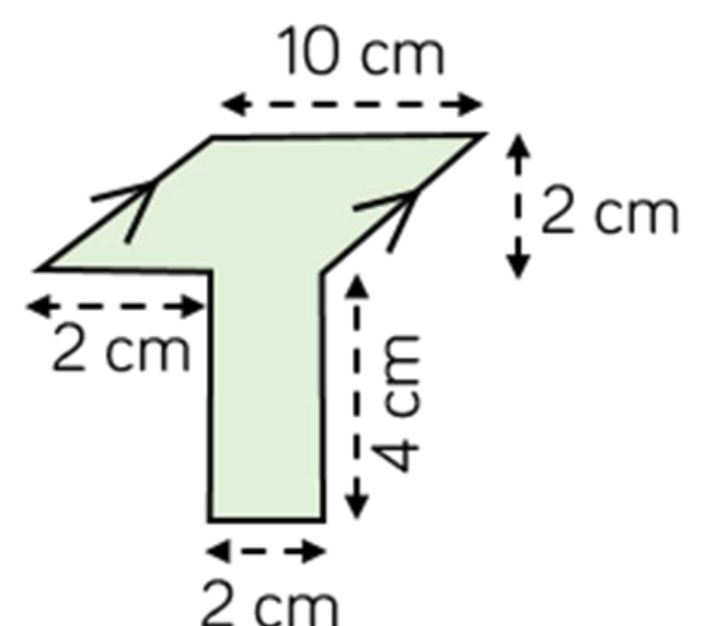
Attempts: _____
Score: _____

Find the area of the following shapes:



Show that the area of the shape is 28 cm^2 .

What smaller shapes did you split the shape into?



Use this space for notetaking from the Hegarty video, e.g. key words and examples



If you want to work even more on this topic, try task 555 on Hegarty!

Week beginning 21/3/2022

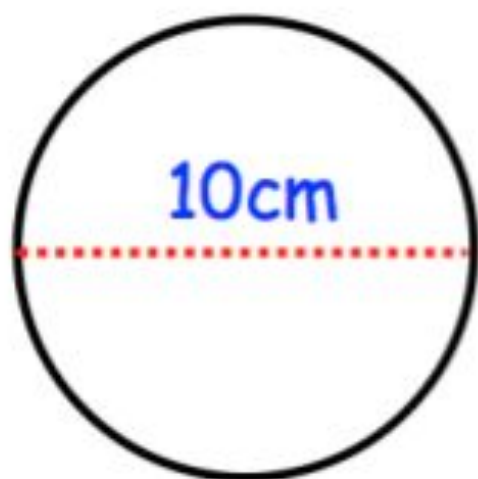
Hegarty Clip 539
(Area of a Circle)

Attempts: _____
Score: _____

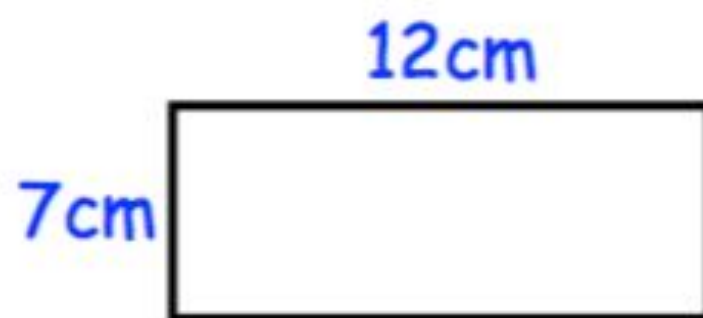
Question 1: A circular table top has a diameter of 90cm. Work out the area of the table top.

Question 2: A circular badge has radius 3cm. Calculate the area of the badge.

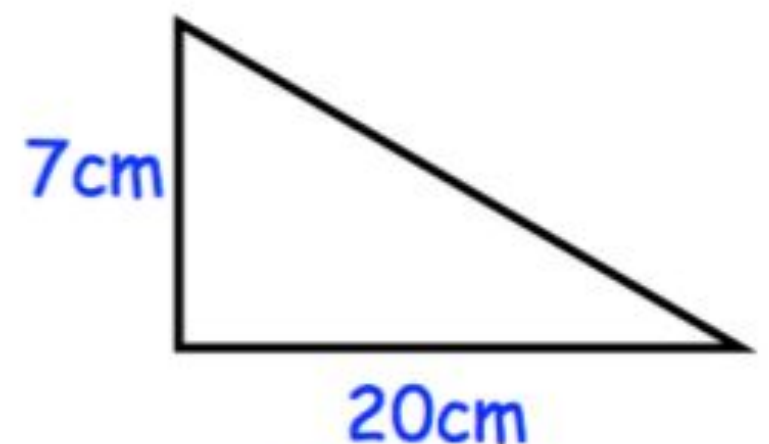
Question 3: Shown below is a circle, a rectangle and a right angled triangle.
Which shape has the greatest area?



Shape A



Shape B



Shape C

Use this space for notetaking from the Hegarty video, e.g. key words and examples



If you want to work even more on this topic, try task 540 on Hegarty!

Week beginning 28/3/2022

Hegarty Clip 827
(Line Symmetry)

Attempts: _____

Score: _____

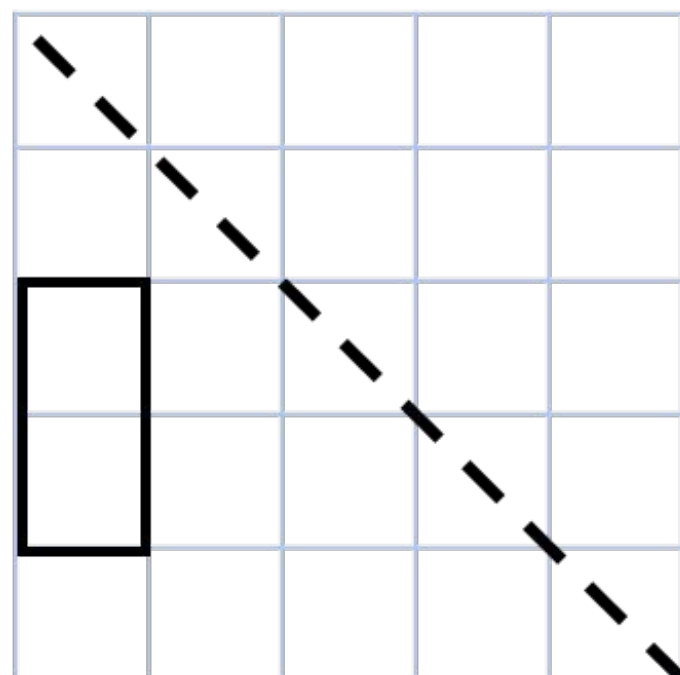
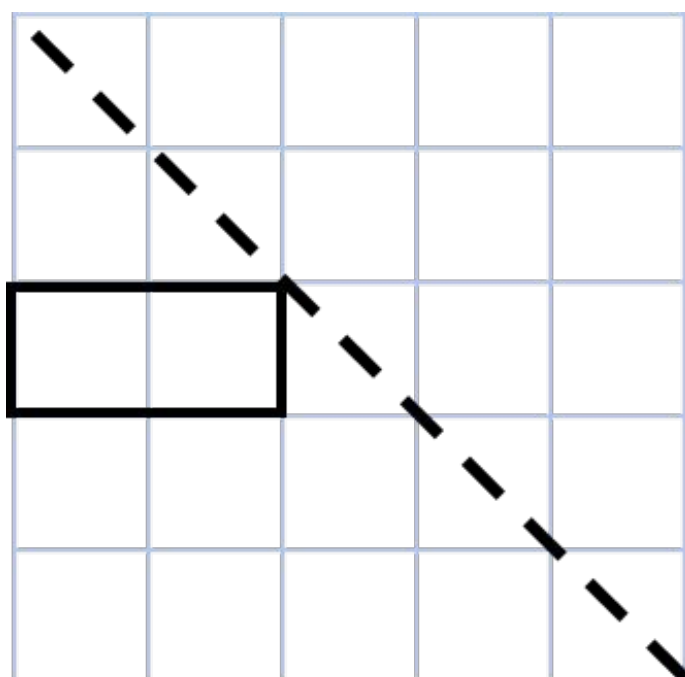
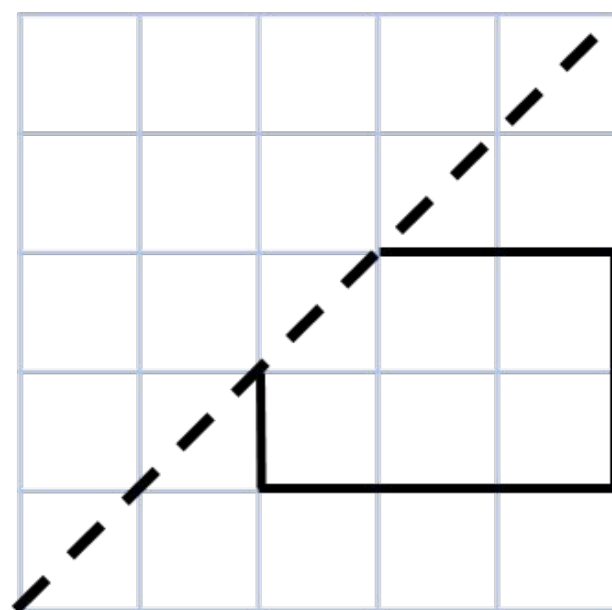
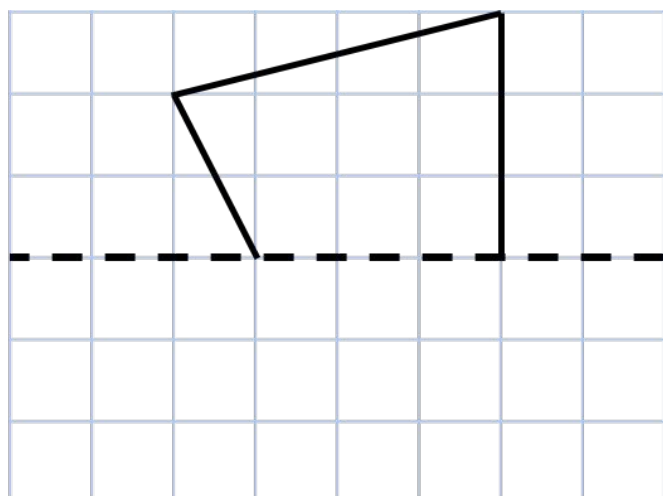
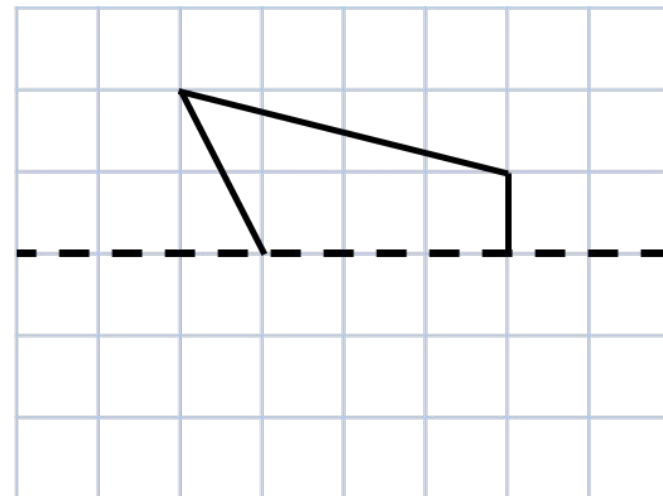
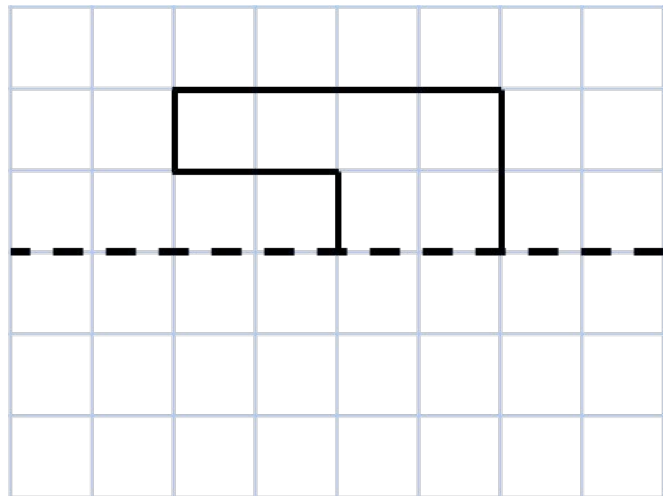
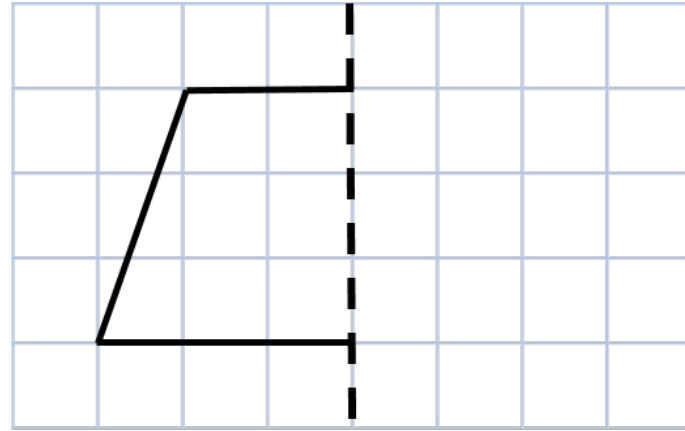
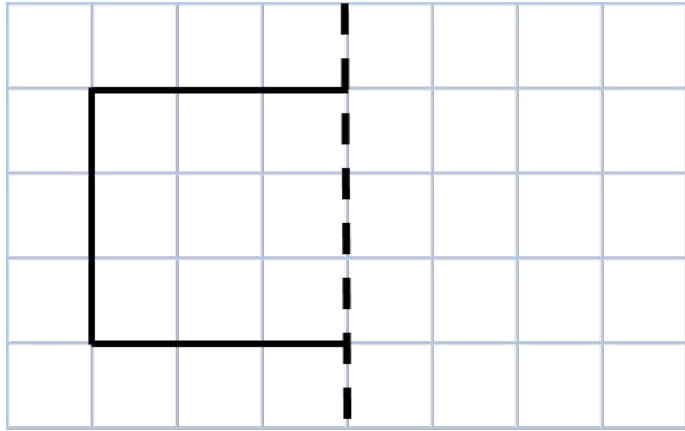
Use this space for notetaking from the Hegarty video, e.g. key words and examples



Now complete the worksheet on the following pages.

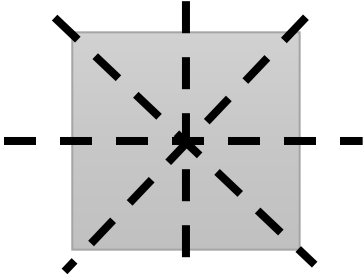
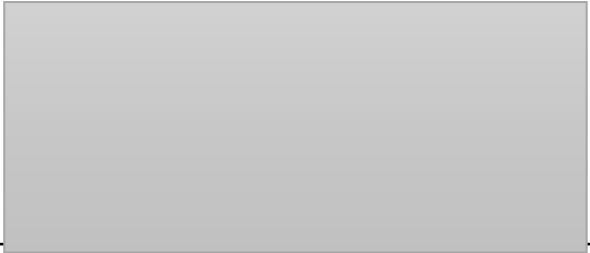
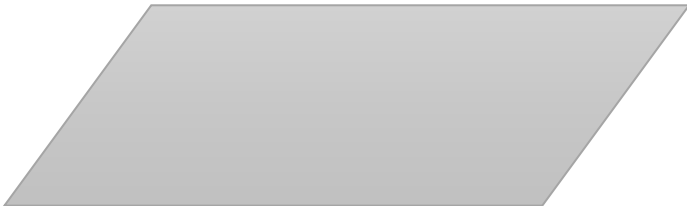
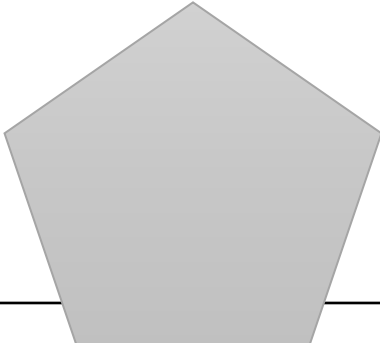
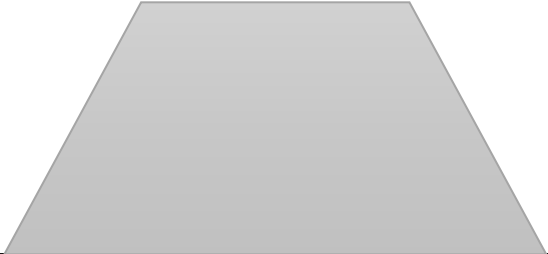
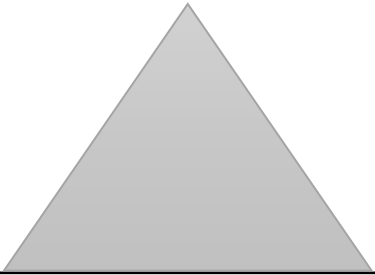

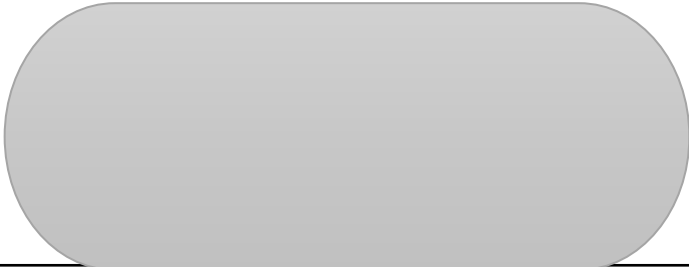
Symmetry and Reflection Worksheet

1) Reflect the shapes in the given lines.

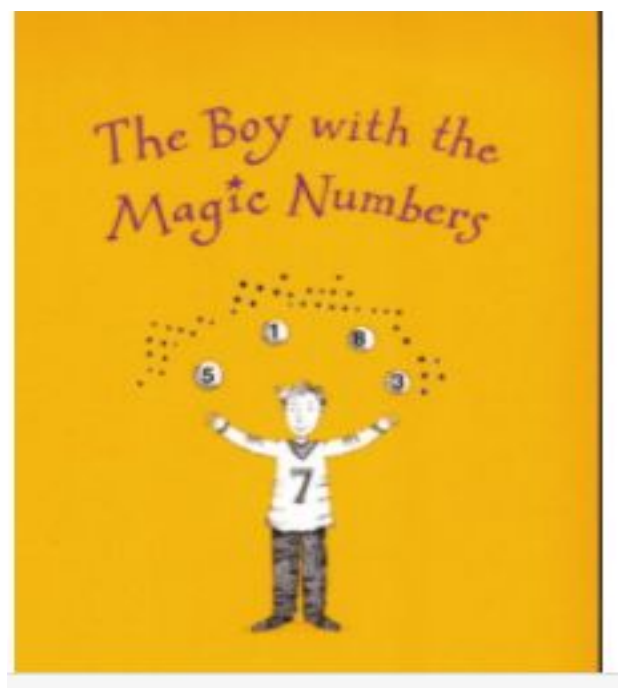


2) Complete the table by writing the name of each shape and the number of lines of symmetry the shape has.

The first one has been done for you.

Shape Name	Image	Line of Symmetry
Square		4
		
		
		
		
Equilateral Triangle		
		

Mr Hayes



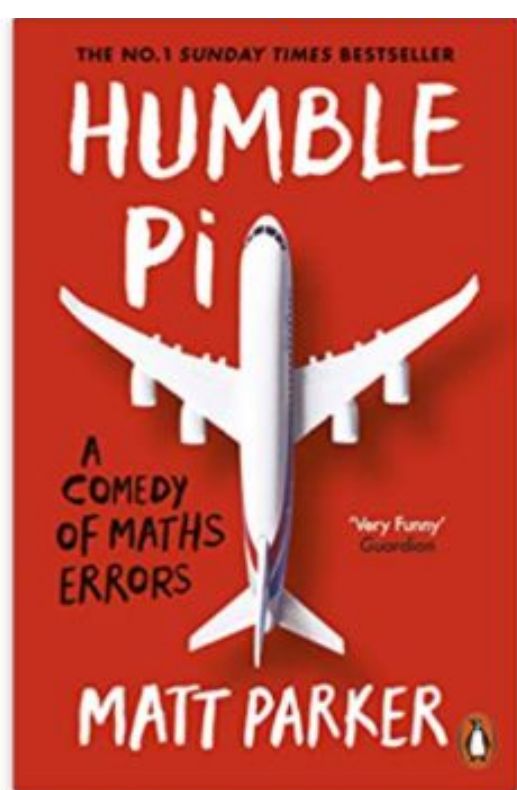
Ms LT



'Sushi Kokuu Hen'

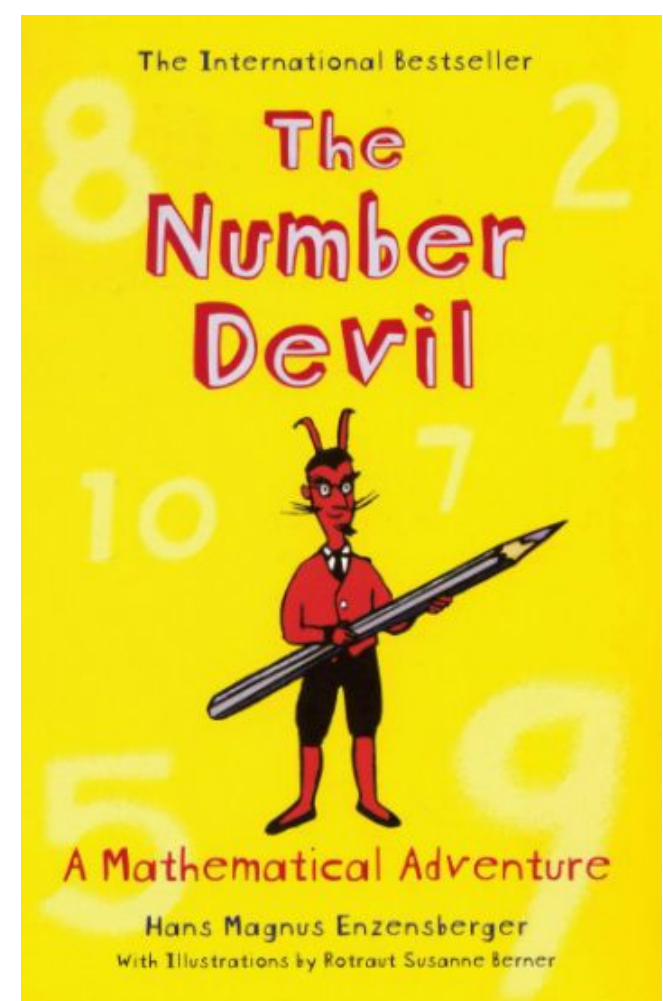
Recommended Reads!

Mr Brown

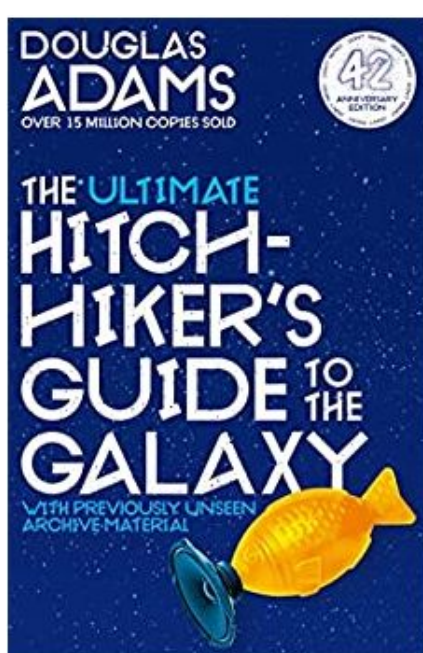


Each maths teacher has suggested a maths based book you might enjoy! Some fictional, some factual!

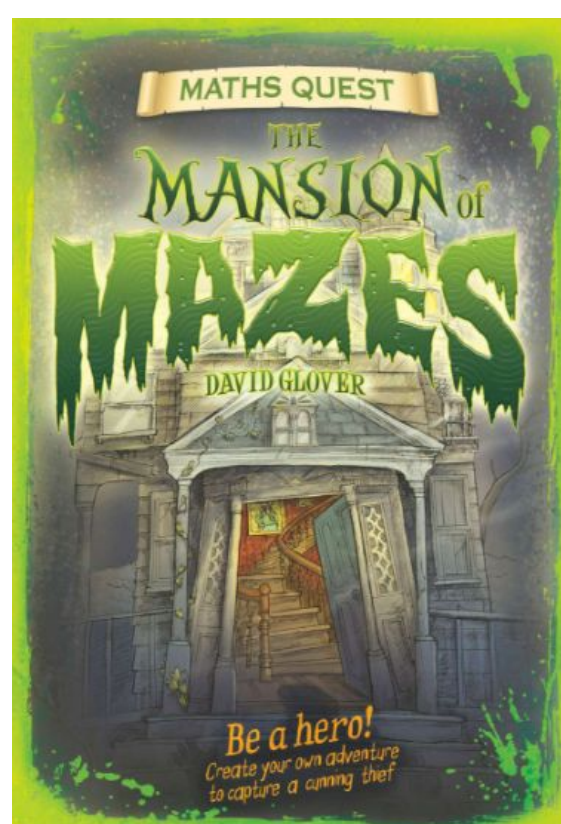
Mr Malone



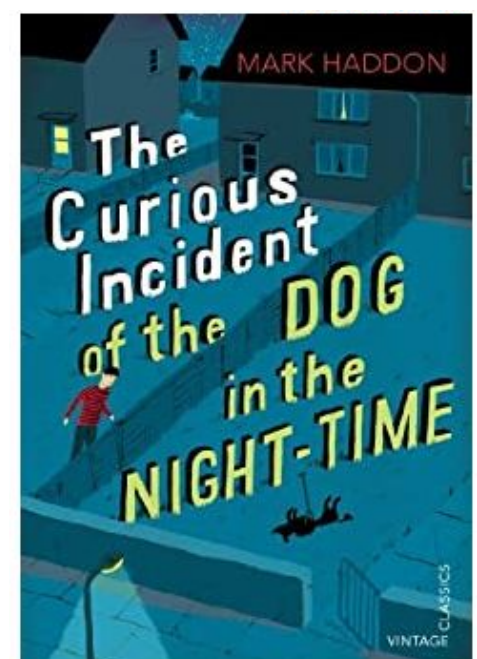
Ms Mendez



Mr U



Mr Purvis



Notes

Notes

For more information or guidance on completing your Independent Learning Booklet, speak to or email your Maths teacher:

Mr Uwaechi - uwaechi.f@thenorwoodschool.org
Head of Mathematics Faculty

Ms Mendez – mendez.f@thenorwoodschool.org
KS3 Coordinator

Ms LT – thomaslestrade.j@thenorwoodschool.org

Mr Brown – brown.j@thenorwoodschool.org

Ms Hayes – hayes.r@thenorwoodschool.org

Mr Malone – malone.w@thenorwoodschool.org

Mrs Bright - bright.m@thenorwoodschool.org