Pre-Assessment

one digit per box

Version A

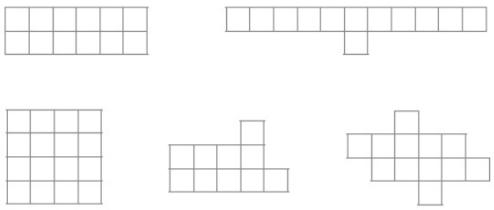
White Rose MATHS

Area, perimeter and volume

Name: _____

1 Tick the shapes that have an area of 12 cm²

Each small square represents 1 cm²

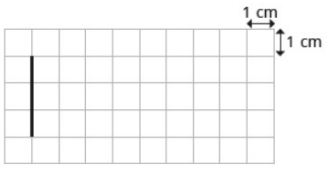


2 marks

2 The perimeter of a rectangle is 18 cm.

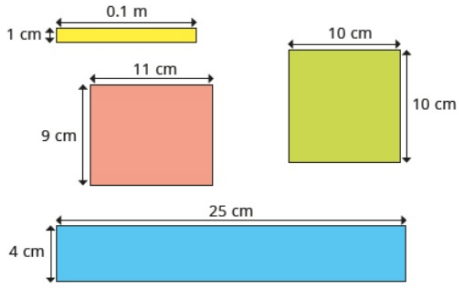
One of the sides has been drawn for you.

Complete the rectangle.



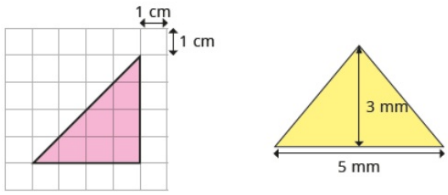
1 mark

3 Tick the shapes that have an area of 100 cm²

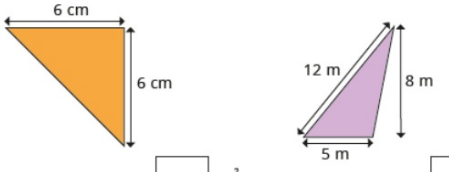


2 marks

4 Work out the area of each triangle.



cm² mm²



cm² m²

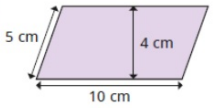
4 marks

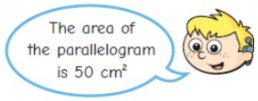
09/02/26

Pre-Assessment

one digit per box

5





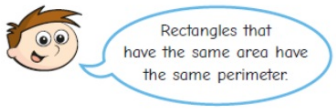
What mistake has Max made?

_____ 1 mark

What is the area of the parallelogram?

☐ cm² 1 mark

6



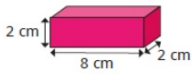
Is Teddy correct? _____

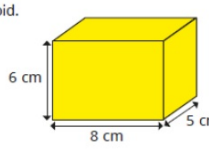
Explain your answer.

_____

_____ 1 mark

7 Work out the volume of each cuboid.



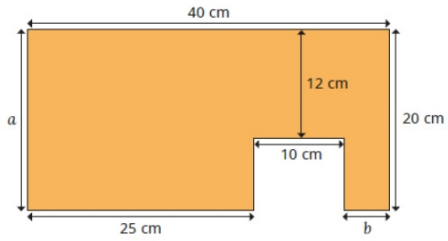


☐ cm³ ☐ cm³ 2 marks

8 Draw two rectilinear shapes that have the same perimeters but different areas.

2 marks

9 Here is a shape.



Work out the unknown lengths.

$a =$ ☐ cm $b =$ ☐ cm 2 marks

What is the area of the shape?

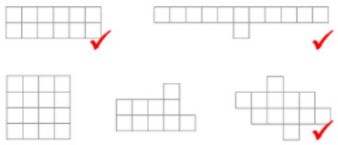
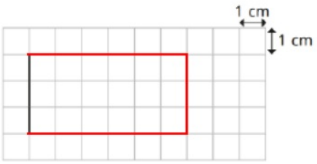
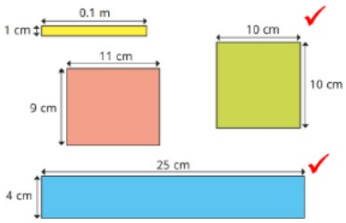
☐ cm² 2 marks

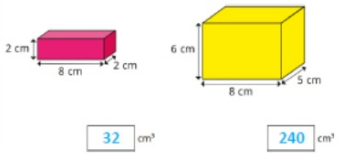
White Rose MATHS

09/02/26

Pre-Assessment - Answers

one digit per box

Question	Answer	Marks	Notes and guidance
1		2	Award 1 mark for 2 correct answers with no more than 1 incorrect answer.
2		1	Accept slight inaccuracies if the intention is clear.
3		2	Award 1 mark for each correct answer.
4	8 cm² 7.5 mm² 18 cm² 20 m²	4	Award 1 mark for each correct answer.

Question	Answer	Marks	Notes and guidance
5	Max has not multiplied the base by the height. He has multiplied 10 × 5	1	Accept any valid response.
	40 cm²	1	
6	No "For example, Rectangle 1 – Length = 9 cm Width = 1 cm Perimeter = 20 cm Area = 9 cm² Rectangle 2 – Length = 8 cm Width = 2 cm Perimeter = 20 cm Area = 16 cm²"	1	Accept any valid response. Do not award any marks for 'No' with no explanation.
7	 32 cm³ 240 cm³	2	Award 1 mark for each correct answer.
8	Any rectangles that are drawn that have the same perimeter but different areas.	2	Award 1 mark for drawing 2 shapes with the same perimeter.
9	a = 20 cm b = 5 cm	2	Award 1 mark for each correct answer.
	720 cm²	2	Award 1 mark for use of an appropriate method with no more than one arithmetical error.

09.02.26

LI: to find area of shapes.

one digit per box

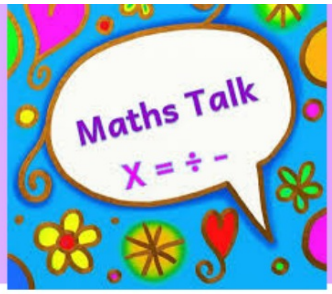
Underline your date and LI

Key vocabulary

area, covers, surface, square centimetre (cm^2), square metre (m^2), square millimetre (mm^2), perimeter, factor pairs

Our Learning Journey

Step 1	Shapes – same area
Step 2	Area and perimeter
Step 3	Area of a triangle – counting squares
Step 4	Area of a right-angled triangle
Step 5	Area of any triangle
Step 6	Area of a parallelogram
Step 7	Volume – counting cubes
Step 8	Volume of a cuboid



- How can you find the area of this shape? Is there more than one way?
- Do shapes that have the same area have to look the same?
- How can you use factor pairs to find shapes that would have the same area?
- How would you draw more than one rectangle that has an area of _____ cm^2?

Starter/Recap

Flashback 4

Year 6 | Week 9 | Day 1

1)

100%			
25%	25%	25%	25%

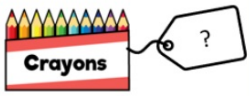
25% = 52

100% = ☐

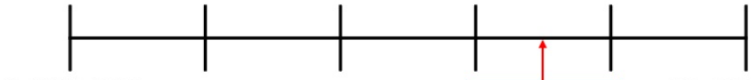
2) Calculate 50% of 480 = ☐

3) 1 book + 3 packs of crayons = £8.00

1 pack of crayons = ☐



4)



☐

White Rose Maths

Challenge:

1. Nine million + 300,00 56,000 + three hund and nineteen.
2. I have £11 more than Felix has 3 £5 notes. much do I have?
3. 243 x 15
4. Simplify: $\frac{18}{48} = \frac{\square}{8}$
5. $\frac{1}{4} \times \frac{1}{3}$
6. 846 ÷ 10

Starter/Recap

Flashback 4

Year 6 | Week 9 | Day 1

1)

100%			
25%	25%	25%	25%

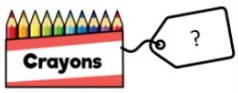
25% = 52

100% = 208

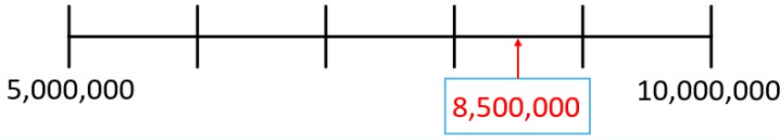
2) Calculate 50% of 480 = 240

3) 1 book + 3 packs of crayons = £8.00

1 pack of crayons = £1.50



4)



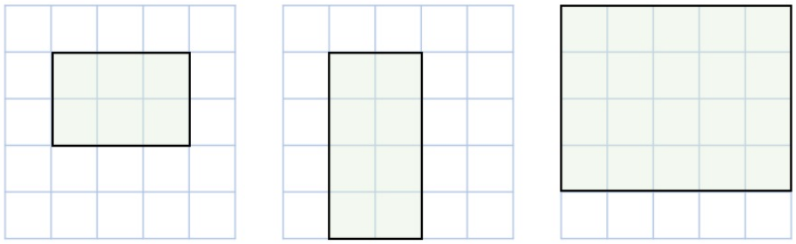
White Rose Maths

Challenge:

1. Nine million + 300,000 + 56,000 + three hundred and nineteen. 9,356,319
2. I have £11 more than Fel Felix has 3 £5 notes. Hov much do I have? £26
3. 243 x 15 = 3,645
4. Simplify: $\frac{18}{48} = \frac{3}{8}$
5. $\frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$
6. 846 ÷ 10 = 84.6

Assessment

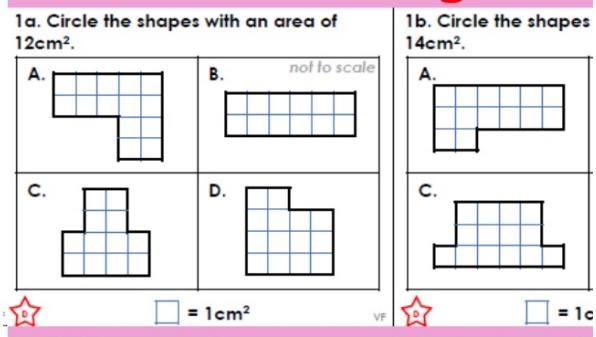
1) Work out the area of the shapes.
Each square represents 1 cm²

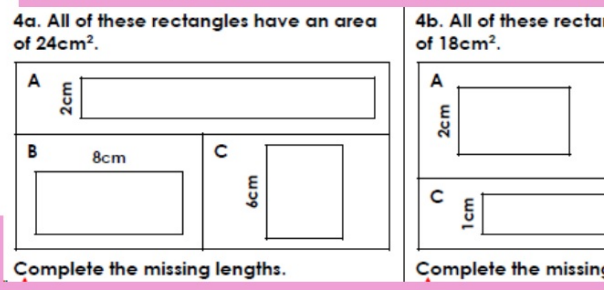


2) Find all the factors of 20

3) Find all the factors of 16

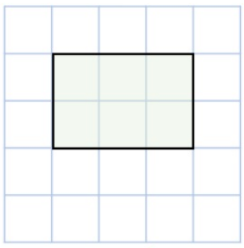
Challenge:



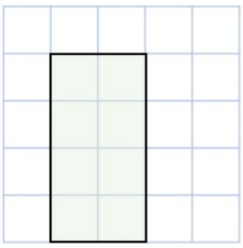


Assessment

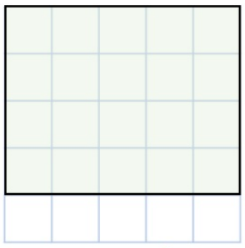
Work out the area of the shapes.
Each square represents 1 cm²



6 cm²



8 cm²

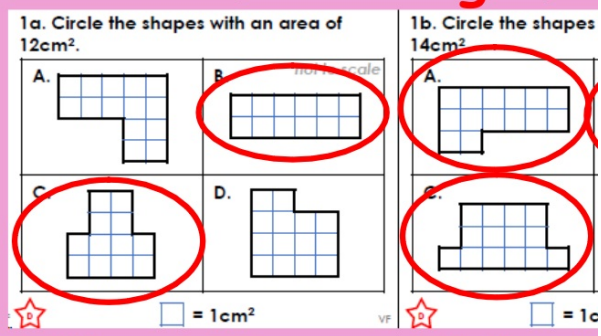


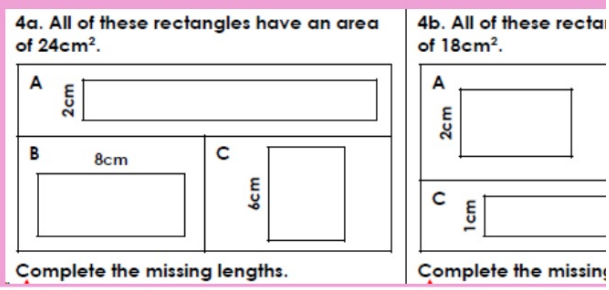
20 cm²

Find all the factors of 20 1, 2, 4, 5, 10, 20

Find all the factors of 16 1, 2, 4, 8, 16

Challenge:





4a. A. 12cm; B. 3cm; C. 4cm

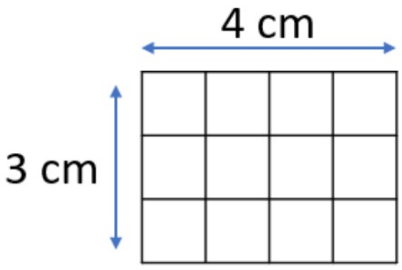
4b. A. 9cm; B

I do:

area
perimeter
factor pairs

Use the diagram to complete the sentences.

Each square represents 1 cm²



Length × Width

Have a think

The length of the rectangle is ☐ cm.

The width of the rectangle is ☐ cm.

The total number of squares in the rectangle is ☐

The area of the rectangle is ☐ cm²

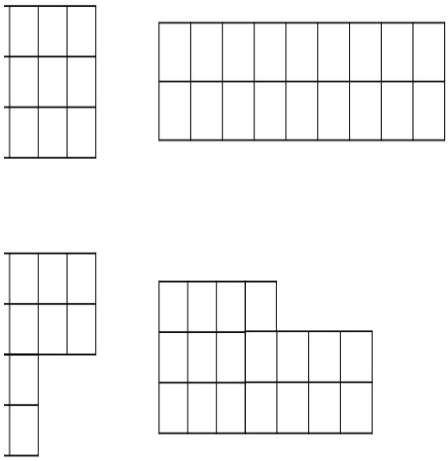
We do:

area
perimeter
factor pairs

Challenge

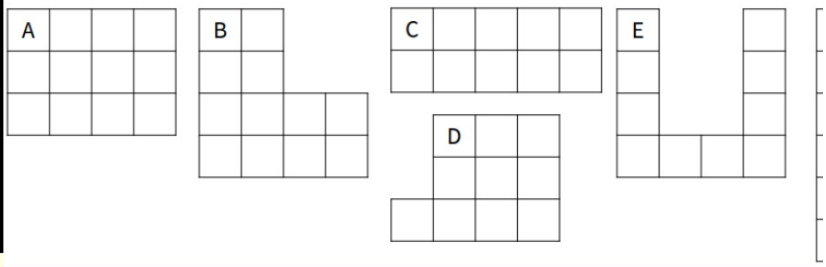
apes have an area of 18 cm²?

are represents 1 cm²



1. Sort these shapes into the Carroll diagram then add one extra shape to each b

	Area of 10cm²	Area of 12cm²
Quadrilateral		
Not a quadrilateral		

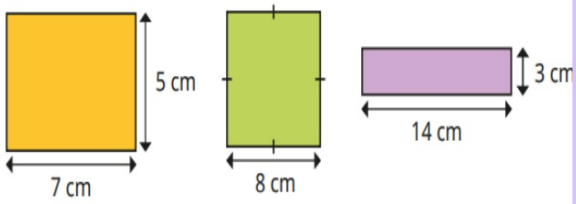


Task 1

You do

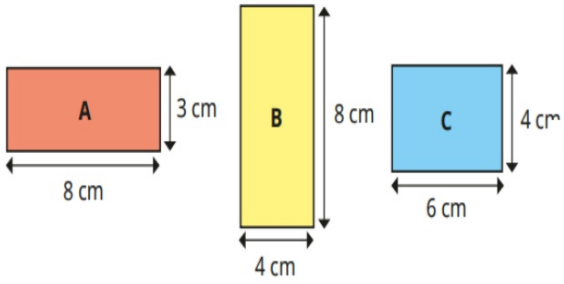
Task 2:

- Find the areas of the rectangles.



Explain your method to a partner.

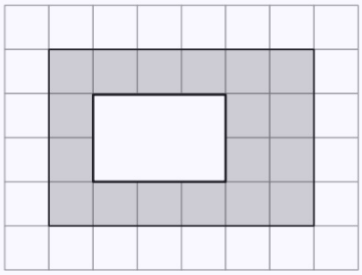
- Which two rectangles have the same area?



How do you know?

Challenge

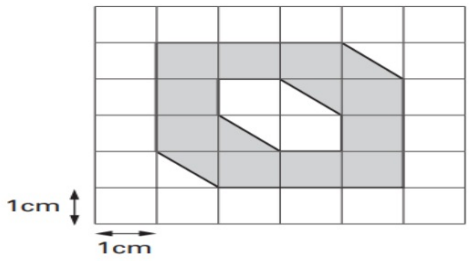
Here is a 1 cm square grid. Some of the grid is shaded.



What is the area of the shaded shape?

cm²

Here is a 1cm square grid. Some of the grid is shaded.



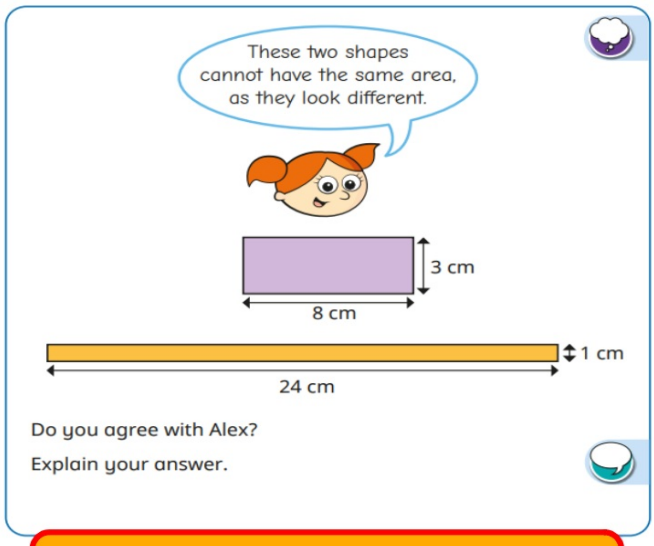
What is the area of the shaded shape?

cm²

Task 3: We do

You do

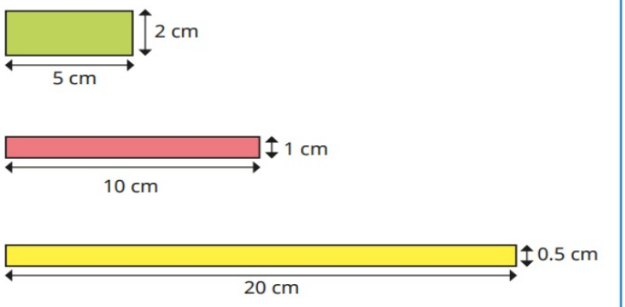
Reasoning and problem solving



Do you agree with Alex?

Explain your answer.

Which rectangle has the greatest area?



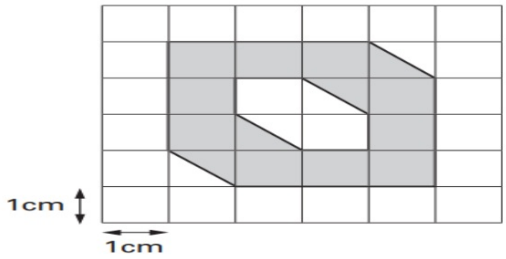
Sketch the next rectangle in the pattern.

What is its area?

How do you know?

Challenge:

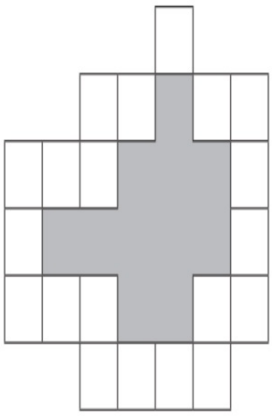
Here is a 1cm square grid. Some of the grid is shaded.



What is the area of the shaded shape?

Plenary:

Here is a set of 20 squares around a shaded space.

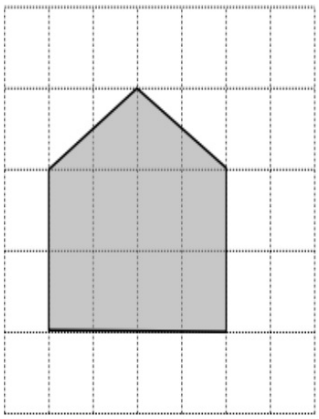


What is the area of the shaded space?

squares

[1 mark]

Here is a shaded shape on a 1 cm square grid.



What is the area of the shaded shape?

cm^2

[1 ma

Reflection

1. Tony has created a shape using rectangles, but has hidden the design of it.

He says,

It is a compound shape that is made up of more than 2 rectangles.

One of the rectangles has a width of 3.5cm.

One of the rectangles has a length between 50mm and 135mm, which is also a whole number in cm.

The shape has total area greater than $50cm^2$, but less than $100cm^2$.

Investigate what his shape could look like. Explore different possibilities.

How would you go about solving this question?
What steps would you use?

10/02/26

LI: to understand area and perimeter

Underline your date and LI

one digit per box

Key vocabulary

area, covers, surface, square centimetre (cm^2), square metre (m^2), square millimetre (mm^2), perimeter, factor pairs, formula, formule

Our Learning Journey

Step 1	Shapes – same area
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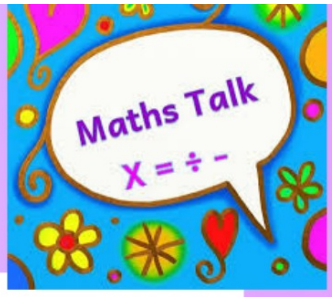
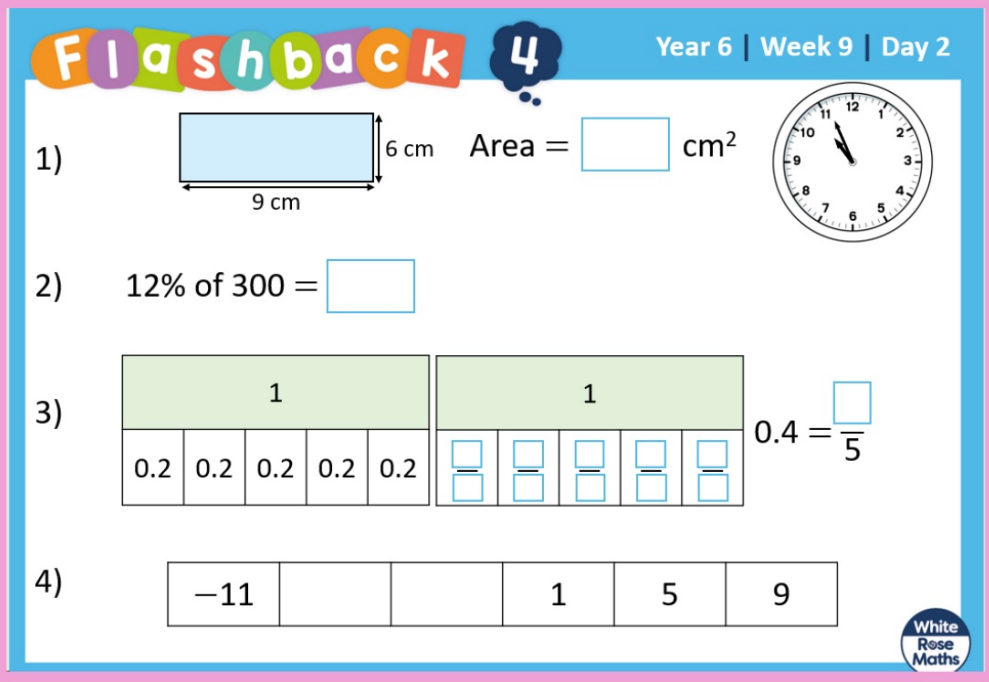
Step 4	Area of a right-angled triangle
Step 5	Area of any triangle
Step 6	Area of a parallelogram
Step 7	Volume – counting cubes
Step 8	Volume of a cuboid



- What is perimeter? What is area?
- How can you find the perimeter of the rectangle?
- How can you find the area of the rectangle?
- What is the formula to find the area of a rectangle?
- How can you split the rectilinear shape into rectangles? Is there more than one way?
- How is finding the area/perimeter of a rectilinear shape different to finding the area/perimeter of a rectangle? How is it similar?
- How can you work out the other side lengths?

Starter/Recap



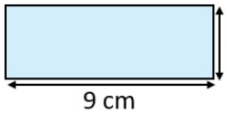
Challenge:

1. Six million + 210,000 + 33,000 + two hundred and four.
2. I gave £10, six 20p and a 10p. I got 5p back. How much did I pay?
3. A factory makes 847 items every day for 14 days. Total items?
4. Simplify: $\frac{14}{49}$
5. $\frac{1}{7} \times \frac{3}{4}$
6. What is the value of the 8 in the answer to: 718 ÷ 10?

Starter/Recap

Flashback 4

Year 6 | Week 9 | Day 2

1) 

Area = 54 cm^2

2) 12% of 300 = 36

3)

1					1				
0.2	0.2	0.2	0.2	0.2	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$

$0.4 = \frac{2}{5}$

4)

−11	−7	−3	1	5	9

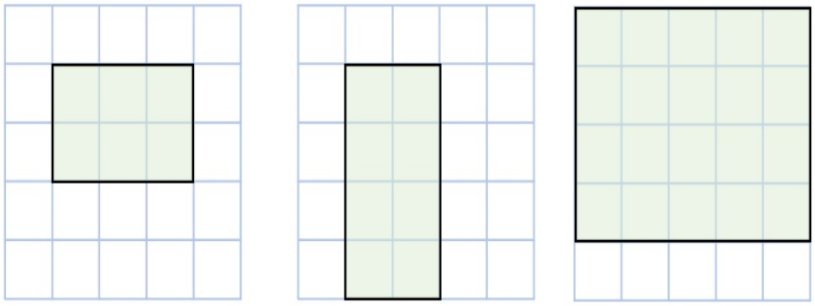
White Rose Maths

Challenge:

1. Six million + 210,000 + 33,000 + two hundred and four. 6,243,204
2. I gave £10, six 20p and a 10p. I got 5p back. How much did I pay? £11.25
3. A factory makes 847 items every day for 14 days. Total items? 11,858
4. Simplify: $\frac{14}{49} = \frac{2}{7}$
5. $\frac{1}{7} \times \frac{3}{4} = \frac{3}{28}$
6. What is the value of the in the answer to: 718 ÷ 1(8 tenths

Assessment

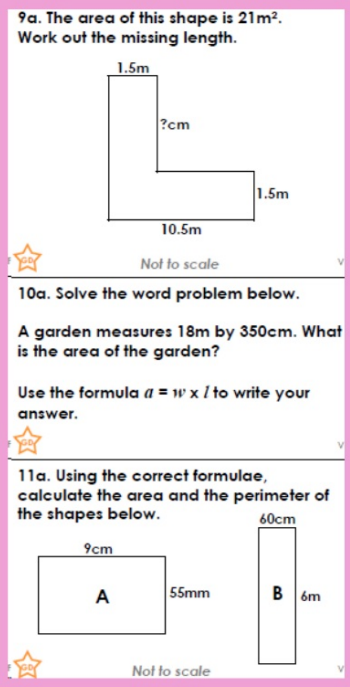
1) Work out the perimeter of the shapes.
Each square represents 1 cm²



2) $2a + 2b = 20$ Find the value of b if $a = 8$

3) $8 \times \square = 72$

Challenge:



Assessment

1) Work out the perimeter of the shapes.
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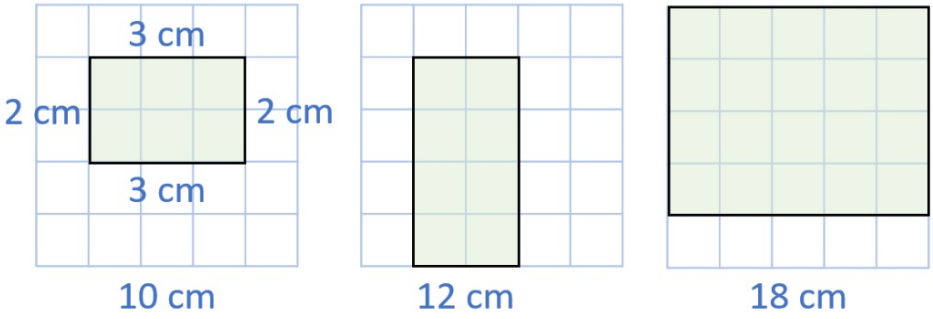
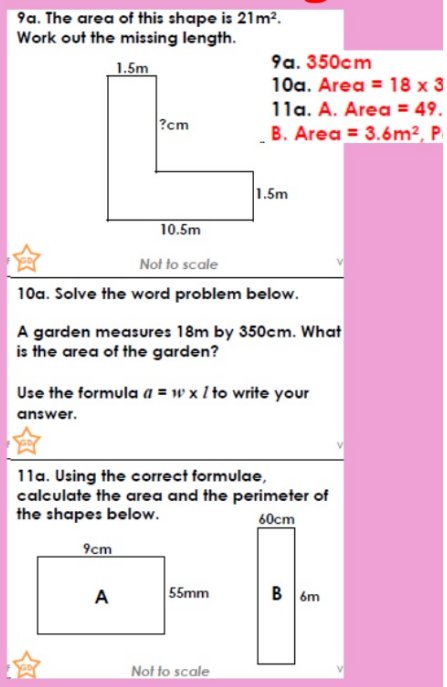


2) $2a + 2b = 20$ Find the value of b if $a = 8$

2×8 $16 + 2b = 20$ $2b = 4$ $b = 2$

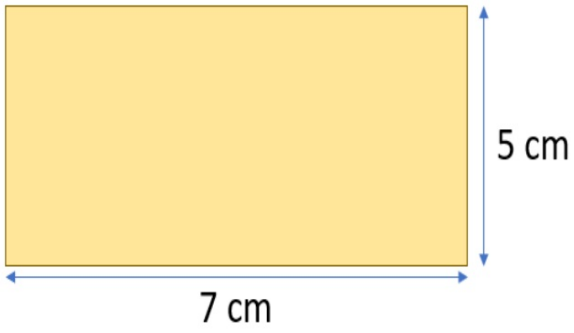
3) $8 \times 9 = 72$

Challenge:



I do

Find the perimeter and area of this rectangle.



The formula to find the perimeter of a rectangle is: _____

The formula to find the area of a rectangle is: _____

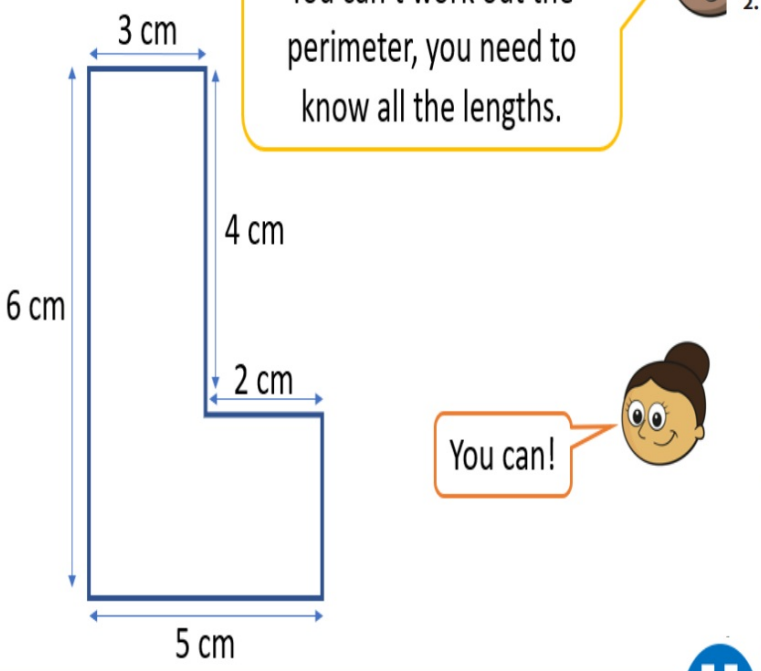
Have a think

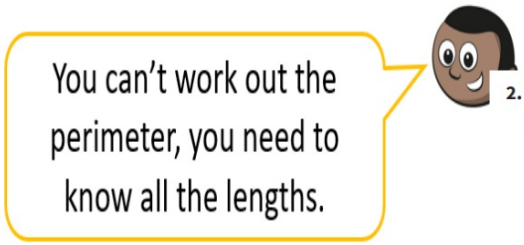
area
perimeter
formula/e

We do

area
perimeter
formula/e

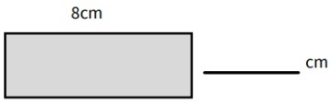
Challenge



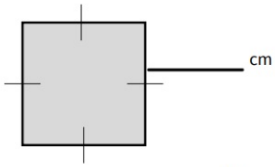


2. Calculate the missing values from the given information.

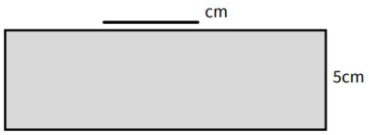
a. Area: 40cm²
Perimeter: _____cm



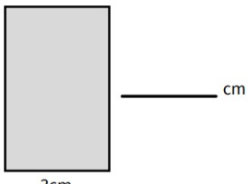
b. Area: 49cm²
Perimeter: _____cm



c. Area: 70cm²
Perimeter: _____cm



d. Area: 21cm²
Perimeter: _____cm

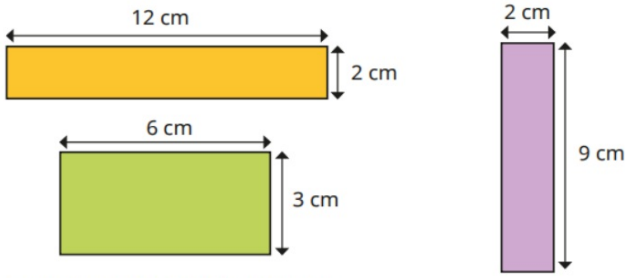


Task 1

You do

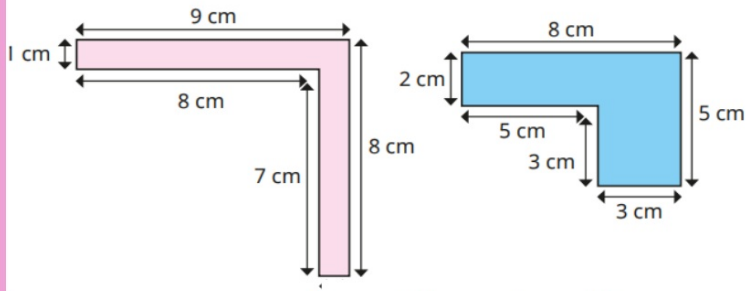
Task 2

- Find the area and perimeter of each rectangle.

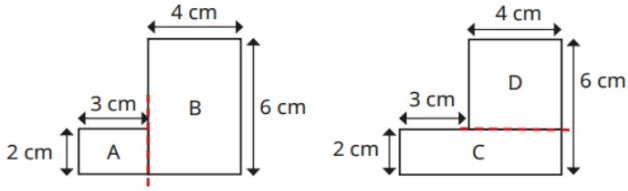


Compare methods with a partner.

- Work out the perimeters of the rectilinear shapes.



- Both of these rectilinear shapes are made from two rectangles.

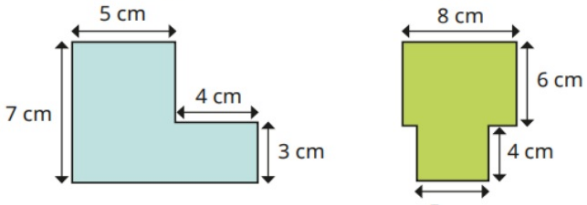


Work out the areas of the rectangles to work out the areas of th rectilinear shapes.

What do you notice?

Why does this happen?

- Find the area and perimeter of each shape.



Challenge

3. The zoo is making a new enclosure. They have 64m of fencing.

a. Draw at least 5 different designs they could use for their enclosure. Find the area of each shape.

b. What is the largest possible area of the enclosure?

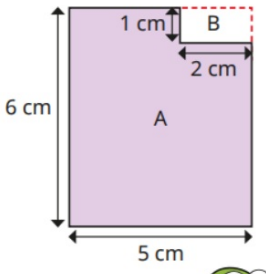
c. What is the smallest possible area of the enclosure?

Reasoning - WE DO

YOU DO

Reasoning and problem solving

Tiny is finding the area of this shape.



Area of A = 6 cm × 5 cm
= 30 cm²

Area of B = 1 cm × 2 cm
= 2 cm²

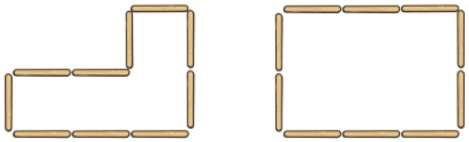
Total area = 32 cm²

The area is 32 cm²

Do you agree with Tiny?

Explain your answer.

Dora has made two rectilinear shapes using lolly sticks.



The length of each lolly stick is 10 cm.

Work out the perimeter of each shape.

What do you notice?

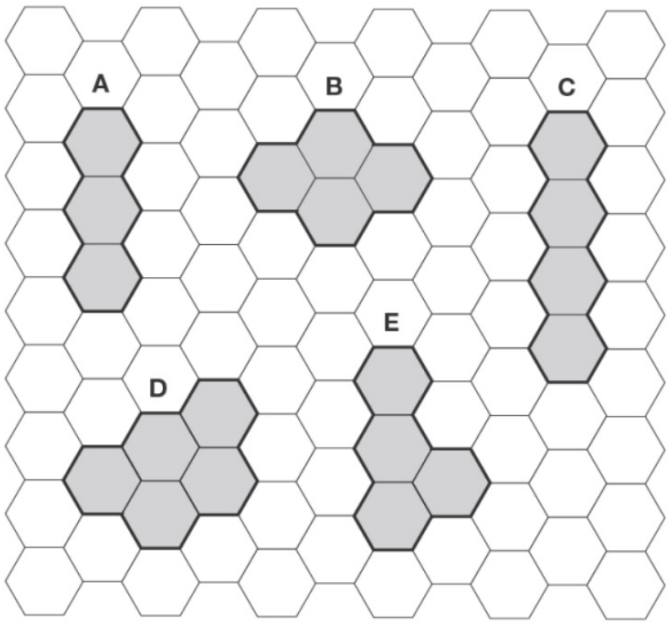
If I cut a rectangle out of the corner of another rectangle, the perimeter of the rectilinear shape will always be the same as the perimeter of the rectangle I started with.

Do you agree with Dora?

Talk about it with a partner.

Plenary - WE DO

Here are five shapes on a regular grid.

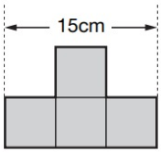


Which shape has the longest perimeter?

[2 marks]

Challenge

This shape is made from 4 shaded squares.



Not actual size

Calculate the perimeter of the shape.

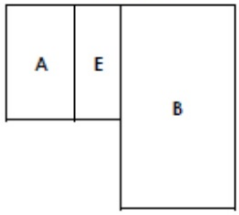
[1 r

Reflection

2. A new dog park is being designed, but the design is limited to the use of the rectangles shown in the table below.

Rectangle	Width	Length
A	650cm	3m
B	11.51m	500cm
C	6.5m	350cm
D	750cm	5.55m
E	6.5m	1.5m

Design 1



not to scale

Investigate which rectangles can be joined together in order to create a compound shape that has a total perimeter greater than 35.5m, but less than 70.55m, and a total area that is greater than 80.5m^2, but less than 109m^2.

You must use at least 3 different rectangles in your design, and when joining your rectangles together, they must not overlap. A potential design is shown above.

How would you go about solving this question?
What steps would you use?

11.02.26

LI: to find areas of triangles

Underline your date and LI

one digit per box

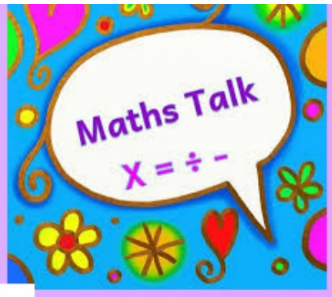
Our Learning Journey

Step 1	Shapes – same area
Step 2	Area and perimeter
Step 3	Area of a triangle – counting squares
Step 4	Area of a right-angled triangle
Step 5	Area of any triangle
Step 6	Area of a parallelogram
Step 7	Volume – counting cubes
Step 8	Volume of a cuboid

Key vocabulary

area, covers, surface, square centimetre (cm^2), square metre (m^2), square millimetre (mm^2), perimeter, factor pairs, formula, formule, trianle, triangles, triangular, equilateral triangle, isosceles triangle, right-angled triangle, scalene triangle

Step 3	Area of a triangle – counting squares
Step 4	Area of a right-angled triangle
Step 5	Area of any triangle



- How is finding the area of a triangle similar to finding the area of a rectangle when counting squares? How is it different?
- How will you count the squares accurately?
- Is more or less than half the square shaded?
- Can you see any parts of squares that combine to make approximately one full square?
- How does the area of the rectangle link to the area of a triangle? Why do you think this happens?

Which set of questions go with which step in our learning journey?

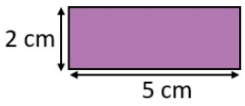
- How can you split the rectangle into two right-angled triangles?
- What do you notice about the two triangles?
- What do you notice about finding the area of a rectangle and finding the area of a right-angled triangle?
- What is the formula to find the area of a right-angled triangle?
- What does "perpendicular" mean?
- How do you know which measurement is the base/ perpendicular height?

- What is the formula for the area of a triangle?
- How do you know which side is the base?
- How do you know what the perpendicular height is?
- How do you know that you are using the correct lengths?
- Is there more than one way to find the area of this triangle?
- Is the base always at the bottom of the triangle?

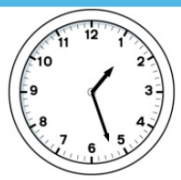
Starter/Recap

Flashback 4

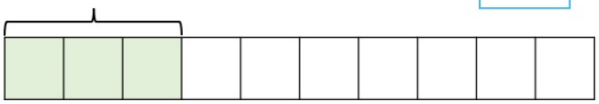
Year 6 | Week 9 | Day 3

1) 

Area = ☐ cm^2



2) 30% = 108 30% of ☐ = 108



3) Write $\frac{5}{7}$ as a division calculation.

4) 4^2 ◯ 2^3

White Rose Maths

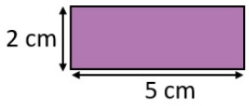
Challenge:

1. One million + 920,000 + 84,000 + five hundred and twelve.
2. I gave £20, seven 50p and a 20p. I got 17p back. Total paid?
3. 489 seeds are planted every day in July. Total seeds planted?
4. $\frac{\square}{\square} = \frac{\square}{\square} = \frac{3}{5}$
5. $\frac{4}{5} \times \frac{2}{3}$
6. What is the value of 7 in the missing number?
   ☐ ÷ 10 = 67.2

Starter/Recap

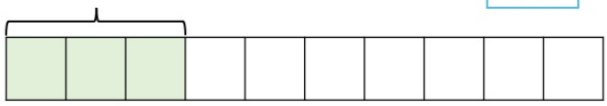
Flashback 4

Year 6 | Week 9 | Day 3

1) 

Area = 10 cm^2

2) 30% = 108 30% of 360 = 108



3) Write $\frac{5}{7}$ as a division calculation. 5 ÷ 7

4) 4^2 > 2^3

White Rose Maths

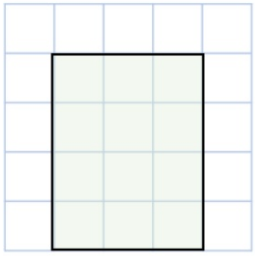
Challenge:

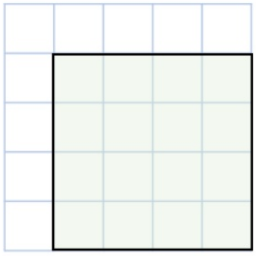
1. One million + 920,000 + 84,000 + five hundred and twelve. 2,004,512
2. I gave £20, seven 50p and a 20p. I got 17p back. Total paid? £23.53
3. 489 seeds are planted every day in July. Total seeds planted? 15,159
4. $\frac{9}{15} = \frac{6}{10}$ * $= \frac{3}{5}$
5. $\frac{4}{5} \times \frac{2}{3} = \frac{8}{15}$
6. What is the value of 7 in the missing number?
   672 ÷ 10 = 67.2 7 tens

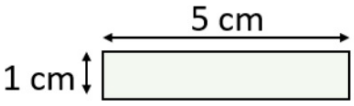
*Various answers, one example given.

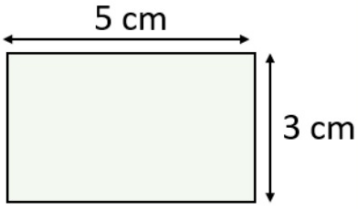
Assessment

1) Work out the area of the shapes.
Each square represents 1 cm²

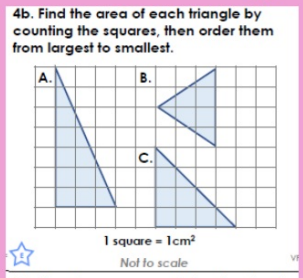


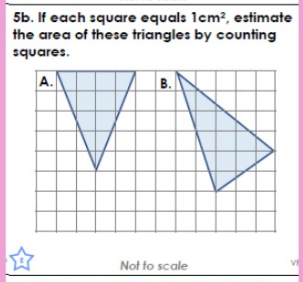


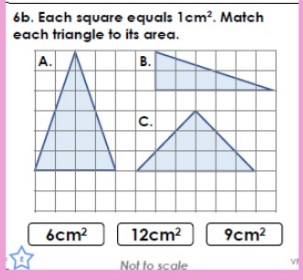




Challenge:

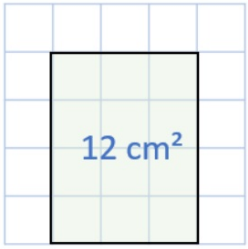


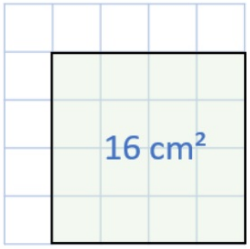


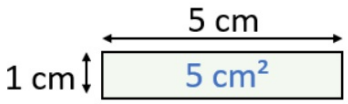


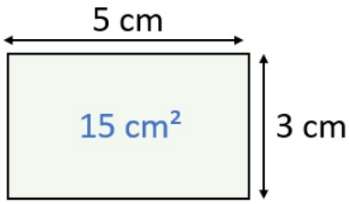
Assessment

1) Work out the area of the shapes.
Each square represents 1 cm²

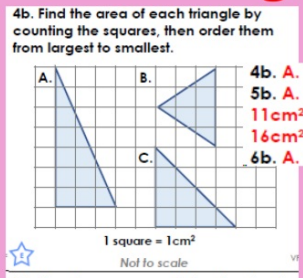


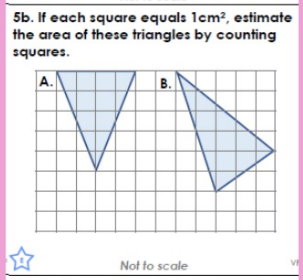


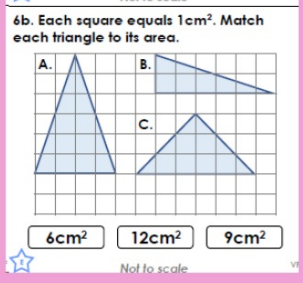




Challenge:



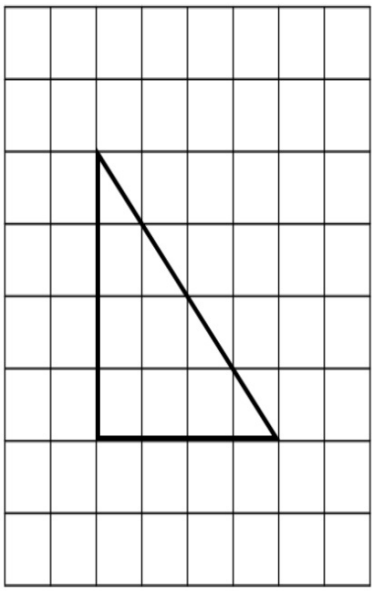




I do

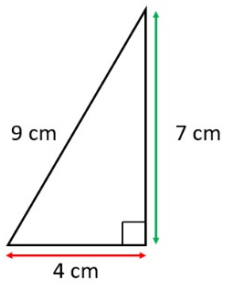
Each square represents 1 cm^2

Have a think



How could we find the area of the triangle?

Key knowledge



14 cm^2

Area of a triangle $= \frac{\text{Base} \times \text{Perpendicular height}}{2}$

Area of a triangle $= \frac{1}{2} \times \text{Base} \times \text{Perpendicular height}$

$= \frac{1}{2} \times 4 \times 7$

triangles

right angle triangles

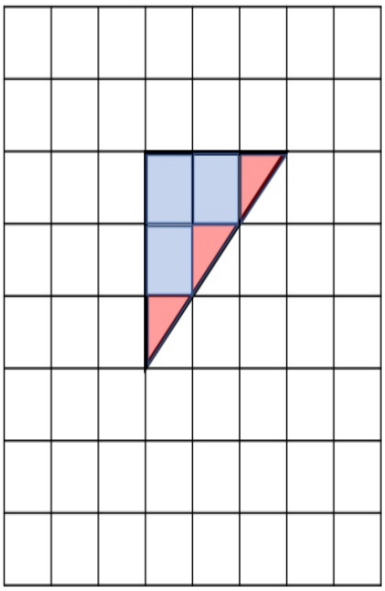
perpendicular

We do

Each square represents 1 cm²

Find the area of the triangle.

Have a think



The triangle has ___ full squares.

The triangle has ___ half squares.

The total area of the triangle is ___ cm²

Challenge

Each square represents 1 cm²

Have a think

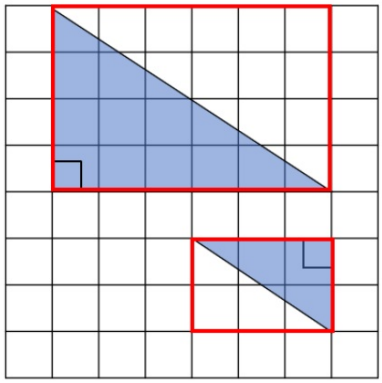
Calculate the area of each right-angled triangle.

6×4

24 cm²

3×2

6 cm²

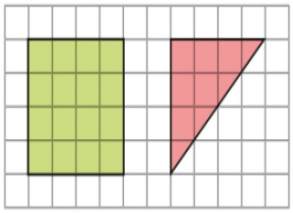


The area of the right-angled triangle is the area of the rectangle.

Task 1:

You do

- Work out the area of each shape by counting squares.



What do you notice about the area of the triangle compared to the area of the square?

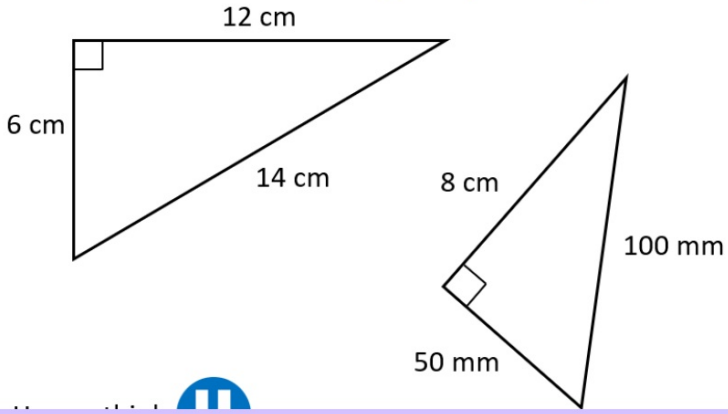
Does this always happen?

Draw a rectangle and a triangle to explore the pattern.

Task 2:

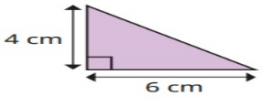
Area of a triangle = $\frac{1}{2}$ × Base × Perpendicular height

Find the area of these right-angled triangles.



Challenge

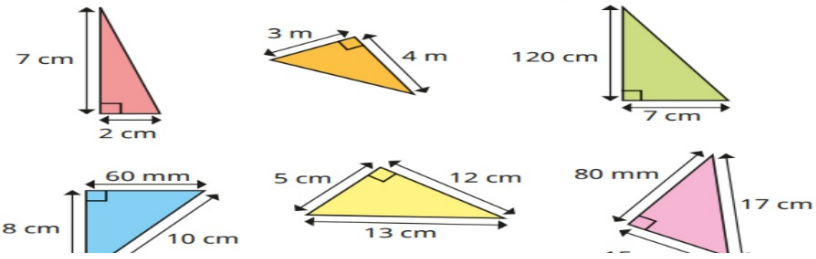
- Scott uses the formula to work out the area of this right-angled triangle.



area = $\frac{1}{2}$ × base × perpendicular height

area = $\frac{1}{2}$ × 6 × 4 = $\frac{1}{2}$ × 24 = 12 cm²

Use the formula to find the areas of the triangles.

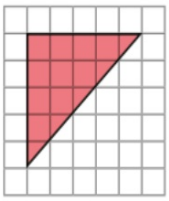


Task 3:

We do **Reasoning**

you do

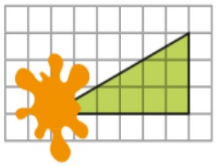
Tiny says that the area of the triangle is 15 cm^2



Tiny is incorrect.

Explain what Tiny has done wrong.

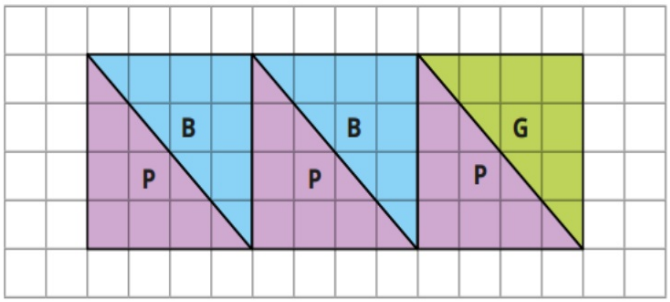
Part of the triangle has been covered.



Estimate the area of the whole triangle.

Would your estimate change if the splat was in a different place?

Huan draws three squares and splits them into six right-angled triangles.



What is the total area of the purple (P) triangles?

What is the total area of the blue (B) triangles?

What is the area of the green (G) triangle?

Compare methods with a partner.

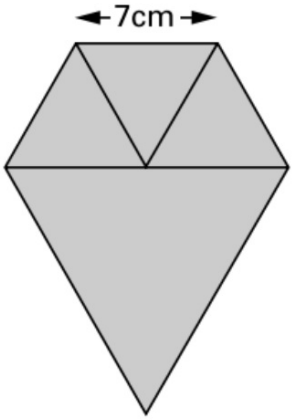
Plenary:

We do

Lauren has **three small equilateral triangles** and **one large equilateral triangle**.

The small triangles have sides of **7 centimetres**.

Lauren makes this shape.



Not actual size

Calculate the **perimeter** of the shape.

Do **not** use a ruler.

cm

Reflection

2. Dylan has written the length and width of some right-angled triangles. In the first table, there is 1cm difference between the length and width; the second table has a difference of 2cm; the third table has a difference of 3cm.

Table 1

Length	Width	Area
3cm	2cm	
4cm	3cm	
5cm	4cm	
6cm	5cm	
7cm	6cm	

Table 2

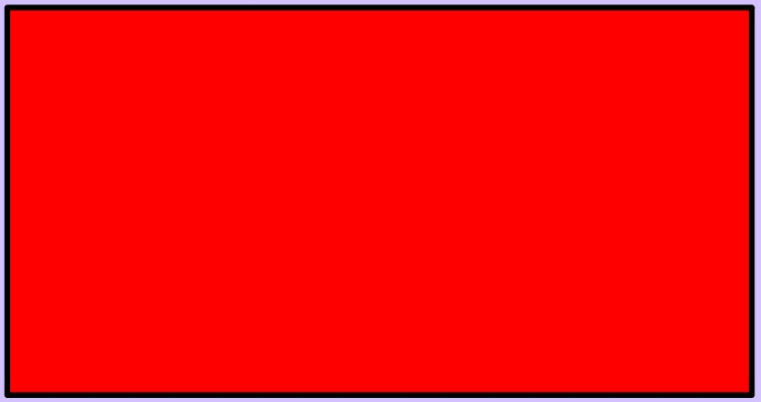
Length	Width	Area
4cm	2cm	
6cm	4cm	
8cm	6cm	
10cm	8cm	
12cm	10cm	

Table 3

Length	Width	Area
5cm	2cm	
8cm	5cm	
11cm	8cm	
14cm	11cm	
17cm	14cm	

Draw these triangles onto squared paper and count the squares to find the areas. Do you notice a pattern in the areas? Can you predict the area of the next three triangles in each sequence?

How would you go about solving this question?
What steps would you use?



11.02.26

LI: to find areas of triangles

one digit per box

Underline your date and LI

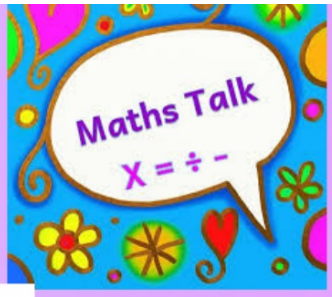
Our Learning Journey

Step 1	Shapes – same area
Step 2	Area and perimeter
Step 3	Area of a triangle – counting squares
Step 4	Area of a right-angled triangle
Step 5	Area of any triangle
Step 6	Area of a parallelogram
Step 7	Volume – counting cubes
Step 8	Volume of a cuboid

Key vocabulary

area, covers, surface, square centimetre (cm^2), square metre (m^2), square millimetre (mm^2), perimeter, factor pairs, formula, formule, trianle, triangles, triangular, equilateral triangle, isosceles triangle, right-angled triangle, scalene triangle

Step 3	Area of a triangle – counting squares
Step 4	Area of a right-angled triangle
Step 5	Area of any triangle



- How is finding the area of a triangle similar to finding the area of a rectangle when counting squares? How is it different?
- How will you count the squares accurately?
- Is more or less than half the square shaded?
- Can you see any parts of squares that combine to make approximately one full square?
- How does the area of the rectangle link to the area of a triangle? Why do you think this happens?

Which set of questions go with which step in our learning journey?

- How can you split the rectangle into two right-angled triangles?
- What do you notice about the two triangles?
- What do you notice about finding the area of a rectangle and finding the area of a right-angled triangle?
- What is the formula to find the area of a right-angled triangle?
- What does "perpendicular" mean?
- How do you know which measurement is the base/ perpendicular height?

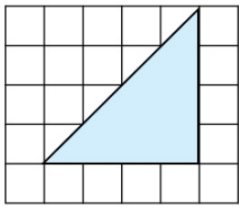
- What is the formula for the area of a triangle?
- How do you know which side is the base?
- How do you know what the perpendicular height is?
- How do you know that you are using the correct lengths?
- Is there more than one way to find the area of this triangle?
- Is the base always at the bottom of the triangle?

Starter/Recap

Flashback 4

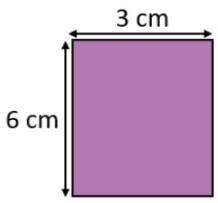
Year 6 | Week 9 | Day 4

1)

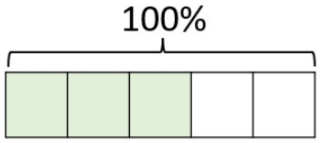


Area = ☐ cm^2

2) Area = ☐ cm^2



3)



☐ % shaded ☐ % not shaded

4) 665 ÷ 4 = ☐

White Rose Maths

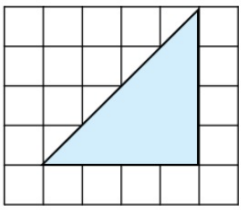
Challenge:

1. Estimate the answer by rounding to nearest 100: 54,385 + 23,339
2. Find any two common multiples of 3 and 5.
3. 3,648 ÷ 16
4. True or false? $\frac{3}{4} > \frac{5}{8}$
5. $\frac{1}{3} \div 2$
6. 6.4 x 3

Starter/Recap

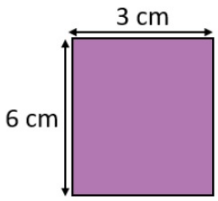
Flashback 4

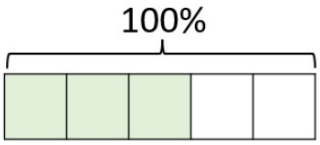
Year 6 | Week 9 | Day 4

1) 

Area = 8 cm²

2) Area = 18 cm²



3) 

60 % shaded 40 % not shaded

4) 665 ÷ 4 = 166 r 1

White Rose Maths

Challenge:

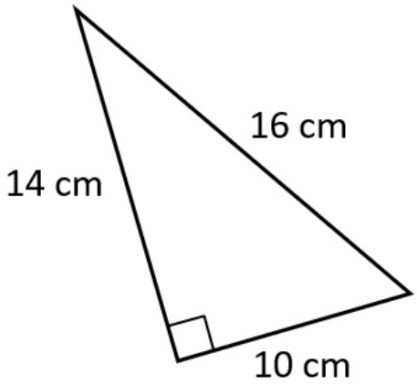
1. Estimate the answer by rounding to nearest 100: 54,385 + 23,339 = 77,700
2. Find any two common multiples of 3 and 5. 15 and 30*
3. 3,648 ÷ 16 = 228
4. True or false? $\frac{3}{4} > \frac{5}{8}$ true
5. $\frac{1}{3} \div 2 = \frac{1}{6}$
6. 6.4 x 3 = 19.2

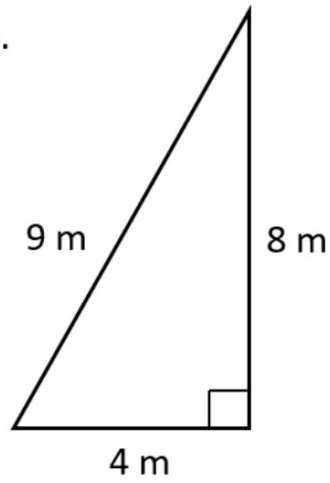
Assessment

1) Complete the formula for calculating the area of a triangle.

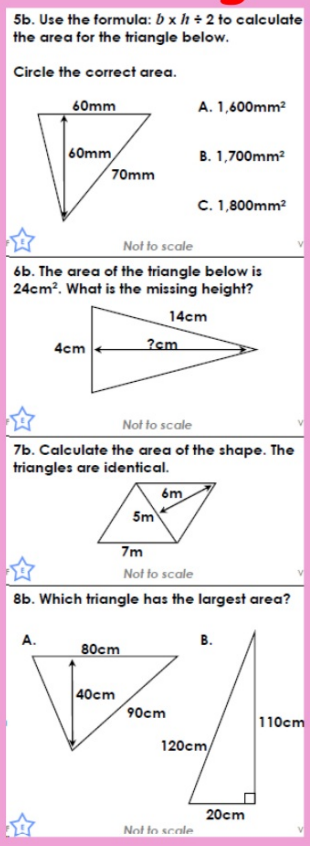
$\frac{1}{2}$ × Base × _____

2) Work out the area of the triangles.





Challenge:

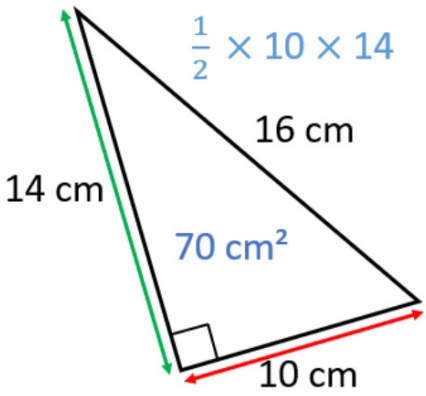


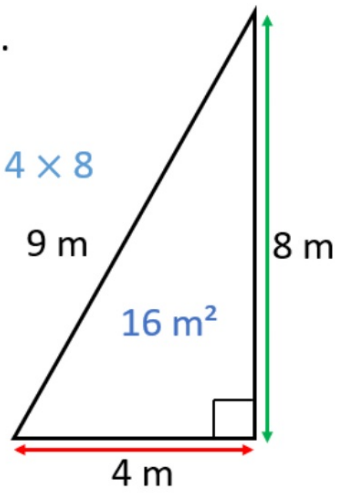
Assessment

1) Complete the formula for calculating the area of a triangle.

$\frac{1}{2}$ × Base × Perpendicular height

2) Work out the area of the triangles.

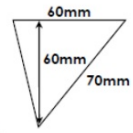




Challenge:

5b. Use the formula: $b \times h \div 2$ to calculate the area for the triangle below.

Circle the correct area.



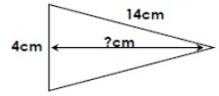
A. 1,600mm²

B. 1,700mm²

C. 1,800mm²

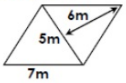
Not to scale

6b. The area of the triangle below is 24cm². What is the missing height?



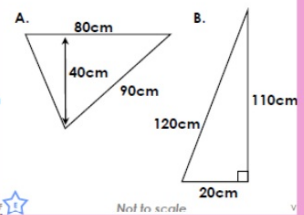
Not to scale

7b. Calculate the area of the shape. The triangles are identical.



Not to scale

8b. Which triangle has the largest area?



Not to scale

5b. C. 1,8

6b. 12cm

7b. 30m²

8b. A has

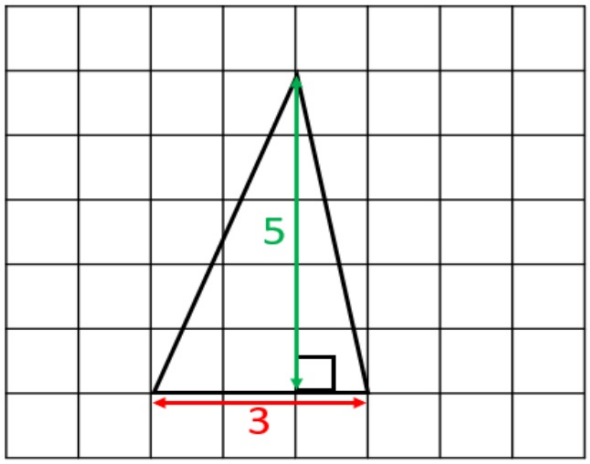
B = 1,100

I do:

triangles
right angle triangles
perpendicular height

Each square represents 1 cm²

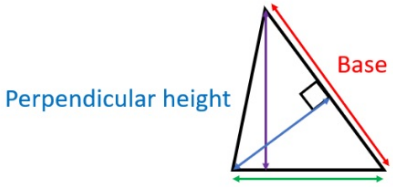
Work out the area of the triangle.



Area of a triangle $= \frac{1}{2} \times$ Base $\times$ Perpendicular height

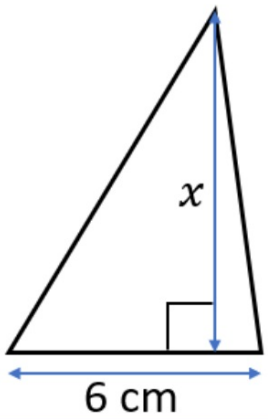
$7.5\ \text{cm}^2 = \frac{1}{2} \times 3 \times 5$

We do: triangles
right angle triangles
perpendicular height

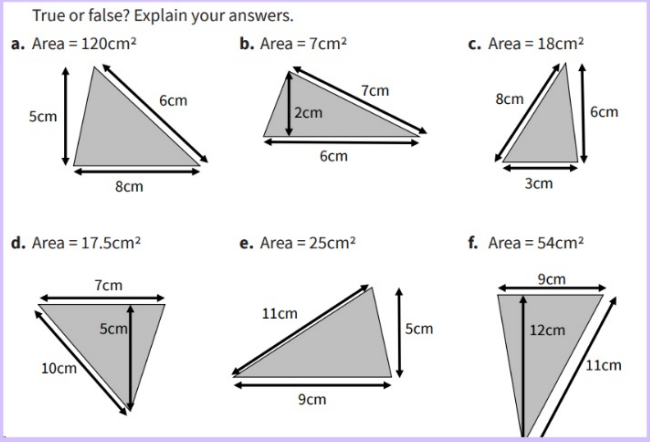


Which arrow is the base?
Which arrow is the perpendicular height?

The area of the triangle is 33 cm²
What is the length of x?



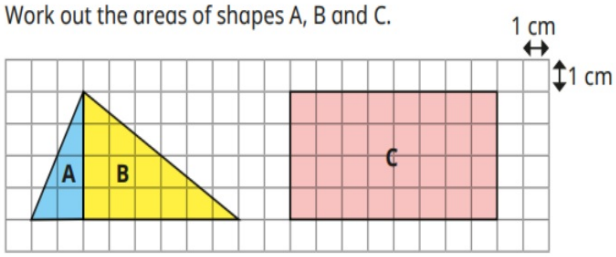
Challenge



Task 1

You do

Work out the areas of shapes A, B and C.

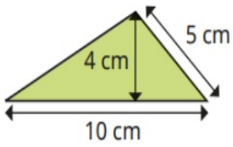


- What is the total area of the scalene triangle formed by A and B?
- Compare this area to the area of rectangle C.

  What do you notice?

  Does this always happen?

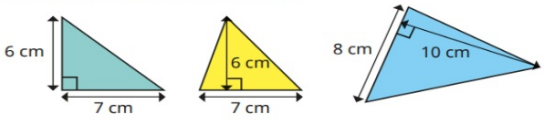
Here is a triangle.



- What is the length of the base of the triangle?
- What is the perpendicular height of the triangle?
- Use the formula area = $\frac{1}{2}$ × base × perpendicular height to work out the area of the triangle.

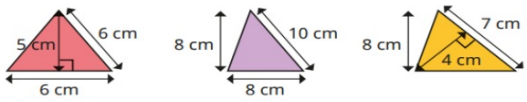
Task 2:

- Work out the areas of the triangles.



What is the same and what is different about the first two triangles?

- Find the area of each triangle.

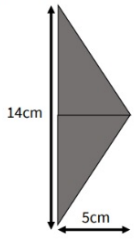


Challenge

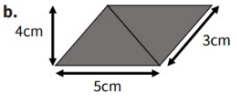
. What is the area of each shape?

Explain your answers.

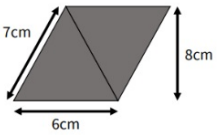
a.



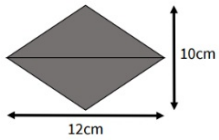
b.



c.



d.



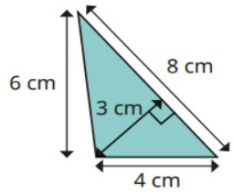
e.

Task 3: We do

You do

Reasoning and problem solving

Tiny is finding the area of this triangle.



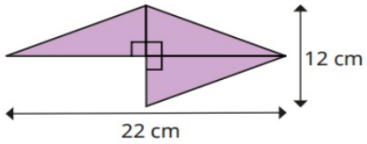
I need to multiply all the lengths, then divide by 2

Explain why Tiny is incorrect.

Work out the area of the triangle.

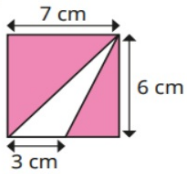
Can you find more than one way to do it?

This shape is made up of three identical triangles.



What is the area of the shape?

Here is a flag.



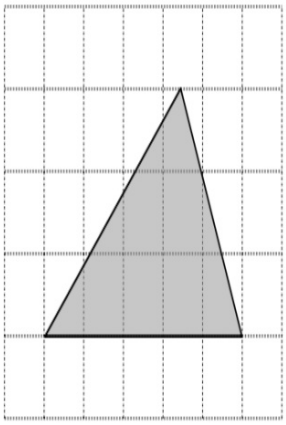
Find the area of the flag that is white.

Is there more than one way to find the answer?

Challenge:

Plenary:

Here is a triangle on a 1 cm square grid.

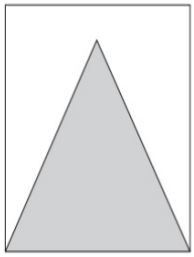


What is the area of the triangle?

cm²

[1 mar

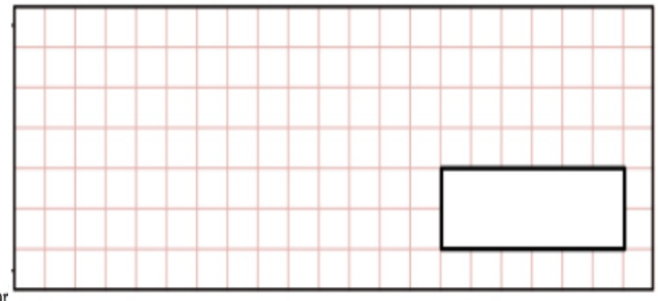
Here is an equilateral triangle inside a square.



Not actual size

The perimeter of the triangle is 48 centimetres.

Calculate the perimeter of the **square**?



[2 marks]

Reflection

1. Clunky the clown is trying to work out the amount of fabric needed in order to replace the top of a tent that was destroyed by Storm Menace.

He says,

The top of the tent was a composite shape made up of 6 triangles with the same area; each triangle had a base between 2m and 8m, and a height between 5m and 12m. I've bought 180m^2 of fabric but am not sure if I have enough...

not to scale

Explore whether Clunky the clown has enough fabric. Draw a diagram to help explain your reasoning.

How would you go about solving this question?
What steps would you use?

12.02.26

LI: to find areas of

one digit per box

Underline your date and LI

Key vocabulary

area, covers, surface, square centimetre (cm^2), square metre (m^2), square millimetre (mm^2), perimeter, factor pairs, formula, formule, trianle, triangles, triangular, equilateral triangle, isosceles triangle, right-angled triangle, scalene triangle, parallelogram, perpendicular, base, perpendicular height.

Our Learning Journey

Step 1	Shapes – same area
Step 2	Area and perimeter
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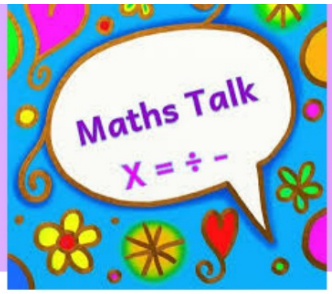
Step 6	Area of a parallelogram
Step 7	Volume – counting cubes
Step 8	Volume of a cuboid



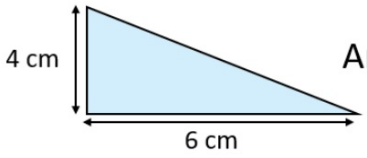
- How could you change the parallelogram into a rectangle? How will this help you to find the area?
- How can you count the squares accurately to find the area?
- How do you know you have found the base/ perpendicular height?
- What is the formula for finding the area of a parallelogram?
- When you have different units, what is your first step?

Starter/Recap

Flashback 4

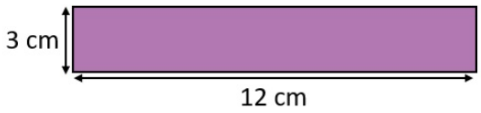
Year 6 | Week 9 | Day 5

1)



Area = ☐ cm^2

2)



Area = ☐ cm^2

Perimeter = ☐ cm

3) $\frac{48}{100} = \square$ %

4) $\frac{3}{4}$ ◯ $\frac{4}{6}$

White Rose Maths

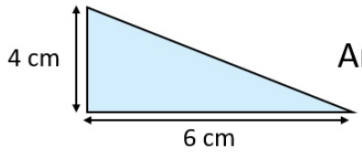
Challenge:

1. Estimate the answer by rounding to nearest 100
   32,473 + 2,518
2. List all common multipl
   of 4 and 6 that are < 50
3. Solve using long divisio
   2,823 ÷ 31
4. Fix: $\frac{7}{10} > \frac{4}{5} > \frac{3}{4}$
5. $\frac{4}{5} \div 3$
6. 5.43 x 5

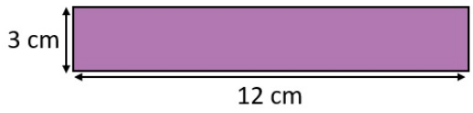
Starter/Recap

Flashback 4

Year 6 | Week 9 | Day 5

1) 

Area = 12 cm^2

2) 

Area = 36 cm^2

Perimeter = 30 cm

3) $\frac{48}{100} = 48\ \%$

4) $\frac{3}{4} > \frac{4}{6}$

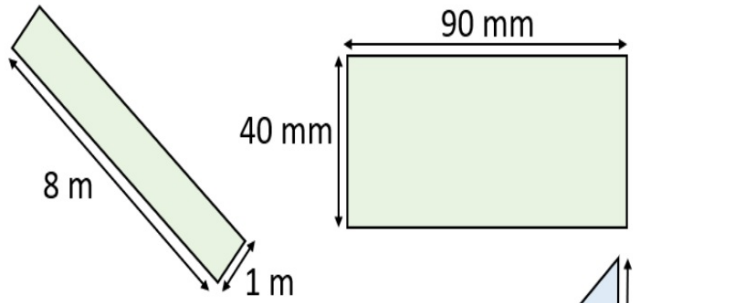
White Rose Maths

Challenge:

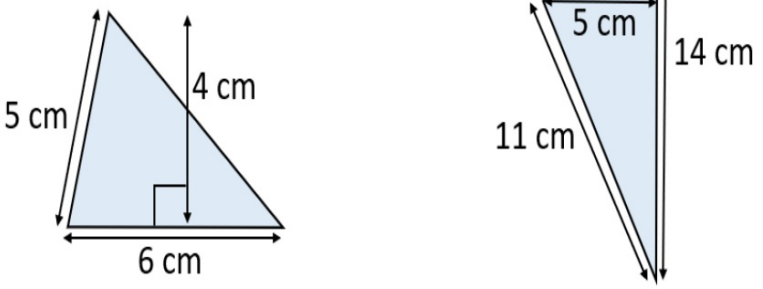
1. Estimate the answer by rounding to nearest 100:
   32,473 + 2,518 = 35,000
2. List all common multiple of 4 and 6 that are < 50.
   12, 24, 36, 48
3. Solve using long divisior
   2,823 ÷ 31 = 91 r2
4. Fix: $\frac{7}{10} < \frac{4}{5} > \frac{3}{4}$
5. $\frac{4}{5} \div 3 = \frac{4}{15}$
6. 5.43 x 5 = 27.15

Assessment

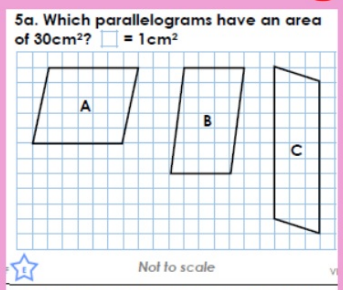
1) Calculate the area of the rectangles.

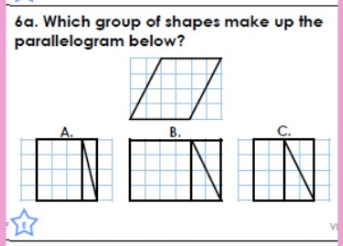


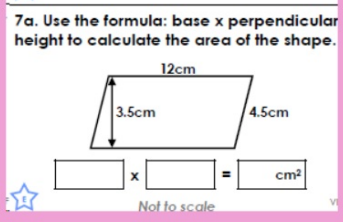
2) Calculate the area of the triangles.



Challenge:

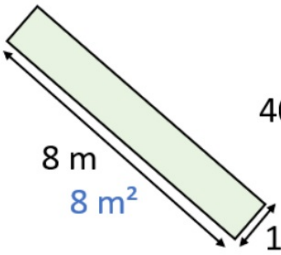




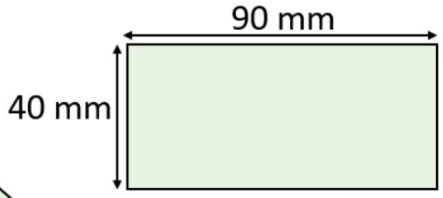


Assessment

1) Calculate the area of the rectangles.

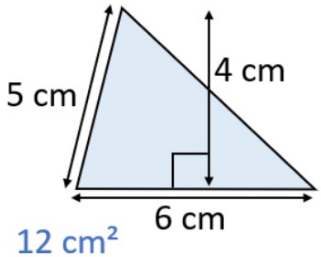


8 m²

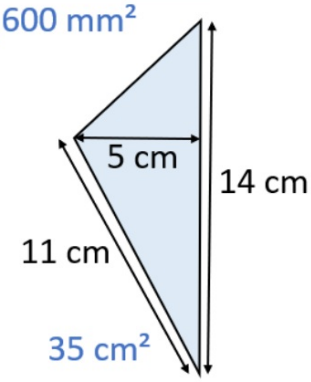


3,600 mm²

2) Calculate the area of the triangles.

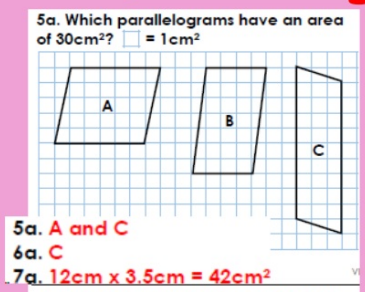


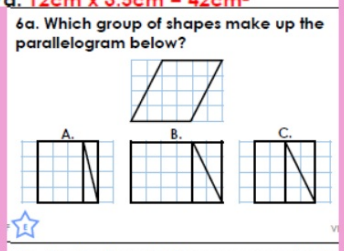
12 cm²

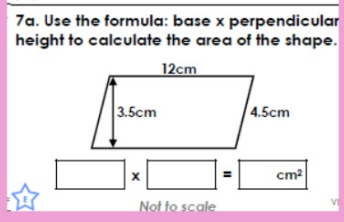


35 cm²

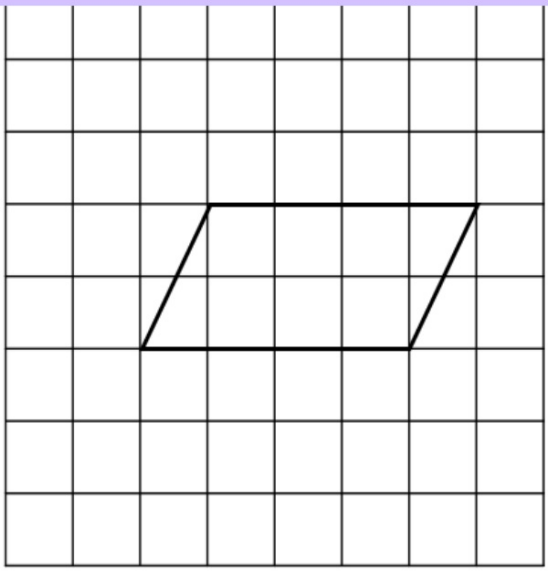
Challenge:







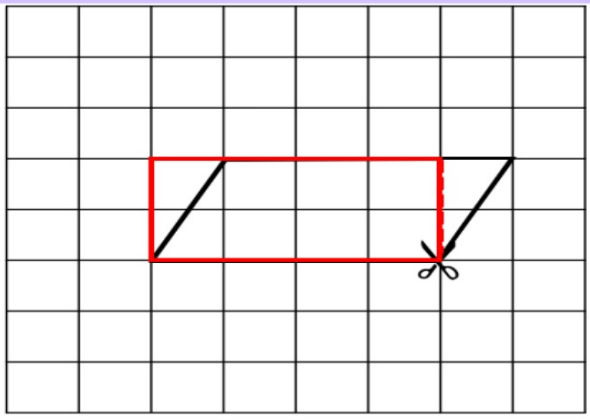
I do



How could we find the area of the parallelogram?

Key knowledge

- How could you change the parallelogram into a recta
  How will this help you to find the area?
- How can you count the squares accurately to find the
- How do you know you have found the base/ perpendicular height?
- What is the formula for finding the area of a parallelo
- When you have different units, what is your first step



Cut and move

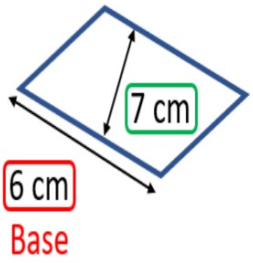
$4 \times 2 = 8$ squares

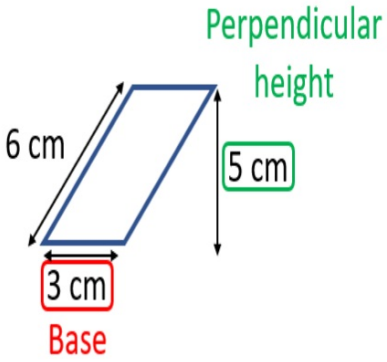
$8\ cm^2$

We do

Area of a parallelogram = Base × Perpendicular height

Use the formula to find the area of the parallelograms





$6 \times 7 =$

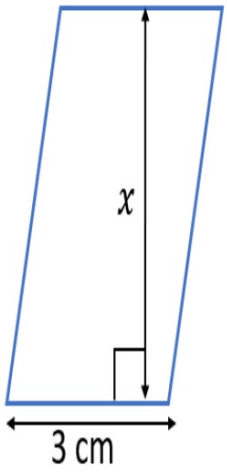
$3 \times 5 =$

Have a think

Challenge

The area of the parallelogram is 24 cm²

What is the length of x?



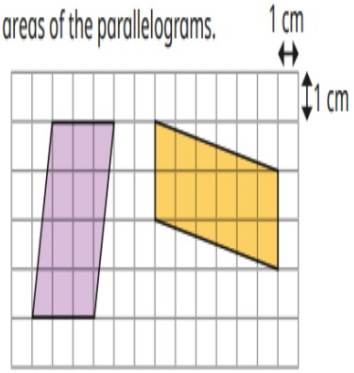
$3 \times x = 24$

$x = 8$ cm

Task 1:

You do

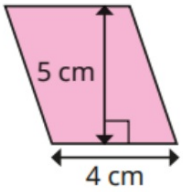
- Work out the areas of the parallelograms.



Explain your method to a partner.

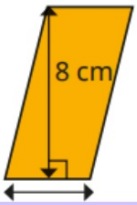
Task 2:

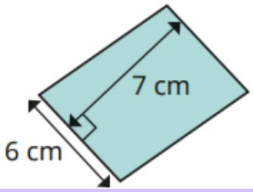
- Annie has worked out the area of this parallelogram.

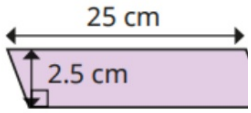


area = base × perpendicular height
= 4 cm × 5 cm
= 20 cm²

Use Annie's method to find the areas of the parallelograms.



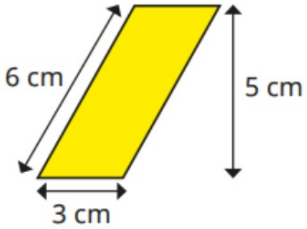


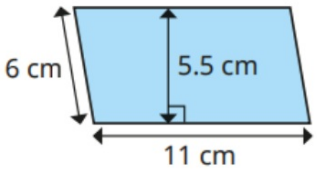


Challenge

Label the base b and perpendicular height h on each parallelogram.

Then find the area of each shape.





Task 3:

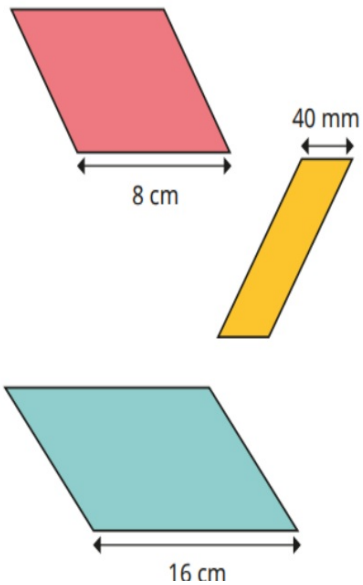
We do **Reasoning**

you do

Reasoning and problem solving

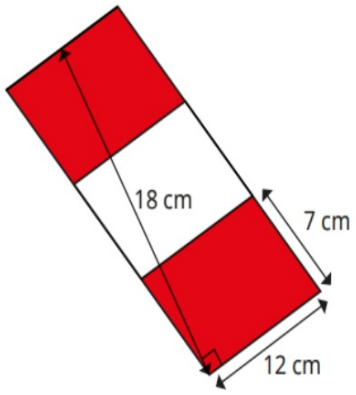
These parallelograms each have an area of 40 cm^2

Find the perpendicular height of each shape.



All the parallelograms have the same area.

Find the total area of the shaded parallelograms.



Which measurement is not needed?

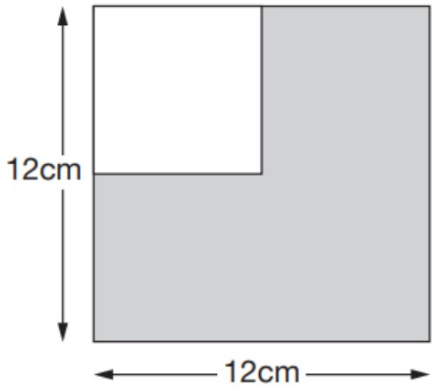
Find more than one method to work out the answer.

Plenary:

We do

A white square is painted in one corner of a grey square.

Each side of the white square is half the length of a side of the grey square.



Not actual size

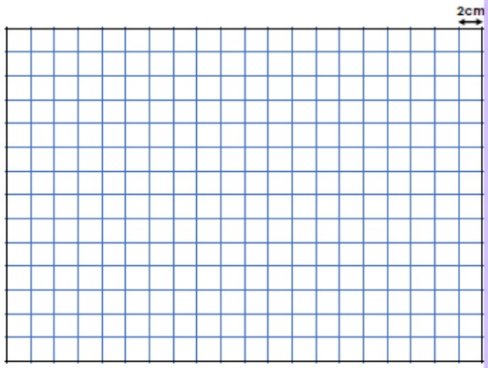
What is the area of the grey section?

Reflection

1. Percy the pirate loves parallelograms. He loves parallelograms so much that he wants to create a parallelogram flag for his new pirate ship. Percy would like your help to create a new design for his flag.

Flag Design Rules:

- Use at least 6 parallelograms with 3 different sizes.
- The area of one of the parallelograms must be between 120cm² and 150cm².
- It must have a shape made from at least 2 parallelograms.
- Total area: 400 < 600cm²



How would you go about solving this question?

What steps would you use?