



HOME LEARNING

YEAR 6

14/05/2020

Morning Message

Good morning year 6,

Today's facts of the day:

King Pepi ii, a pharaoh from ancient Egypt, used to force his slaves to cover themselves in honey in order to lure bees and insects away from himself!

It would've taken 2.5 million seagulls to lift James' giant peach into the air – not the 501 Roald Dahl suggested.

Answer to yesterday's riddle: *a ton*. Today's riddle: *What is black when you buy it, red when you use it, and grey when you throw it away?*

Have a great day!

Mr Larke and Ms. Yerlisu

Today's Picture



Writing

As soon as the orange hue of the sun peeked up above the horizon, providing enough light for them to see the treacherous road in front of them, they set off. Time was of the essence.

The smoke that still rose from the scorched earth gave an ethereal glow as it combined with the rays of morning sunlight. In some places, the fires still raged. They were fortunate to have escaped...

Your job is to write a diary entry as a character from this scene at the end of the day. What were they fortunate to have escaped from? Where are they going now? Why is time of the essence? Who are the people they are with?

Tips for success:

- include all the events of the day
- include your character's thoughts and feelings
- write in mostly informal register
- engage the reader

Reading

Day 4: Pupil-led questions

Write questions about the text:

3 on-the-line questions

2 between-the-lines questions

1 beyond-the-text

Maths

Area of Compound shapes

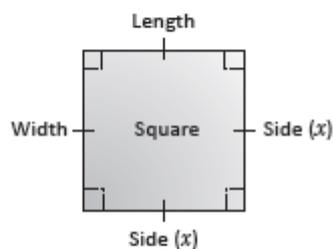
In this lesson, you will find the area of triangles, rectangles and square by using the formula. You will understand that the area of a triangle is half the area of a rectangle with the same height and width. You will able to use your knowledge of the properties of shapes.

To calculate the area of a composite shape you must divide the shape into rectangles, triangles or other shapes you can find the area of and then add the areas back together. You may have to calculate missing lengths before finding the area of some of the shapes.

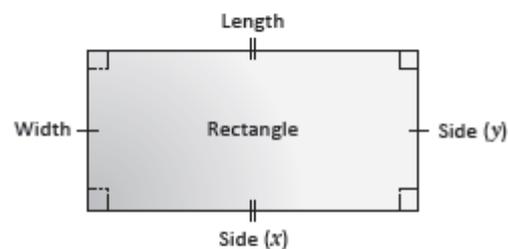
Area: Squares and rectangles

A simple multiplication will let you calculate the area of squares and rectangles.

For squares and rectangles, just multiply the length of the perpendicular sides (Length and width).

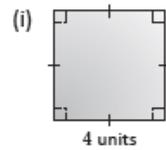


$$\begin{aligned}\text{Area} &= \text{length} \times \text{width} \\ &= \text{Side } (x) \text{ units} \times \text{Side } (x) \text{ units} \\ &= x \times x \text{ units}^2 \\ &= x^2 \text{ units}^2\end{aligned}$$



$$\begin{aligned}\text{Area} &= \text{length} \times \text{width} \\ &= \text{Side } (x) \text{ units} \times \text{Side } (y) \text{ units} \\ &= x \times y \text{ units}^2 \\ &= xy \text{ units}^2\end{aligned}$$

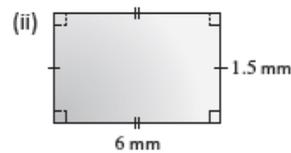
Calculate the area of these shaded shapes



$$\begin{aligned} \text{Area} &= \text{length} \times \text{width} \\ &= 4 \text{ units} \times 4 \text{ units} \\ &= 4^2 \text{ units}^2 \\ &= 16 \text{ units}^2 \end{aligned}$$

So why units squared for area?

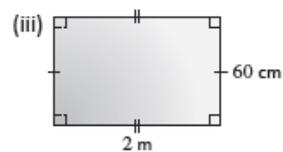
$$\begin{aligned} 4 \text{ units} \times 4 \text{ units} &= 4 \times 4 \text{ units} \times \text{units} \\ &= 4^2 \times \text{units}^2 \\ &= 16 \text{ units}^2 \end{aligned}$$



$$\begin{aligned} \text{Area} &= \text{length} \times \text{width} \\ &= 6 \text{ mm} \times 1.5 \text{ mm} \\ &= 9 \text{ mm}^2 \end{aligned}$$

Units of area match units of side length

All measurements (or **dimensions**) must be written in the same units before calculating the area.



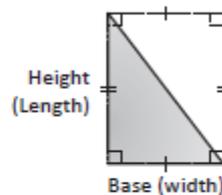
$$\begin{aligned} \text{Area} &= \text{length} \times \text{width} \\ &= 2 \text{ m} \times 60 \text{ cm} \\ &= 200 \text{ cm} \times 60 \text{ cm} \\ &= 12\,000 \text{ cm}^2 \end{aligned}$$

Write both lengths using the same unit

Units of area match units of side length

Area: Triangles

Look at this triangle drawn inside a rectangle.



The triangle is exactly half the size of the rectangle

\therefore Area of the triangle = half the area of the rectangle units^2

$$= \frac{1}{2} \text{ of width (base } (b) \text{ for a triangle)} \times \text{Length (height } (h) \text{ for a triangle)} \text{ units}^2$$

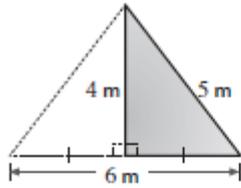
$$= \frac{1}{2} \times b \times h \text{ units}^2$$

This rule works to find the area for all triangles!

Here are some examples involving numerical dimensions:

Calculate the area of the shaded triangles below

(i)

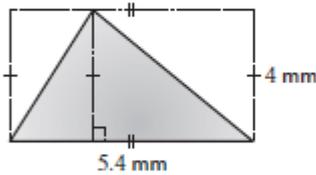


$$\begin{aligned} \text{Area} &= \frac{1}{2} \times \text{base} \times \text{height} \\ &= \frac{1}{2} \times 3 \text{ m} \times 4 \text{ m} \\ &= 6 \text{ m}^2 \end{aligned}$$

Height = use the perpendicular height

The rule also works for this next triangle which is just the halves of two rectangles combined.

(ii)



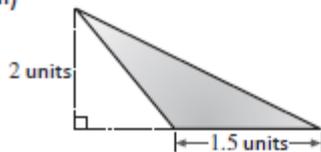
$$\begin{aligned} \text{Area} &= \frac{1}{2} \times \text{base} \times \text{height} \\ &= \frac{1}{2} \times 5.4 \text{ mm} \times 4 \text{ mm} \\ &= 10.8 \text{ mm}^2 \end{aligned}$$



Here, we say the height is the perpendicular distance of the third vertex from the base.

For unusual triangles like this shaded one, we still multiply the base and the perpendicular height and halve it.

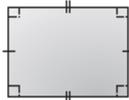
(iii)



$$\begin{aligned} \text{Area} &= \frac{1}{2} \times \text{base} \times \text{height} \\ &= \frac{1}{2} \times 1.5 \text{ units} \times 2 \text{ units} \\ &= 1.5 \text{ units}^2 \end{aligned}$$

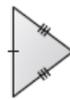
Area of composite shapes

When common shapes are put together, the new shape made is called a composite shape.



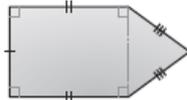
Common shape
(Rectangle)

+



Common shape
(Isosceles triangle)

=



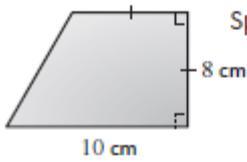
Composite shape
(Rectangle + Isosceles triangle)



Composite just means it is made by putting together separate parts

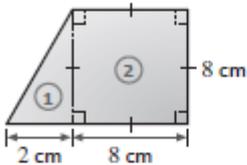
Calculate the area of these composite shapes

(i) Split into a triangle ① and a square ②.



$$\text{Area ①} = \frac{1}{2} \times 2 \text{ cm} \times 8 \text{ cm} = 8 \text{ cm}^2$$

$$\text{Area ②} = 8 \text{ cm} \times 8 \text{ cm} = 64 \text{ cm}^2$$



$$\therefore \text{Total area} = \text{Area ①} + \text{Area ②}$$

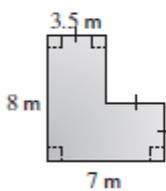
$$= 8 \text{ cm}^2 + 64 \text{ cm}^2$$

Add area ① and ② for the composite area

$$= 72 \text{ cm}^2$$

This next one shows how you can use addition or subtraction to calculate the area of composite shapes.

(ii) • **method 1:** Split into two rectangles ① and ②

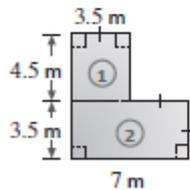


$$\text{Area ①} = 4.5 \text{ m} \times 3.5 \text{ m} = 15.75 \text{ m}^2$$

$$\text{Area ②} = 3.5 \text{ m} \times 7 \text{ m} = 24.5 \text{ m}^2$$

$$\therefore \text{Total area} = 15.75 \text{ m}^2 + 24.5 \text{ m}^2 \quad \text{Add area ① and area ② together}$$

$$= 40.25 \text{ m}^2$$



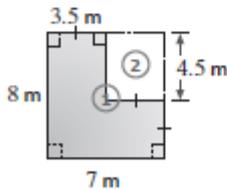
• **method 2:** Large rectangle ① minus the small 'cut out' rectangle ②

$$\text{Area ①} = 8 \text{ m} \times 7 \text{ m} = 56 \text{ m}^2$$

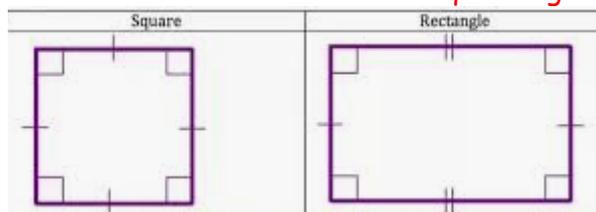
$$\text{Area ②} = 3.5 \text{ m} \times 4.5 \text{ m} = 15.75 \text{ m}^2$$

$$\therefore \text{Total area} = 56 \text{ m}^2 - 15.75 \text{ m}^2 \quad \text{Subtract area ② from area ①}$$

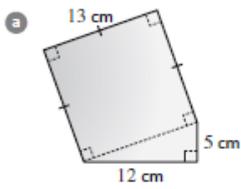
$$= 40.25 \text{ m}^2$$



Remember same lines indicate equal length

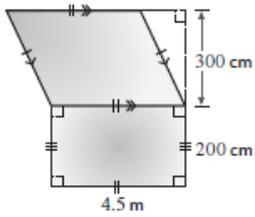


2 Calculate the area of these composite shapes, showing all working:

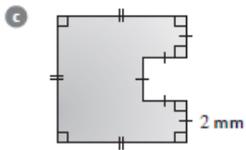


Area = cm²

b psst: change all the units to metres first.



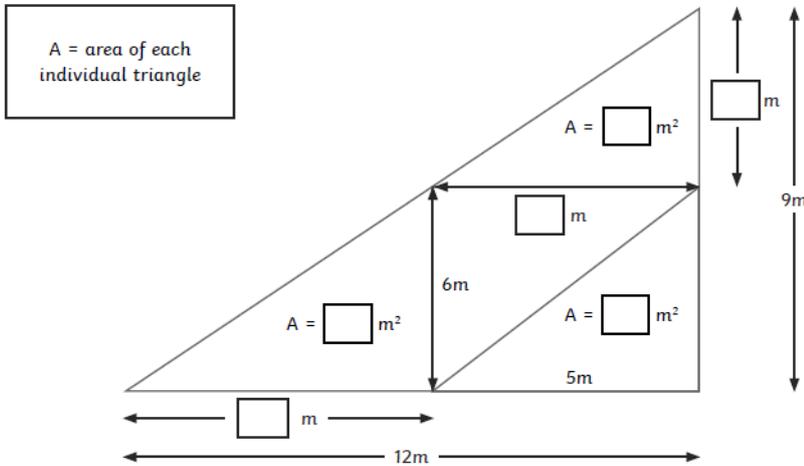
Area = m²



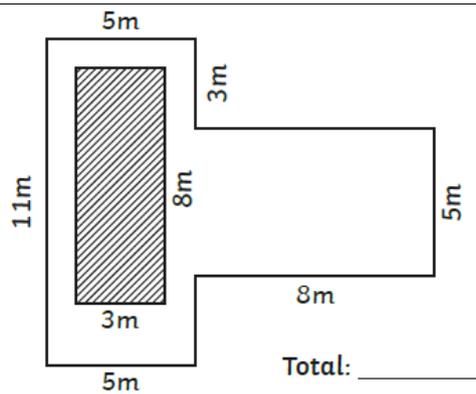
Area = mm²

Extension

This shape is made from different triangles. Find each of the missing measurements.



Calculate area of the white space? If a 1 m² tile cost £2.25 calculate the cost of tiles to cover the white area?



Check Mathematics

We have finished learning and revising all the the year 5 and year 6 spelling patterns and words. Your job now is to take some responsibility for your own learning and evaluate which words and which types of spelling patterns you need to continue to revise before year 7. From looking at last week's test, and the spelling section of the KS2 National Curriculum (ask an adult for help), you should have an idea of which patterns you need to revise most. We will be providing 15 additional tricky words each week for you to learn but these are not compulsory. It is more important that you revise all the spelling patterns from the KS2 National Currciculum first.

1. biased
2. hypothesis
3. medieval
4. jewellery
5. permanent
6. possession
7. vegetable
8. renewable
9. alliteration
10. analysis
11. ingredients
12. reference
13. ceremony
14. specimen
15. personification

Foundation Topic Work (for the week)

This week we will researching information about the Islamic holy month of Ramadan. Use the internet, any books you have on the subject and talk to your family. The task has been set on Purple Mash – use the template to present what you have learnt. Hand in to your teacher by Friday.

Diary

Write a diary of what work and activities you did today. Remember to include your thoughts, feelings and opinions.