

Year 4 maths – Summer 2 Week 3 beginning: 15.06.20

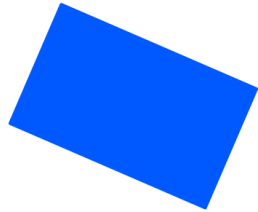
Theme	Mass, Volume, and Length (Lesson 11 of 11) Measuring perimeter in different units	Area of Figures (Lesson 1 and 2 of 5) Measuring Area	Areas of Figures (Lesson 3 of 5) Measuring Area	Area of Figures (Lesson 4 of 5) Measuring Area	Area of Figures (Lesson 5 of 5) Measuring Area
Factual fluency (to aid fluency)	Find the perimeter of the rectangles.	Find the perimeter of the rectilinear shapes.	Find the area of figures in square units.	Create figures with a given area in square units.	Select figures with the same area.
Problem/activity of the day Remember, just like in class, you can still show the depth of your knowledge LINK	<p>(Lesson 1 resources below) MAKING LINKS: Last week, we learnt how to convert units of length. Today we are going to continue building on our knowledge of perimeter and converting length.</p> <p>THINK: (support below) Can you help me with this problem? My friends measured the perimeter of a rectangle. Lulu measured all 4 sides and said the perimeter is 16. Sam only measured 2 sides and said the perimeter is 160. Explain how my friends got their answers. Our problem is on page 122 of the textbook. Look at it now.</p> <p>SEE: (model below) Different ways to solve the problems are on page 122 and page 123 of your textbook. See video here.</p> <p>DO: PART 1 - TEXTBOOK Q1 a, b and c – page 123 Q2 a, b and c – page 124 Check your answers before moving onto: PART 2 – WORKBOOK Q1 a and b – page 85 Q1 c and d – page 86 Q2 a, b and c – page 87</p>	<p>(Lesson 2 resources below) MAKING LINKS: Yesterday we learnt how to measure perimeter in cm and mm. Today, we are learning to measure the surface area of figures (shapes).</p> <p>THINK: (support below) Can you help me with this problem? Use four square pieces of paper or post it notes to make as many different figures as you can. You do not need to use all four squares. How many figures can you make? Our problem is on page 135 of the textbook. Look at it now.</p> <p>SEE: (model below) Different ways to solve the problems are on page 135 and page 136 of your textbook. See video here</p> <p>DO: PART 1 – TEXTBOOK Use square tiles/paper to form 5 of the figures on page 137. Order the figures by smallest area to largest area.</p> <p>PART 2 – WORKBOOK Q1 – page 105 Q2 a, b and c – page 106</p>	<p>(Lesson 3 resources below) MAKING LINKS: Yesterday we learnt how to measure the area of figures using square tiles/paper. Today, we are learning to identify whether figures can have the same or different areas and perimeters.</p> <p>THINK: (support below) Can you help me with this problem? One of my friends thinks that figures with the same area can have different perimeters. My other friend says figures with the same perimeter can have different areas. Who is correct? Our problem is on page 138 of the textbook. Look at it now.</p> <p>SEE: (model below) Different ways to solve the problems are on page 138 and page 139 of your textbook. See video here</p> <p>DO: PART 1 – TEXTBOOK Q3 – page 142 Find the area of each figure. Check your answers before moving onto: PART 2 – WORKBOOK Q1 – page 107 Q2 – page 108 Q3 – page 108</p>	<p>(Lesson 4 resources below) MAKING LINKS: Yesterday we learnt that figures with the same perimeter can have different areas and figures with the same area can have different perimeters. Today, we are learning how to measure the surface area of figures that use squares and triangles.</p> <p>THINK: (support below) Can you help me with this problem? I have 3 square tiles and 2 triangle tiles. I want to make figures using all 5 tiles. What figures could I make? Our problem is on page 143 of the textbook. Look at it now.</p> <p>SEE: (model below) Different ways to solve the problems are on page 143 and page 144 of your textbook. See video here.</p> <p>DO: PART 1 – TEXTBOOK Find the area of each figure on page 145. Check your answers before moving onto: PART 2 – WORKBOOK Q1 a and b – page 110 (use the figures on page 109 to complete Q1a). Q2 a and b – page 110.</p>	<p>Lesson 5 resources below MAKING LINKS: Yesterday we learnt how to measure area in different ways. Today, we are going to use our knowledge of multiplication to help us calculate the area of different rectangles.</p> <p>THINK: (support below) Can you help me with this problem? My friend drew some rectangles. How can he tell the area of each rectangle? Our problem is on page 146 of the textbook. Look at it now.</p> <p>SEE: (model below) Different ways to solve the problems are on page 147 and page 148 of your textbook. See video here.</p> <p>DO: PART 1 – TEXTBOOK Use two different methods to find the area of each square and rectangle on page 149. Check your answers before moving onto: PART 2 – WORKBOOK Q1 a, b and c – page 111 Q1 d, e and f – page 112</p>
Methods, tips, clues & checks	Day 1 resources and answers (below)	Day 2 resources and answers (below)	Day 3 resources and answers (below)	Day 4 resources and answers (below)	Day 5 resources and answers (below)

See below for resources to support you to THINK-SEE-DO



DAY 1 RESOURCES:

THINK:



I measured all four sides.
The perimeter is 16.

I measured only two sides.
The perimeter is 160.

Look at page 122 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

DO:

PART 1 – TEXTBOOK

- Q2 a, b and c – page 124

PART 2 – WORKBOOK

- Q1 a and b – page 85
- Q1 c and d – page 86
- Q2 a, b and c – page 87

You will need a ruler to help you solve today's problems.

Deepening:

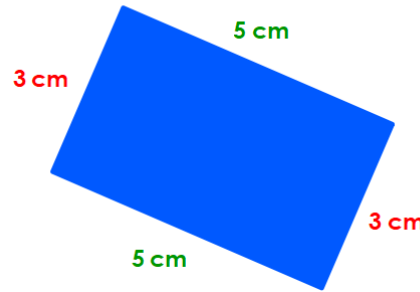
I walk three times around a hockey pitch that is 80m long and 40m wide. How far do I walk?

Explain how you know.

SEE: [VIDEO HERE](#)

Check the solution on pages 122-123 of your textbook.

Lulu measured all four sides in cm.

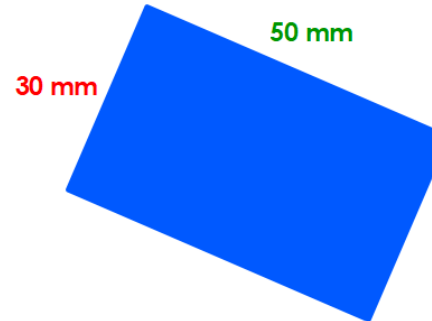


$$\text{Perimeter} = 3 \text{ cm} + 5 \text{ cm} + 3 \text{ cm} + 5 \text{ cm} = 16 \text{ cm}$$

$$\begin{aligned} \text{Perimeter} &= 2 \times 3 \text{ cm} = 6 \text{ cm} \\ &2 \times 5 \text{ cm} = 10 \text{ cm} \end{aligned}$$

$$6 \text{ cm} + 10 \text{ cm} = 16 \text{ cm}$$

Sam measured only two sides in mm.



$$\begin{aligned} \text{Perimeter} &= 2 \times 30 \text{ mm} + 2 \times 50 \text{ mm} \\ &= 60 \text{ mm} + 100 \text{ mm} \\ &= 160 \text{ mm} \end{aligned}$$

Remember:

$$1 \text{ cm} = 10 \text{ mm}$$

$$16 \text{ cm} = 160 \text{ mm}$$



DAY 2 RESOURCES:

THINK:



Use these squares to make as many different figures as you can.

You do not need to use all four squares.

Look at page 135 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

DO:

PART 1 – TEXTBOOK

- Use square tiles/paper to form 5 of the figures on page 137. Order the figures by smallest area to largest area.

PART 2 – WORKBOOK

- Q1 – page 105
- Q2 a, b and c – page 106.

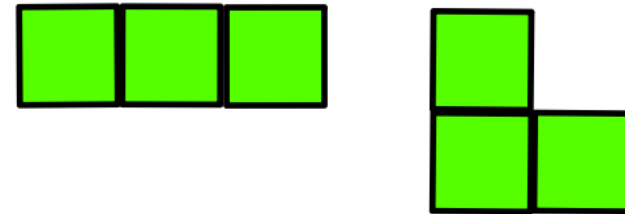
Deepening:

A rectangular patio measuring 10m by 6m is paved with square paving slabs – each 500mm by 500mm. How many paving slabs are needed altogether?
Show your thinking using words and pictures.

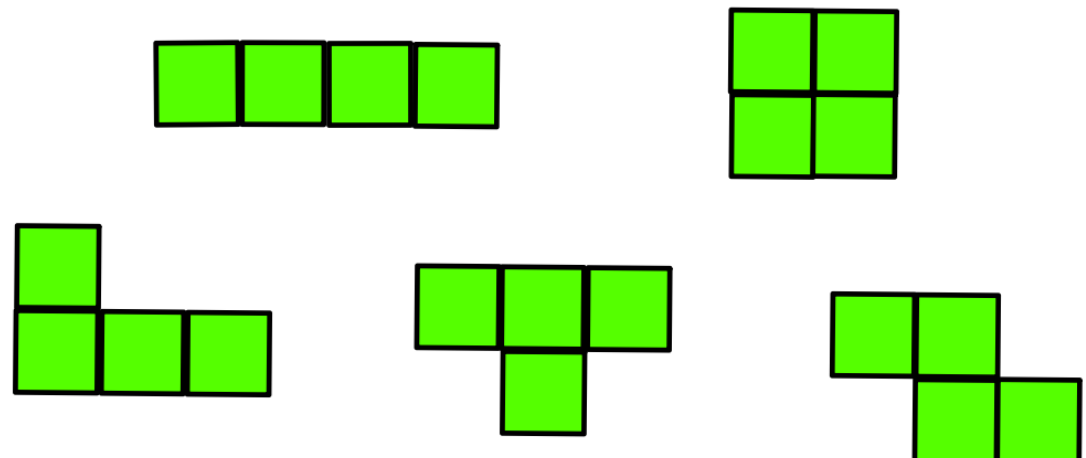
SEE: VIDEO HERE

Check the solution on page 135-136 of your textbook.

I used 3 squares to make these figures.
Each figure covers the same amount of surface as 3 square tiles.
Each figure has the same area as 3 square tiles.



I used 4 squares to make these figures.
Each figure covers the same amount of surface as 4 square tiles.
Each figure has the same area as 4 square tiles.



Square shaped post it notes would be ideal for helping to solve today's problem!



DAY 3 RESOURCES:

THINK:

Figures with the **same area** can have **different perimeters**.

Figures with the **same perimeter** can have **different areas**.

Who is correct?

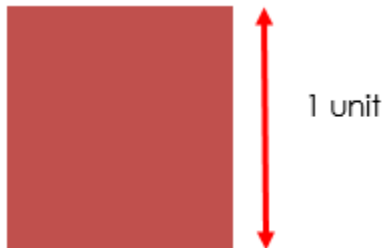
Look at page 138 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

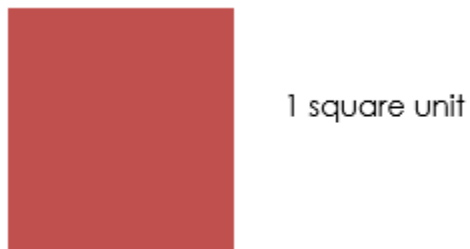
SEE: VIDEO HERE

Check the solution on pages 138-139 of your textbook.

- **Perimeter measures the length around a figure.**



- **Area measures the amount of surface inside a shape.**



- **Area and Perimeter are different measures of size.**

It is possible to make figures with the same area and the same perimeter. It is also possible to make figures with the same area but different perimeters, or the same perimeter but different areas.

DO:

PART 1 – TEXTBOOK

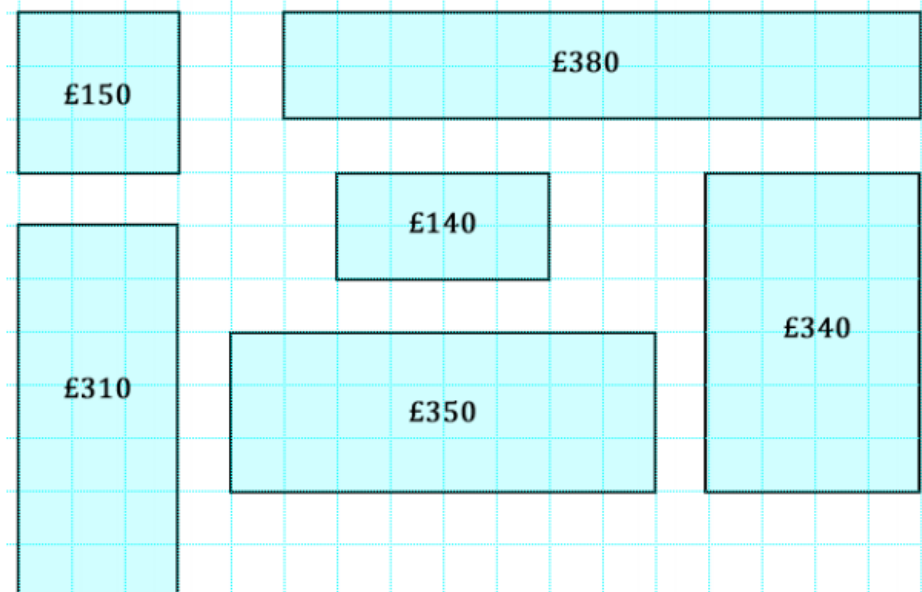
Q3 – page 142
Find the area of each figure.
Check your answers below.

PART 2 – WORKBOOK

Q1 – page 107
Q2 – page 108
Q3 – page 108

Deepening:

My local DIY shop calculates the price of their windows according to the area of glass that is used and the length of the frame that is needed.



Can you work out how they arrived at the prices of these windows?
Hint – You need to work out how much each square unit of glass will cost. You also need to work out how much each unit of the perimeter will cost.

DAY 4 RESOURCES:

THINK:

I have 3 square tiles and 2 triangle tiles. I want to make figures using all 5 tiles. What figures could I make?



Look at page 143 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

DO:

PART 1 – TEXTBOOK

- Find the area of each figure on page 145.

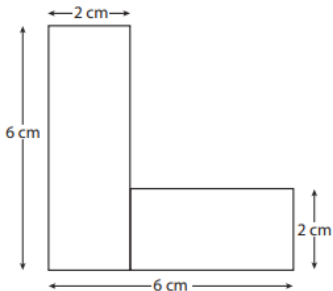
Check your answers below.

PART 2 – WORKBOOK

- Q1 a and b – page 110 (use the figures on page 109 to complete Q1a).
- Q2 a and b – page 110.

Deepening:

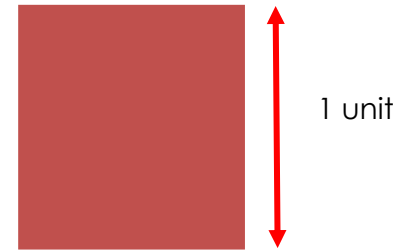
The shape below is made from two rectangles. Identify the perimeter of each of the two rectangles. How many 1 cm squares would fit into the smaller rectangle? How many more squares fit into the larger rectangle? Explain your answer in words and pictures?



SEE: VIDEO HERE

Check the solution on pages 143-144 of your textbook.

We know that the perimeter is the total length around a shape or figure. We measure perimeter in **units**, like this:



We know that the area measures the surface inside a figure. We measure area in **square units**. If 4 squares fit exactly on the surface inside a figure, we can say that the area of the figure is 4 square units.



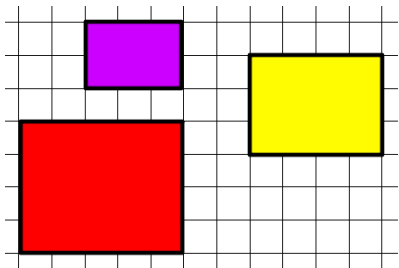
These triangle tiles represent half of one whole square unit. When we put them together, we can make one square unit:



DAY 5 RESOURCES:

THINK:

My friend drew some rectangles. How can he tell the area of each rectangle?



Look at page 146 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

DO:

PART 1 – TEXTBOOK

- Use two different methods to find the area of each square and rectangle on page 149.

Check your answers below.

PART 2 – WORKBOOK

- Q1 a, b and c – page 111
- Q1 d, e and f – page 112

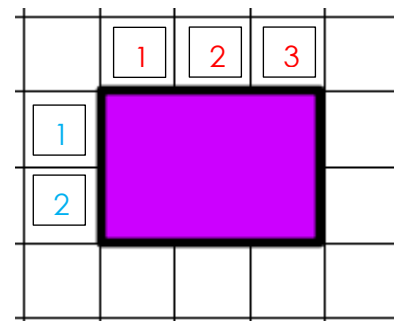
Deepening:

Turn to page 155 in your textbook and have a go at solving the problem. Can you explain, using words and pictures, why my two friends are incorrect?

SEE: [VIDEO HERE](#)

Check the solution on pages 147-148 of your textbook.

Up until now, we have been counting squares to find out the area of different figures but this is not the most efficient method. Today we are going to use our multiplication knowledge to help us find the area of my friend's rectangles. Let's look at this rectangle:



I can see that there are **3 square units** in 1 row.

I can also see that there are **2 rows**.

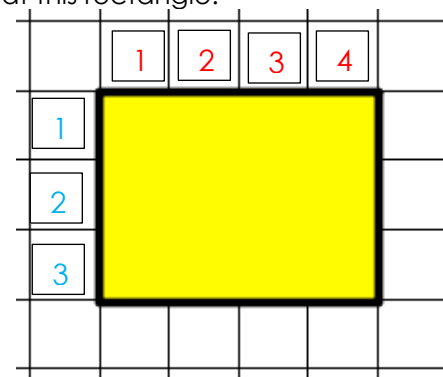
I can say that I have **2 rows of 3 square units**.

2 rows x 3 square units = 6 square units.

2 x 3 = 6 square units.

The area of this rectangle is **6 square units**.

Now let's have a look at this rectangle:



3 rows x 4 square units = 12 square units

3 x 4 = 12 square units.

The area of the rectangle is **12 square units**.



ANSWERS – Part 1 TEXTBOOK:

<u>Day 1</u> PART 1 – TEXTBOOK	<u>Day 2</u> PART 1 – TEXTBOOK	<u>Day 3</u> PART 1 – TEXTBOOK	<u>Day 4</u> PART 1 – TEXTBOOK	<u>Day 5</u> PART 1 – TEXTBOOK
Question 2 a. 200mm b. 180mm c. 220mm	Send your answers to your teacher for checking.	Question 3 a. 2 square units b. 6 square units c. 6 square units d. 13 square units e. 9 square units f. 12 square units.	Figure A = 3 square units Figure B = 5 square units Figure C = 3 square units Figure D = 10 square units Figure E = 9 square units Figure F = 14 square units Figure G = 13 square units	A = $3 \times 5 = 15$ square units B = $5 \times 5 = 25$ square units C = $2 \times 2 = 4$ square units D = $6 \times 3 = 18$ square units

ANSWERS – PART 2 WORKBOOK AND DEEPENING:

Day 1

Question 1

- a. 13.6cm / 136mm
- b. 18.2cm / 182mm
- c. 15cm / 150mm
- d. 15.6cm / 156mm

Question 2

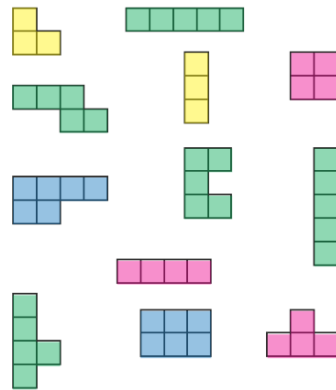
- a. 132mm
- b. 192mm
- c. 195mm

Deepening:

80m + 40m = 120m
 120m x 2 = 240m
 240m x 3 = 720m
 I walked 720m

Day 2

Question 1



Question 2

- a. Your figure should have a surface area of 5 square units.
- b. Your figure should have a surface area of 5 square units.
- c. Your figure should have surface area of 6 square units.

Deepening:

20 x 12 = 240 slabs
 (20 slabs along the long edge, and 12 slabs down the short edge so 12 rows of 20).

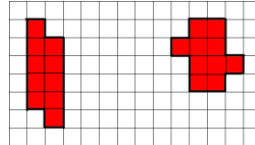
Day 3

Question 1

	Area	Perimeter
Figure A	6 square units	12 units
Figure B	8 square units	18 units
Figure C	10 square units	16 units
Figure D	6 square units	14 units
Figure E	8 square units	16 units

Question 2

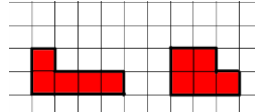
You may have a different answer, but it could look like this:



Notice how both the areas and the perimeters of the shapes are the same.

Question 3

You may have a different answer, but it could look like this:



Notice how the area of the figures is the same but they both have different perimeters.

Deepening:

Each square unit of glass costs £10 each and each unit of frame costs £5 each.

Day 4

Question 1a

Figure A = 4 square units
 Figure B = 7 square units
 Figure C = 5 square units
 Figure D = 7 square units
 Figure E = 9 square units
 Figure F = 6 square units
 Figure G = 8 square units
 Figure H = 8 square units

Question 1b

Figure E has the greatest area in square units.

Questions 2a and 2b

Answers will vary.

Deepening:

The perimeter of the larger rectangle is 16cm.
 6cm x 2 = 12cm and
 2cm x 2 = 4cm
 12cm + 4cm = 16cm.
 The perimeter of the smaller rectangle is 12cm.
 4cm x 2 = 8cm and
 2cm x 2 = 4cm
 8cm + 4cm = 12cm.
 The larger rectangle has a surface area of 12 square units and the smaller rectangle has a surface area of 8 square units. Therefore, the larger rectangle contains 4 more square units than the smaller rectangle.

Day 5

Question 1

- a. 2 x 1 = 2 square units
- b. 2 x 2 = 4 square units
- c. 2 x 3 = 6 square units
- d. 3 x 3 = 9 square units
- e. 5 x 2 = 10 square units
- f. 3 x 6 = 18 square units.

Deepening:

The area does not change.

Perimeter of A = 24cm
 Perimeter of B = 16cm
 Perimeter of C = 16cm

Total perimeter of B and C =
 16cm + 16cm = 32cm

32cm is **not** twice the perimeter of A



