

Year 4 maths – Summer 2 Week 3 beginning: 15.06.20

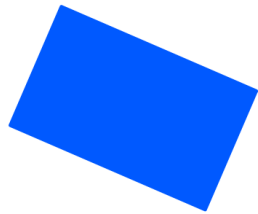
| Theme  | Mass, Volume, and Length (Lesson 11 of 11)<br>Measuring perimeter in different units   | Area of Figures (Lesson 1 and 2 of 5)<br>Measuring Area  | Areas of Figures (Lesson 3 of 5)<br>Measuring Area   | Area of Figures (Lesson 4 of 5)<br>Measuring Area  | Area of Figures (Lesson 5 of 5)<br>Measuring Area   |
|--|--|--|--|--|---|
| Factual fluency (to aid fluency)   | <a href="#">Find the perimeter of the rectangles.</a>  | <a href="#">Find the perimeter of the rectilinear shapes.</a>  | <a href="#">Find the area of figures in square units.</a>  | <a href="#">Create figures with a given area in square units.</a>  | <a href="#">Select figures with the same area.</a>  |
| Problem/activity of the day<br><br>Remember, just like in class, you can still show the depth of your knowledge <a href="#">LINK</a> | <p><b>(Lesson 1 resources below)</b><br/><b>MAKING LINKS:</b> 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><b>THINK: (support below)</b><br/>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.<br/><b>Our problem is on page 122 of the textbook. Look at it now.</b></p> <p><b>SEE: (model below)</b><br/>Different ways to solve the problems are on <b>page 122 and page 123</b> of your textbook.<br/><a href="#">See video here.</a></p> <p><b>DO:</b><br/><b>PART 1 - TEXTBOOK</b><br/>Q1 a, b and c – page 123<br/>Q2 a, b and c – page 124<br/>Check your answers before moving onto:<br/><b>PART 2 – WORKBOOK</b><br/>Q1 a and b – page 85<br/>Q1 c and d – page 86<br/>Q2 a, b and c – page 87</p> | <p><b>(Lesson 2 resources below)</b><br/><b>MAKING LINKS:</b> 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><b>THINK: (support below)</b><br/>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?<br/><b>Our problem is on page 135 of the textbook. Look at it now.</b></p> <p><b>SEE: (model below)</b><br/>Different ways to solve the problems are on <b>page 135 and page 136</b> of your textbook.<br/><a href="#">See video here</a></p> <p><b>DO:</b><br/><b>PART 1 – TEXTBOOK</b><br/>Use square tiles/paper to form 5 of the figures on page 137. Order the figures by smallest area to largest area.</p> <p><b>PART 2 – WORKBOOK</b><br/>Q1 – page 105<br/>Q2 a, b and c – page 106</p> | <p><b>(Lesson 3 resources below)</b><br/><b>MAKING LINKS:</b> 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><b>THINK: (support below)</b><br/>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?<br/><b>Our problem is on page 138 of the textbook. Look at it now.</b></p> <p><b>SEE: (model below)</b><br/>Different ways to solve the problems are on <b>page 138 and page 139</b> of your textbook.<br/><a href="#">See video here</a></p> <p><b>DO:</b><br/><b>PART 1 – TEXTBOOK</b><br/>Q3 – page 142<br/>Find the area of each figure.<br/>Check your answers before moving onto:<br/><b>PART 2 – WORKBOOK</b><br/>Q1 – page 107<br/>Q2 – page 108<br/>Q3 – page 108</p> | <p><b>(Lesson 4 resources below)</b><br/><b>MAKING LINKS:</b> 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><b>THINK: (support below)</b><br/>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?<br/><b>Our problem is on page 143 of the textbook. Look at it now.</b></p> <p><b>SEE: (model below)</b><br/>Different ways to solve the problems are on <b>page 143 and page 144</b> of your textbook.<br/><a href="#">See video here.</a></p> <p><b>DO:</b><br/><b>PART 1 – TEXTBOOK</b><br/>Find the area of each figure on page 145.<br/>Check your answers before moving onto:<br/><b>PART 2 – WORKBOOK</b><br/>Q1 a and b – page 110<br/>(use the figures on page 109 to complete Q1a).<br/>Q2 a and b – page 110.</p> | <p><b>Lesson 5 resources below</b><br/><b>MAKING LINKS:</b> 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><b>THINK: (support below)</b><br/>Can you help me with this problem? My friend drew some rectangles. How can he tell the area of each rectangle?<br/><b>Our problem is on page 146 of the textbook. Look at it now.</b></p> <p><b>SEE: (model below)</b><br/>Different ways to solve the problems are on <b>page 147 and page 148</b> of your textbook.<br/><a href="#">See video here.</a></p> <p><b>DO:</b><br/><b>PART 1 – TEXTBOOK</b><br/>Use two different methods to find the area of each square and rectangle on page 149.<br/>Check your answers before moving onto:<br/><b>PART 2 – WORKBOOK</b><br/>Q1 a, b and c – page 111<br/>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

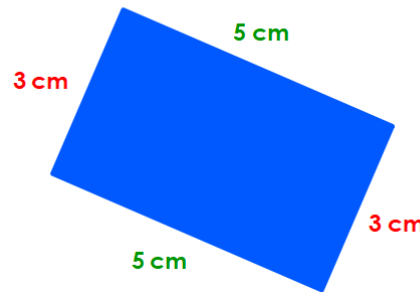
#### PART 2 – WORKBOOK

- 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.

### SEE: [VIDEO HERE](#)

Check the solution on pages 122-123 of your textbook.  
Lulu measured all four sides in **cm**.

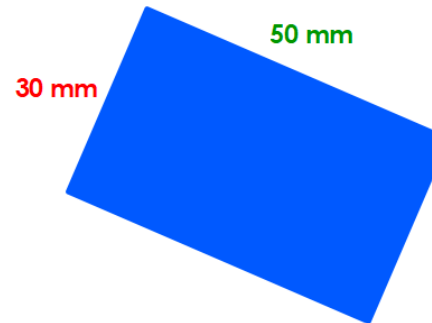


$$\text{Perimeter} = 3 \text{ cm} + 5 \text{ cm} + 3 \text{ cm} + 5 \text{ cm} = 16 \text{ cm}$$

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

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

Sam measured only two sides in **mm**.



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

When we are converting from **cm to mm**, we need to **multiply by 10**:

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

$$16 \text{ cm} \times 10 = 160 \text{ mm}$$

If we are converting from **mm to cm**, we need to **divide by 10**:

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

$$160 \text{ mm} \div 10 = 16 \text{ cm}$$



Day 1 Support Resources

Use this place value chart to help you multiply or divide by 10 to convert between cm and mm or use an online version [here](#).

| Thousands | Hundreds | Tens | Ones | Tenths | Hundredths |
|-----------|----------|------|------|--------|------------|
|           |          |      |      |        |            |

## 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.

**Key Vocabulary** – make sure you use this key vocabulary to help you identify and order the figures in Part 1:

- tiles
- square units
- surface area

#### PART 2 – WORKBOOK

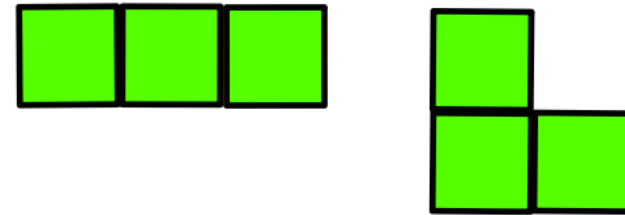
- Q1 – page 105
- Q2 a, b and c – page 106.

When drawing figures with the same area, you need to make sure that both figures have the **same number** of square units in them.

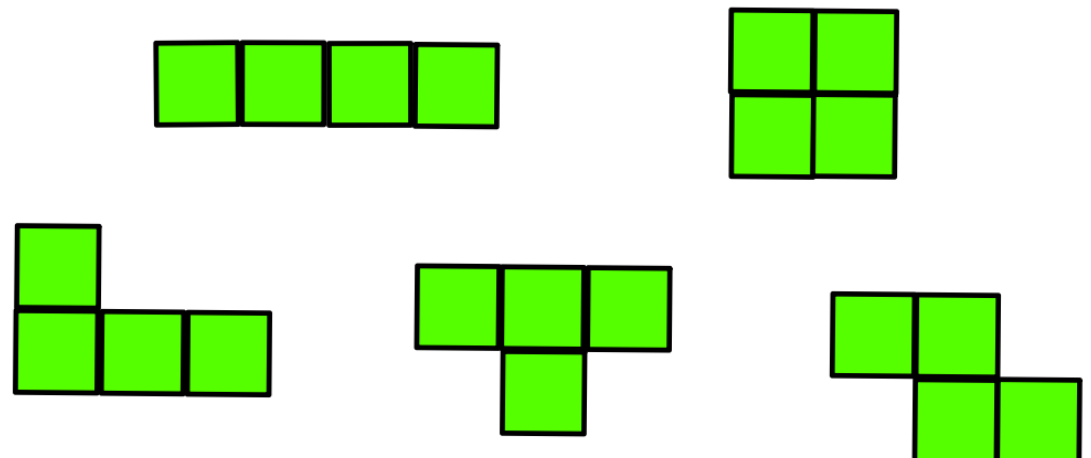
### SEE: VIDEO HERE

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?

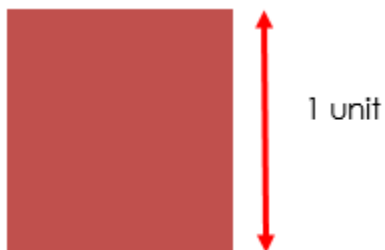
**Look at page 138 in your textbook.**

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

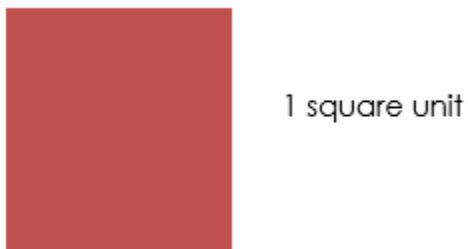
### SEE: [VIDEO HERE](#)

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

#### Top Tip!

Use square pieces of paper or square shaped post it notes to help you create different figures.

Don't forget to count the squares that you have used to find the area of your figures in square units.



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## 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.

#### Remember:

We measure area in square units.

If you push the triangles together to make a square, you will make 1 square unit.

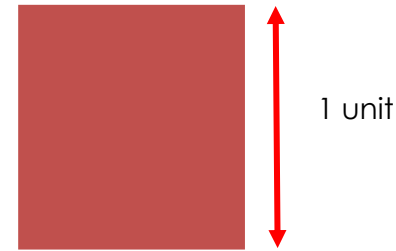
The triangles do not have to be together to create a square unit. If you have a figure that has 2 triangles, even if they are in different places in the figure, the triangles still cover 1 square unit.



### 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.



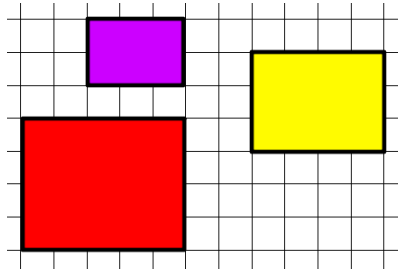
These triangle tiles represent half of one whole square unit. When we put them together, we can make one square unit:



## 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

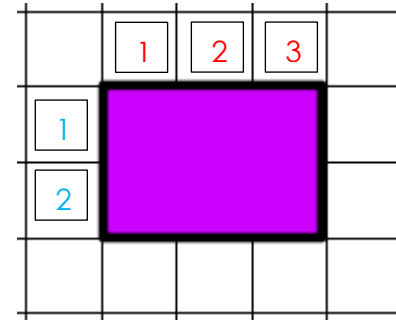
#### Remember to:

- ✓ Identify the number of rows in the rectangle.
- ✓ Identify the number of squares in each row
- ✓ Write the calculation:  $\text{rows} \times \text{squares} = \text{square units}$
- ✓ Solve the calculation!

### 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**.

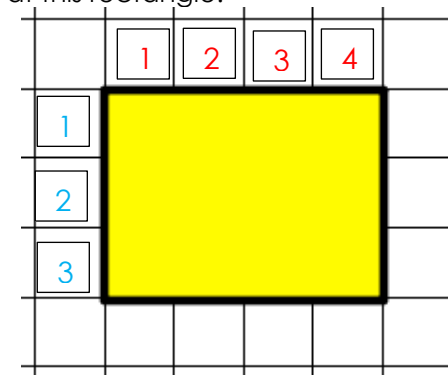
I can say that I have **2 rows of 3 square units**.

**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**.

**DAY 5 RESOURCES:**

Use this multiplication grid to help you calculate the answers to the multiplication problems.

| X  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9   | 10  | 11  | 12  |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| 1  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9   | 10  | 11  | 12  |
| 2  | 2  | 4  | 6  | 8  | 10 | 12 | 14 | 16 | 18  | 20  | 22  | 24  |
| 3  | 3  | 6  | 9  | 12 | 15 | 18 | 21 | 24 | 27  | 30  | 33  | 36  |
| 4  | 4  | 8  | 12 | 16 | 20 | 24 | 28 | 32 | 36  | 40  | 44  | 48  |
| 5  | 5  | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45  | 50  | 55  | 60  |
| 6  | 6  | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54  | 60  | 66  | 72  |
| 7  | 7  | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63  | 70  | 77  | 84  |
| 8  | 8  | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72  | 80  | 88  | 96  |
| 9  | 9  | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81  | 90  | 99  | 108 |
| 10 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90  | 100 | 110 | 120 |
| 11 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99  | 110 | 121 | 132 |
| 12 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |



## ANSWERS – Part 1 TEXTBOOK:

| <u>Day 1</u><br>PART 1 – TEXTBOOK  | <u>Day 2</u><br>PART 1 – TEXTBOOK                      | <u>Day 3</u><br>PART 1 – TEXTBOOK  | <u>Day 4</u><br>PART 1 – TEXTBOOK   | <u>Day 5</u><br>PART 1 – TEXTBOOK   |
|--|--|--|---|---|
| <p><b>Question 1</b></p> <p>a. 120mm = 12cm<br/>b. 140mm = 14cm<br/>c. 120mm = 12cm</p> <p><b>Question 2</b></p> <p>a. 200mm<br/>b. 180mm<br/>c. 220mm</p> | <p>Send your answers to your teacher for checking.</p> | <p><b>Question 3</b></p> <p>a. 2 square units<br/>b. 6 square units<br/>c. 6 square units<br/>d. 13 square units<br/>e. 9 square units<br/>f. 12 square units.</p> | <p>Figure A = 3 square units<br/>Figure B = 5 square units<br/>Figure C = 3 square units<br/>Figure D = 10 square units<br/>Figure E = 9 square units<br/>Figure F = 14 square units<br/>Figure G = 13 square units</p> | <p>A = <math>3 \times 5 = 15</math> square units<br/>B = <math>5 \times 5 = 25</math> square units<br/>C = <math>2 \times 2 = 4</math> square units<br/>D = <math>6 \times 3 = 18</math> square units</p> |

# ANSWERS – PART 2 WORKBOOK AND DEEPENING:

## Day 1

### Question 1

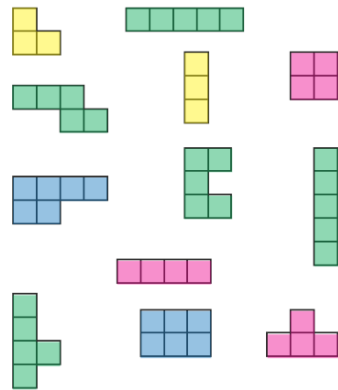
- a. 13.6cm / 136mm
- b. 18.2cm / 182mm
- c. 15cm / 150mm
- d. 15.6cm / 156mm

### Question 2

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

## 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.

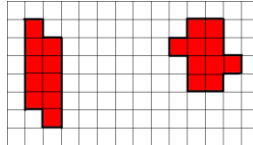
## Day 3

### 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

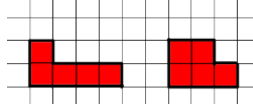
You may have a different answer, but it could look like this:



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.

## 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.

## Day 5

### Question 1

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