ABBEY PARK SCHOOL

Year 6-7

Maths

Transition Pack

This booklet is to help you prepare for year 7 at Abbey Park School.

Please choose one section either one, two or three chillies and use the base-line check to find any topics that you need to practice.

You can then find more practice in each section, in the mixed levels at the end or use this link: https://www.abbeyparkschool.org.uk/admissions/year-6-transition on our website for further support.

Please use the answers in the booklet to correct any work that you complete and bring it in to show us so you can start collecting reward points in September.

This work is all optional and there is no expectation to finish all of it however it will help you get off to a strong start in Maths at Abbey Park School.
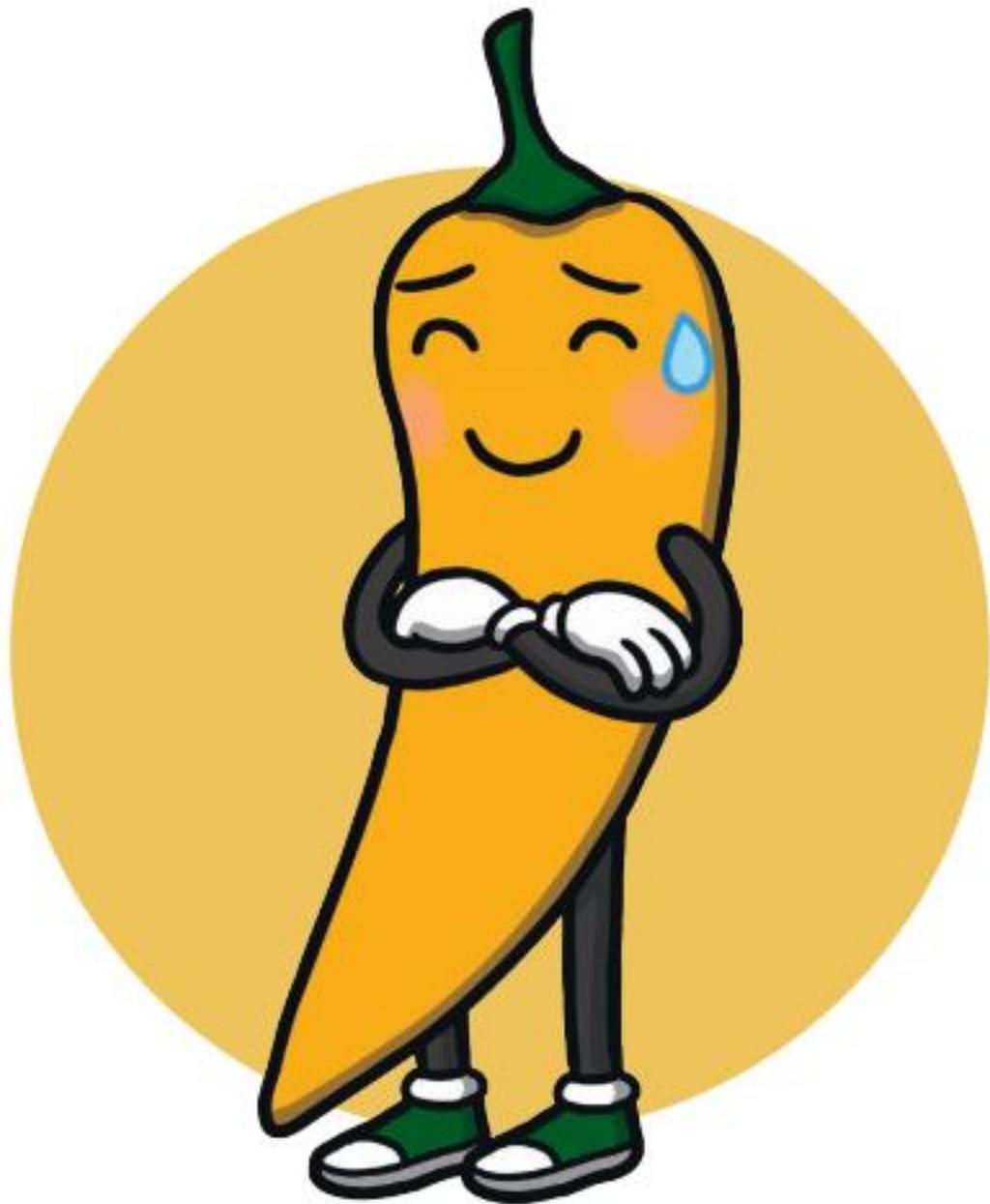
It's Getting Hot!

BASELINE CHECK

1. Find 15% of £420 [2 marks]

_____

_____

_____

£ _____

2. a. Work out 98 + 37 [1 mark]

_____

_____

_____

_____

   b. Work out 124 − 58 [1 mark]

_____

_____

_____

_____

3.
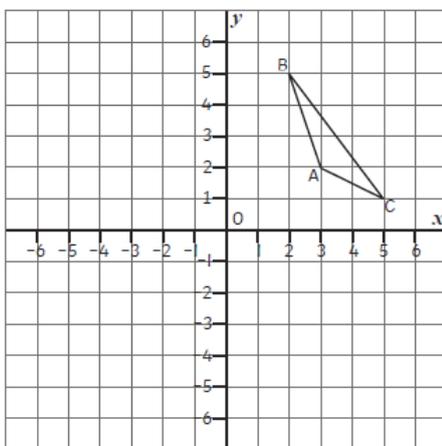
   a. Give the coordinates of the point B on the triangle. [1 mark]

   _____

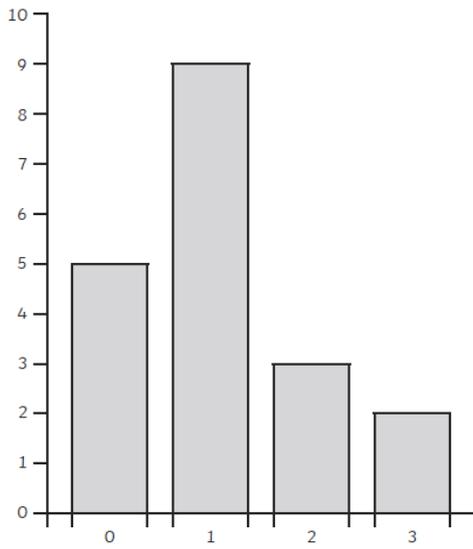   b. Reflect triangle ABC in the y-axis. [1 mark]

   c. What are the coordinates of the point which is the reflection of point C in the y-axis? [1 mark]

   _____

4. When $x = 5$, find the value of $4x + 3$. [2 marks]

_____

_____

_____

_____

5. 19 children were asked how many brothers and sisters they have. The bar chart shows the results:

a. How many of the children who were asked have 3 brothers and sisters? [1 mark]

_____

b. How many more children are there with exactly 1 brother or sister than children with exactly 2 brothers and sisters? [1 mark]

_____

c. If all of the children who were asked were to gather in a room with all of their brothers and sisters, how many people would there be in the room? (Assuming that none of the 19 children are already related.) [3 marks]

_____

6. Field A has an area of 24 000m² and a perimeter of 700m.
   Field B has area 18 000m² and a perimeter of 1000m.

   a. Which field will provide the most grazing land for cows? Give a reason for your answer. [1 mark]

   _____

   _____

   b. Which field will require the least fencing to keep the cows in? Give a reason for your answer. [1 mark]

   _____

   _____

7. a. Work out $\frac{2}{3} + \frac{1}{4}$ [2 marks]

   _____

   _____

   b. Work out $1\frac{2}{3} \div 4$ [3 marks]

   _____

   _____

   _____

8. Each of the PE teachers at Sprintfield High School runs the 100m and records his or her time. These are shown below, given in seconds.
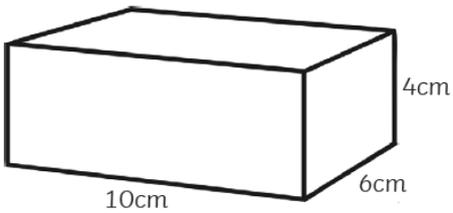
13.2, 15.8, 12.7, 14.1

What is the mean average time taken by the teachers to complete the 100m?   [2 marks]

_____

_____

_____

_____ seconds

9. a. Write the number four hundred and seventeen thousand and eight in figures.   [1 mark]

_____

b. Work out 6.1 × 1000   [1 mark]

_____

10. A cuboid is 10cm wide, 6cm long and 4cm high. What is the volume of the cuboid? You must state the units of your answer.   [2 marks]

_____

_____

_____

_____

11. Work out 47 × 82   [2 marks]

_____

_____

_____

12. a. Work out 4361 ÷ 7   [2 marks]

_____

_____

_____

b. Work out 851 ÷ 37   [2 marks]

_____

_____

_____

13. The first 5 terms of a sequence are: 23, 19, 15, 11, 7, ...

a. What is the term-to-term rule?   [1 mark]

_____

b. What are the 6th and 7th terms of the sequence?   [2 marks]

_____

_____

_____

14. Complete the table: [3 marks]

Fully Simplified Fraction	Decimal	Percentage
$\frac{1}{2}$		
		23%
	0.2	

15. a. Lilly, Jayne and Margaret share £90 in the ratio 3:7:5. How much does each girl get?   [2 marks]

_____

_____

_____

Lilly: £_____ Jayne: £_____ Margaret: £_____

b. What fraction of the £90 does Jayne get?   [1 mark]

_____

_____

_____

16. a. The cost of an apple is c pence. What is the cost of 7 apples? Give your answer in terms of c.   [1 mark]

_____

_____

_____

_____ pence

b. A plank is T metres long. 7 lengths of n centimetres are removed from the length. What is the length of the remaining piece of wood in centimetres? Give your answer in terms of T and n.   [2 marks]

_____

_____

_____

_____ cm

17. From this list of numbers: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 find the following: (you may use each number more than once)

a. a factor of 75   [1 mark]

_____

b. a square number   [1 mark]

_____

c. the lowest common multiple of 8 and 6   [1 mark]

_____

d. a pair of numbers with a sum of 52 and a difference of 6   [1 mark]

_____

_____

18. It costs £1.20 for a bag of popcorn and £2.30 for an ice cream sundae at the Red Carpet Cinema. Brigitte has £20. She buys 3 bags of popcorn then buys as many ice cream sundaes as she can afford. How many ice cream sundaes does she buy?   [2 marks]

_____

_____

_____

19. a. Work out 7 + 2 × 5 [1 mark]

_____

_____

b. Work out 13 + 2 ÷ 2 - 5 [1 mark]

_____

_____

_____

20. a. Michael measures the length of his foot. It is 17cm.
Round this measurement to the nearest 10cm. [1 mark]

_____

_____ cm

b. Hafiz measures the length of his leg. He then rounds the length to the nearest 10cm to give 70cm.
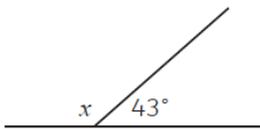What is the shortest length that his leg could be? [1 mark]

_____

_____ cm

c. Ilana measures the circumference of her head. It is 63.5cm. Give this length in metres. [1 mark]

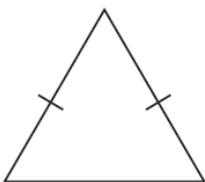_____

_____ m

21. a. Find the size of angle x. [1 mark]

_____

_____

_____ °

b. This isosceles triangle has an angle of 40°. What are the possible sizes of the other two angles?
[3 marks]

_____

_____

_____

Two chillies ANSWERS

Question		Answer	Marks
1.			2 marks total
		10% of 420 = 42 or some other helpful percentage of 420 correctly given 15% of 420 = 63	1 or 2
2.			2 marks total
	a.	135	1
	b.	66	1
3.			3 marks total
	a.	(2,5)	1
	b.	Reflected triangle with vertices at (-3,2),(-2,5),(-5,1)	1
	c.	(−5,1)	1
4.			2 marks total
		$4x = 20$ $4x + 3 = 23$	1 or 2
5.			5 marks total
	a.	2	1
	b.	9 − 3 = 6	1
	c.	$(5 \times 0)+(9 \times 1)+(3 \times 2)+(2 \times 3)$ =21 21 + 19 = 40	1 for 2 correctly stated products; the children who were asked may be incorporated at this stage or 2 or 3
6.			2 marks total
	a.	Field A as it has the larger area	1
	b.	Field A as it has the smaller perimeter	1
7.			5 marks total
	a.	$\frac{8}{12} + \frac{3}{12}$ or any pair of equivalent fractions with common denominator, with maximum 1 incorrect number. $\frac{11}{12}$	1 or 2
	b.	$\frac{5}{3}$ $\frac{5}{3} \times \frac{1}{4}$ $\frac{5}{12}$	1 or 2 or 3

8.			2 marks total
	13.2 + 15.8 + 12.7 + 14.1 = 55.8 Mean = 13.95 seconds		1 or 2

9.			2 marks total
	a.	417 008	1
	b.	6100	1

10.			2 marks total
	240 cm^3		1 or 2

11.			2 marks total
	1 mark for correct result for 47 × 80, 47 × 2, 40 × 82 or 7 × 82 Or 2 correct product results if both numbers are partitioned into tens and units. 3854		1 or 1 or 2

12.			4 marks total
	a.	Suitable written method with first 2 quotients correct. 623	1 or 2
	b.	Suitable written method with 1 correct quotient and remainder correct. 23	1 or 2

13.			3 marks total
	a.	Subtract 4	1
	b.	3 −1	1 1

14.			3 marks total
			1 per fully correct row or column up to a max of 2 3 for all correct

Fully Simplified Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{23}{100}$	0.23	23%
$\frac{1}{5}$	0.2	20%

15.			3 marks total
	a.	Multiplier = 6 £18:£42:£30	1 or 2 or 1 for 2 correct if no marks already awarded
	b.	$\frac{7}{15}$ or equivalent	1

Two chillies

Investigating Perimeter and Area 2

> Recognise that shapes with the same areas can have different perimeters and vice versa.

Using whole squares and half cm squares (rectangles), there are 2 rectilinear shapes that use 1 square:

Shape 1: Area _____ cm²

Perimeter _____ cm

Shape 2: Area _____ cm²

Perimeter _____ cm

What do you notice about the area and perimeter of these 2 shapes?

_____

_____

Draw the different shapes that use 2 squares and write the area and perimeter in the table on the next page.

Shape	Area	Perimeter

What do you notice about the area and perimeter of these shapes?

_____

_____

What reasons can you give for this?

_____

_____

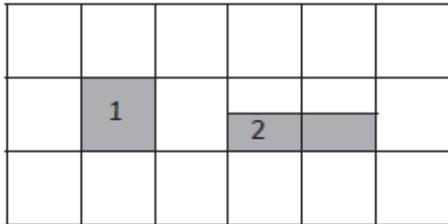Draw different shapes with 3 squares and write the area and perimeter in the table on the next page.
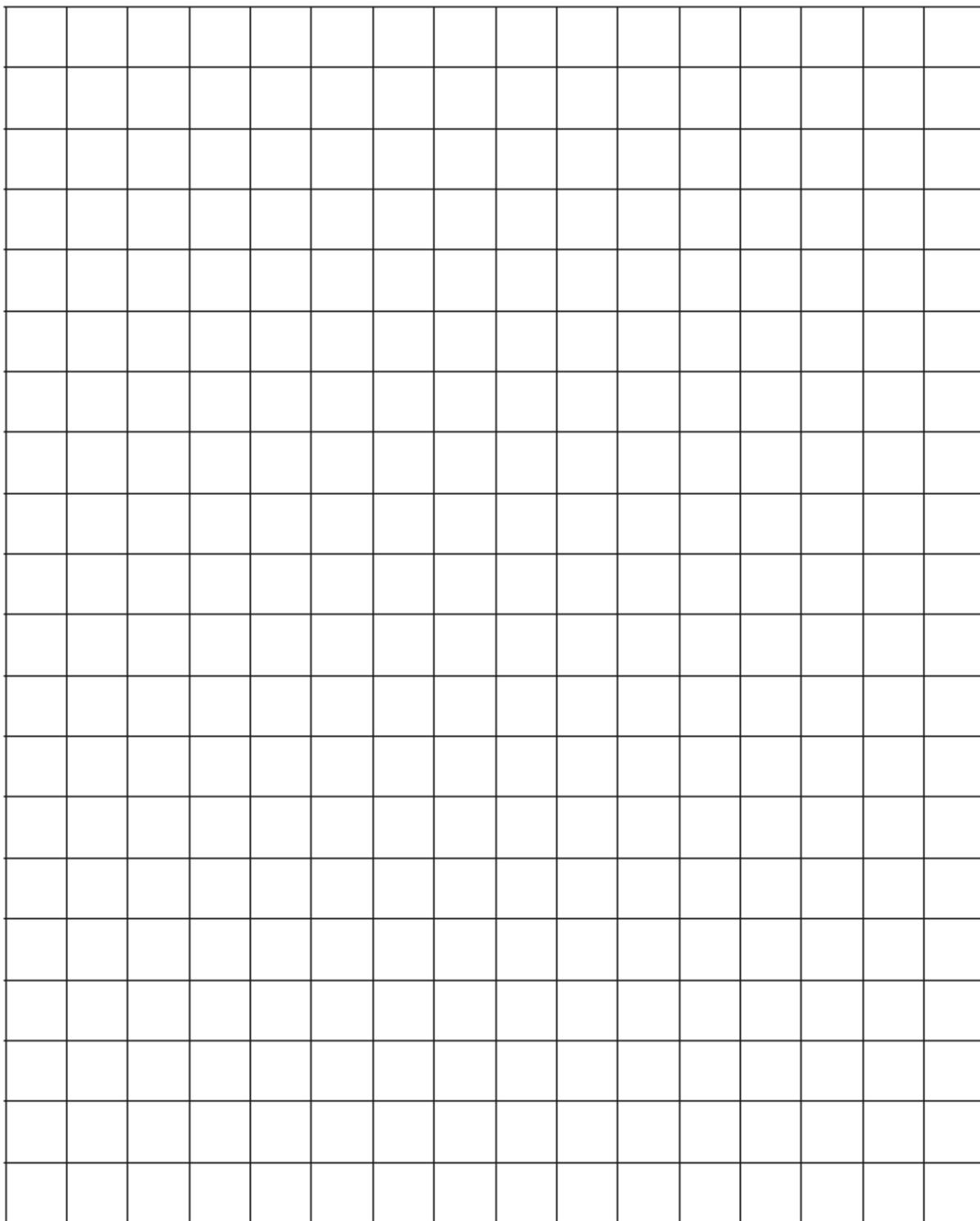
Shape	Area	Perimeter
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		

What have you found out?

_____

_____

_____

_____

Two chillies answers

Recognise that shapes with the same areas can have different perimeters and vice versa.

Using whole squares and half cm squares (rectangles), there are 2 rectilinear shapes that use 1 square:
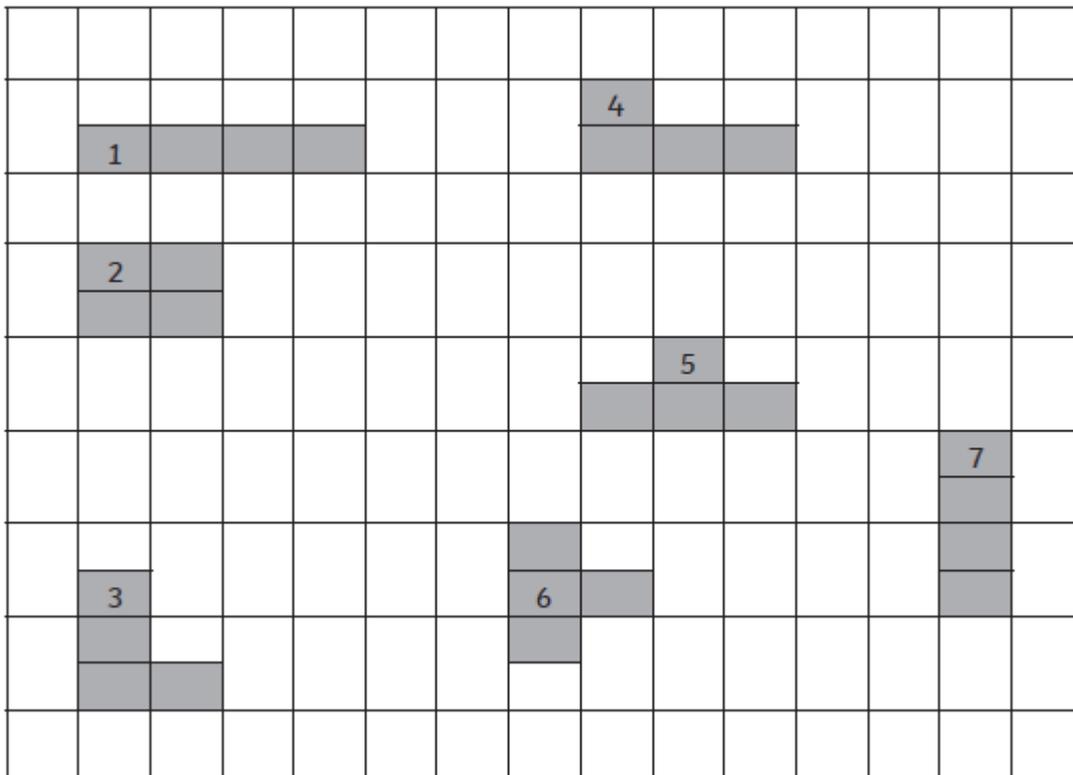
Shape 1: Area: **1** cm²

Perimeter: **4** cm

Shape 2: Area: **1** cm²

Perimeter: **5** cm

What do you notice about the area and perimeter of these 2 shapes?

The area of both shapes is the same, but the perimeters are different.

Draw the different shapes that use 2 squares and write the area and perimeter in the table on the next page.

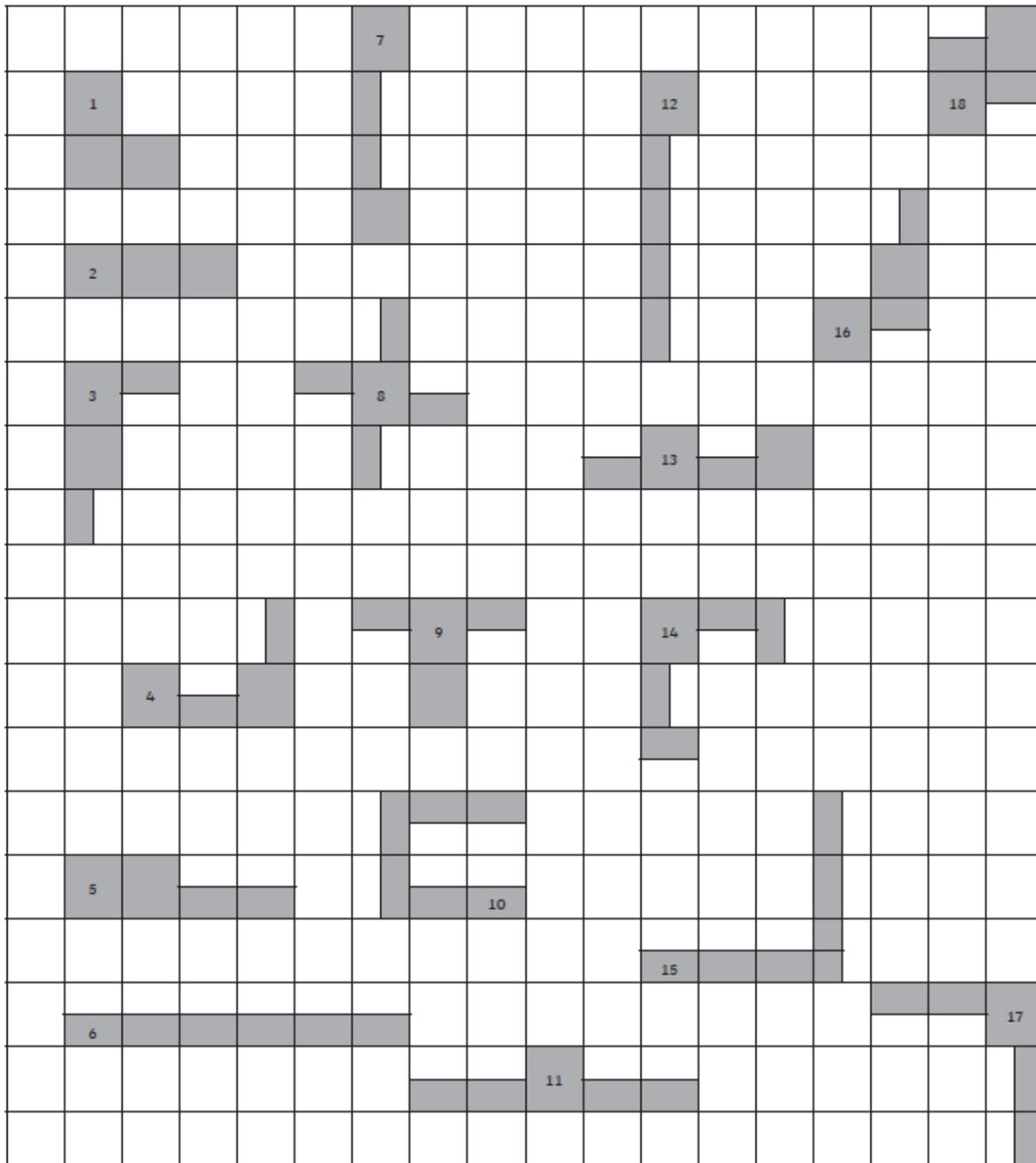| Shape	Area	Perimeter
1	2cm²	9cm
2	2cm²	6cm
3	2cm²	7cm
4	2cm²	8cm
5	2cm²	8cm
6	2cm²	7cm
7	2cm²	6cm

What do you notice about the area and perimeter of these shapes?

The area is always the same, but there are 4 different perimeters.

What reasons can you give for this?

The use of rectangles gives different shapes. The more the shape resembles a square, the smaller the perimeter.

Draw different shapes with 3 squares and write the area and perimeter in the table on the next page.

Shape	Area	Perimeter
1	$3cm^2$	8cm
2	$3cm^2$	8cm
3	$3cm^2$	10cm
4	$3cm^2$	11cm
5	$3cm^2$	10cm
6	$3cm^2$	13cm
7	$3cm^2$	11cm
8	$3cm^2$	12cm
9	$3cm^2$	10cm
10	$3cm^2$	13cm
11	$3cm^2$	12cm
12	$3cm^2$	12cm
13	$3cm^2$	11cm
14	$3cm^2$	12cm
15	$3cm^2$	13cm
16	$3cm^2$	10cm
17	$3cm^2$	12cm
18	$3cm^2$	8cm

What have you found out?

They all have the same area, but the perimeter varies. The more whole squares the lower the perimeter.