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.

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Burning Up!

BASELINE CHECK:

1. Calculate the following:

   a) 17.3 + 2.59 (1)

   b) 0.49 + 44.7 (1)

2. Calculate the following:

   a) 23.8 – 9.4 (1)

   b) 44 − 37.6 (1)

3. Calculate 13.2 × 8.7 (3)

4. a) Divide 186 by 12 (1)

   b) Divide 72.5 by 25 (1)

5. Calculate the following:

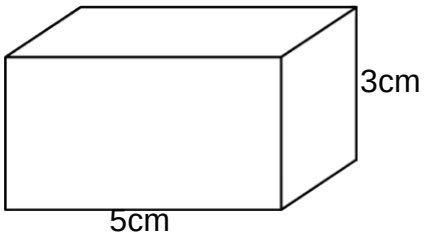
a) 2^3 (1)

b) $\sqrt{144}$ (1)

6. a) Write 65 as a fraction of 200, leaving your answer in its simplest form. (2)

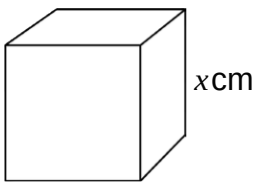
b) Write 25 as a percentage of 500. (2)

7. a) Calculate the total area of all the rectangular faces of the cuboid. (3)



cm²

b) A cube has a volume of 216cm³. Calculate the value of x. (2)



cm

8. Fully simplify $2x + 3y + 4x - 6y$ (2)

9. Simplify the expressions:

a) $a + 2b + 2a - 4b$ (2)

b) $3x \times 4y$ (2)

10. Calculate the following:

a) $3+2\times4$ (1)

b) $(4-2)\div2$ (1)

c) Simone calculates the answer to $5 + 6 \times 3$ as 33. Is she correct? Explain your reasoning. (2)

11. A bag contains red, blue and yellow counters in the ratio 2:3:5

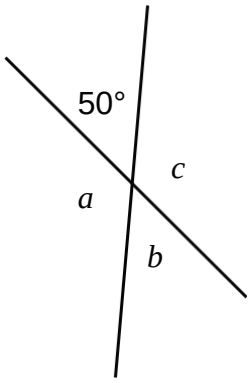
a) What fraction of the counters are red? (1)

b) 9 of the counters are blue. How many of the counters are yellow? (2)

c) How many counters are in the bag? (1)

12. The cost of 6 apples is £1.20. What is the cost of 4 apples? State the units of your answer. (2)

13. Calculate angles a, b and c. Explain your reasoning for each letter. (6)



Angle a:

Reason:

Angle b:

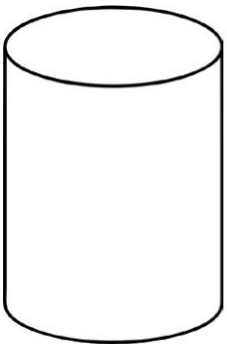
Reason:

Angle c:

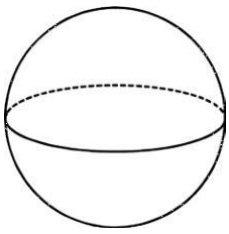
Reason:

14. Name the following shapes:

a) (1)



b) (1)



15. The table shows the number of goals scored in a football match by Twinkl FC over five weeks.

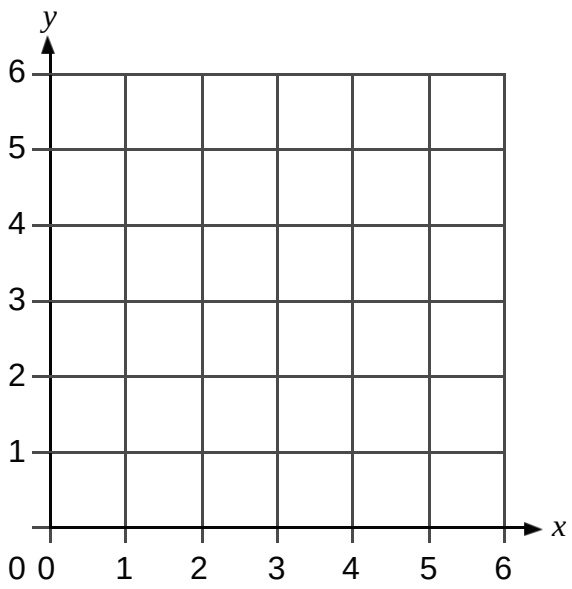
Week	Goals Scored
1	15
2	5
3	6
4	8
5	7

a) In which week was the highest number of goals scored? (1)

b) What was the mean average number of goals scored per week? (2)

c) Calculate the range of the number of goals scored. (1)

16. Plot the equation $x + y = 5$ on the grid below. (2)



17. Janet says that $5 + 3 \times 8$ equals 29. Hamid states that it equals 64.
Who is correct? You must give a reason for your answer. (2)

18. The cost of cinema tickets is given below.

Adult	£5.50
Child	£3.25
Family (2 adults, 2 children)	£16

a) Calculate the total cost in pounds for 1 adult and 2 children. (1)

£ _____

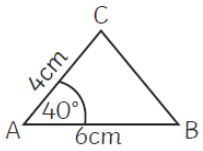
b) How much would a family consisting of 2 adults and 2 children save by buying the family ticket instead of individual tickets? (2)

£ _____

What would be the cheapest way for 5 adults and 4 children to attend the cinema? You must write down which tickets you have selected and the total cost in pounds. (2)

£ _____

19. Construct an accurate triangle, ABC, with the dimensions as shown in the diagram. (3)



Three chillies ANSWERS

1.		**2 marks total**
a)	19.89	1 mark
b)	45.19	1 mark
2.		**2 marks total**
a)	14.4	1 mark
b)	6.4	1 mark
3.		**3 marks total**
	114.84 11 484 seen with the decimal point in any position. 924 or 1056 seen.	3 marks or 2 marks or 1 mark
4.		**2 marks total**
a)	15.5	1 mark
b)	2.9	1 mark
5.		**2 marks total**
a)	8	1 mark
b)	12	1 mark
6.		**4 marks total**
a)	$\frac{13}{40}$ $\frac{65}{200}$	2 marks or 1 mark
b)	5% 0.05	2 marks or 1 mark
7.		**5 marks total**
	$62cm^2$ Any two of 30, 12 or 20. One of 30, 12 or 20.	3 marks or 2 marks or 1 mark
	6cm $\sqrt[3]{216}$	2 marks or 1 mark

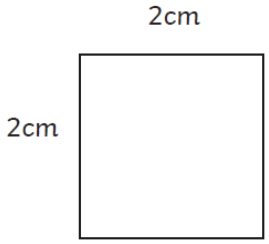
8.		**2 marks total**
	$6x - 3y$ One correct term.	2 marks or 1 mark
9.		**4 marks total**
a)	$3a - 2b$ One correct term.	2 marks or 1 mark
	$12xy$ 3×4	2 marks or 1 mark
10.		**4 marks total**
a)	11	1 mark
b)	1	1 mark
c)	Simone is incorrect. (1 mark) She added before multiplying, resulting in 11×3. (1 mark) OR the correct answer is $5 + 18 = 23$ (Just stating BIDMAS is not enough for this mark.)	1 mark 2 marks or 2 marks
11.		**4 marks total**
a)	$\frac{2}{10}$ or $\frac{1}{5}$	1 mark
b)	15 $9 \div 3 = 3$	2 marks or 1 mark
c)	30	1 mark
12.		**2 marks total**
	£0.80 or 80p $120 \div 6 = 20$ or $1.20 \div 6 = 0.20$	2 marks or 1 mark
13.		**6 marks total**
	Angle a = 130°. Angles on a straight line add up to 180° (or 180 – 50 = 130). Angle b = 50°. Vertically opposite angles are equal. Angle c = 130°. Angles about a point add up to 360°, or vertically opposite angles are equal. Or other valid reasons.	1 mark for the angle and 1 for the reason in each case.

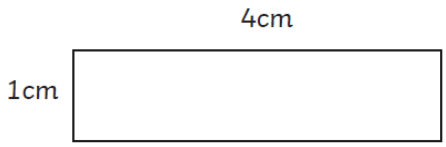
Three chillies

Investigating Perimeter and Area 3

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

Using only sides of whole centimetres there are 2 rectangles with an area of $4cm^2$.





What is the perimeter of each rectangle?

Shape 1: Perimeter: _____ cm

Shape 2: Perimeter: _____ cm

What about rectangles with an area of $16cm^2$?

You do not need to draw the rectangles to scale. Simply write the lengths of the sides.

Shape	Area	Perimeter

What do you notice?

_____

_____

A farmer wants a rectangular pen with an area of $36m^2$ for some chickens. What would be the best shape for the pen, which uses the least amount of fence? Show the answer by drawing all the pens with sides of whole metres.

Shape	Area	Perimeter

What do you notice?

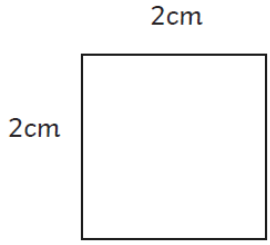
Challenge

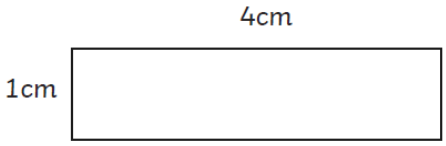
Try other areas. Think about which areas will give a number of rectangles with lengths of whole centimetres.

Three chillies ANSWERS

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

Using only sides of whole centimetres there are 2 rectangles with an area of $4cm^2$.





What is the perimeter of each rectangle?

Shape 1: Perimeter: **8** cm

Shape 2: Perimeter: **10** cm

What about rectangles with an area of $16cm^2$?

You do not need to draw the rectangles to scale. Simply write the lengths of the sides.

Rectangles of the following sizes:		
Shape 1	**Shape 2**	**Shape 3**
4cm x 4cm	**2cm x 8cm**	**1cm x 16cm**

Shape	Area	Perimeter
1	**$16cm^2$**	**16cm**
2	**$16cm^2$**	**20cm**
3	**$16cm^2$**	**34cm**

What do you notice?

All of the shapes have the same area, but the perimeters are different.

A farmer wants a rectangular pen with an area of $36m^2$ for some chickens. What would be the best shape for the pen, which uses the least amount of fence? Show the answer by drawing all the pens with sides of whole metres.

Rectangles of the following sizes:

Shape 1	Shape 2	Shape 3
6cm x 6cm	**4cm x 9cm**	**3cm x 12cm**
Shape 4	Shape 5	
2m x 18m	**1m x 36m**	

Shape	Area	Perimeter
1	**$36m^2$**	**24m**
2	**$36m^2$**	**26m**
3	**$36m^2$**	**30m**
4	**$36m^2$**	**40m**
5	**$36m^2$**	**74m**

What do you notice?

All of the shapes have the same area, but the perimeters are different.

Challenge

Try other areas. Think about which areas will give a number of rectangles with lengths of whole centimetres.