Year 6 SATs 'Greater Depth' Pack 5 **Answers**

Activity 1.1 Talk Maths

The superhero flags have been enlarged by the following scale factors:

	Scale Factor of 2	**Scale Factor of 3**	**Scale Factor of 1.5**	**Extra Challenge Scale Factor of 0.2**
8m	16m	24m	12m	6.4m
5m	10m	15m	7.5m	4m
2.5m	5m	7.5m	3.75m	2m
4.5m	9m	13.5m	6.75m	3.6m

Activity 1.2 Guided Maths

1. The simplified ratio of the parallelogram is 2:5.
2. Ensure that the children give the answer in kilograms. The correct answer is 0.9kg (900 grams).
3. Ensure the children recognise that the model of the statue has dimensions that are one tenth of the original (5 metres reduced to 0.5 metres). The width of the model is one tenth of 1.3m which is 13cm.

Activity 1.3 Independent Maths

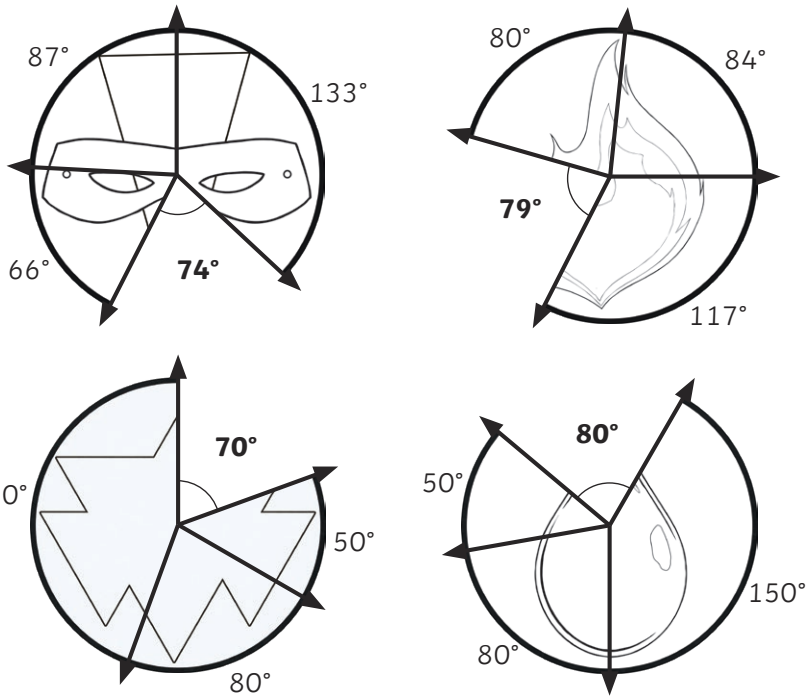
1. 3:4
2. 1.26kg
3. 240cm

Assess and Review 1.4

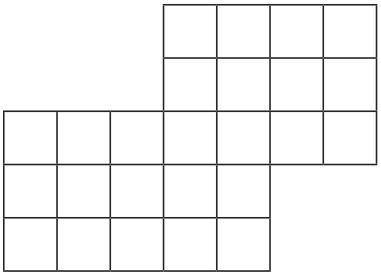
Encourage the children to notice that the child answering the question has not enlarged the length of the triangle two and a half times, instead they have just added 2.5cm onto the length. The correct measurement of the enlarged length is 9cm multiplied by 2.5 which is 22.5cm.

Activity 2.1 Talk Maths	1. True = (13 × 4) + 18 = 70 2. False = (2 × 15) + 20 = 70 The correct answer is 50. 3. True = (5 × 12) + 10 = 70 4. False = 10 + (4 × 5) = 70 The correct answer is 30. 5. True = 10 + (10 × 6) = 70
Activity 2.2 Guided Maths	1. 350 × 5 - 350 = 1,440 (1,240 - 900) ÷ 100 = 3.4 2. 200 - (24 × 7) > (11× 11) - (15 × 7) 32 16 200 - (18 × 7) = 200 - (14 × 9) 74 74 (245 ÷ 10) + (17 × 6) < 1,040 ÷ (72 ÷ 9) 126.5 130 (327 ÷ 10) + (12 × 7) > (252 ÷ 10) + (44.9 × 2) 116.7 115
Activity 2.3 Independent Maths	1. 450 × 4 - 450 = 1,350 (1,270 - 800) ÷ 100 = 4.7 2. 200 - (18 × 5) = (12 × 12) - (17 × 2) 110 110 150 - (16 × 6) < 195 - (15 × 9) 54 60 (245 ÷ 10) + (17 × 6) < 1,560 ÷ (96 ÷ 8) 130 126.5 130 (11 × 6) + (9 × 6) > (46 ÷ 2) + (9 × 8) 120 95
Assess and Review 2.4	Encourage the children to notice that the answer the child has given is incorrect because multiplying the number by two and then subtracting the same number would give you the number that you started with! The correct missing number is 3.

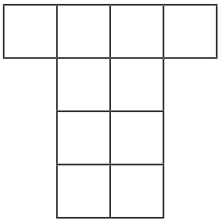
Activity 3.1 Talk Maths	The superheroes will need the following amounts of rolled oats: 20 snack bars = 352g 5 snack bars = 88g 12 snack bars = 211g 7 snack bars = 123g **Extra Challenge:** 20 snack bars = 211g of peanut butter 5 snack bars = 53g of peanut butter 15 snack bars = 127g of peanut butter 7 snack bars = 74g of peanut butter
Activity 3.2 Guided Maths	1. Encourage the children to substitute the given number of 225 into both sides of the ratio to find the two possible numbers. The two possible numbers are 375 and 135. E.g. If 225 replaces the 3 parts, find the value of one part by dividing 225 by 3 (75). The number on the right will be 75 multiplied by 5 (375). If 255 replaces the 5, find the value of one part by dividing 225 by 5 (45). The number on the left will be 45 multiplied by 3 (135). 2. Using the ratio 5:9, encourage the children to see that there are 14 parts in total. 210 divided by 14 equals 15, which gives the value of one part. Therefore, there are 135 carrots. 3. Encourage the children to identify that the enlargement of 12km to 246km is a scale factor of 20.5. This means that the distance will be 20.5cm on the map.
Activity 3.3 Independent Maths	1. 882 and 288 2. 441 carrots 3. 18.5cm
Assess and Review 3.4	Encourage the children to use reasoning skills to find the cost of 100g and then multiply this by four to find the price of 400g. The correct answer is £3.20.

Activity 4.1 Talk Maths	 **Extra Challenge** Ensure the children confidently recognise acute angles as less than 90 degrees, obtuse angles as greater than 90 degrees and reflex angles as greater than 180 degrees.
Activity 4.2 Guided Maths	1. Encourage the children to use reasoning skills about the properties of triangles and quadrilaterals to calculate the missing angles. Isosceles triangle = 124° Scalene triangle = 16° Parallelogram: Angle 2 =70°, Angle 3 = 110° and Angle 4 = 70° Isosceles trapezium: Angle 2 = 99°, Angle 3 = 81° and Angle 4 = 99° 2. Encourage the children to use reasoning skills about opposite angles and angles on a straight line to calculate the angles of the shaded triangle. Angles of the shaded triangle = 50°, 65° and 65°
Activity 4.3 Independent Maths	1. Isosceles triangle = 144° Scalene triangle = 12° Parallelogram: Angle 2 =62°, Angle 3 = 118° and Angle 4 = 62° Isosceles trapezium: Angle 2 = 105°, Angle 3 = 75° and Angle 4 = 105° 2. Angles of the shaded triangle = 68°, 52°, 60°
Assess and Review 4.4	Encourage the children to notice that the child answering the question has only subtracted one angle from 360°. To correctly calculate angle p, they need to first subtract 48 multiplied by 2 from 360° and then divide this answer by 2. The correct answer is 132°.

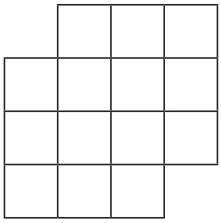
Activity 5.1
Talk Maths



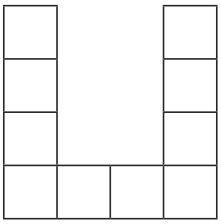
Perimeter = **24cm**
Area = **25cm²**



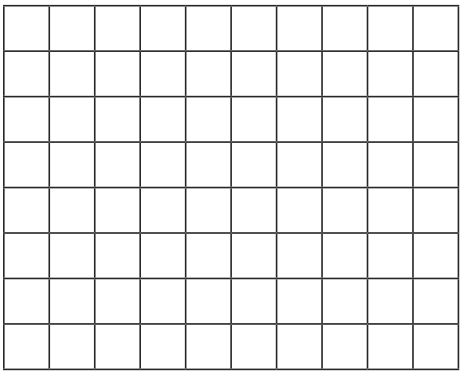
Perimeter = **16cm**
Area = **10cm²**



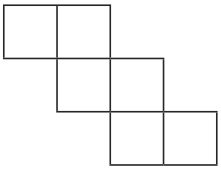
Perimeter = **16cm**
Area = **14cm²**



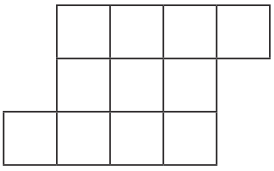
Perimeter = **22cm**
Area = **10cm²**



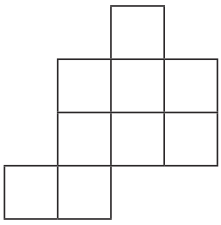
Perimeter = **36cm**
Area = **80cm²**



Perimeter = **14cm**
Area = **6cm²**



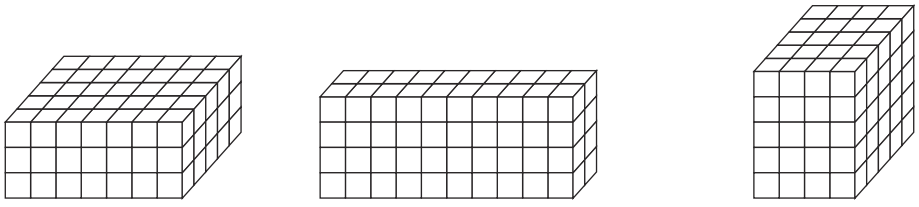
Perimeter = **16cm**
Area = **11cm²**



Perimeter = **16cm**
Area = **9cm²**

Activity 5.2
Guided Maths

1. Encourage the children to use the formula length × width × height to calculate the volume of the cuboid as 105cm^3.



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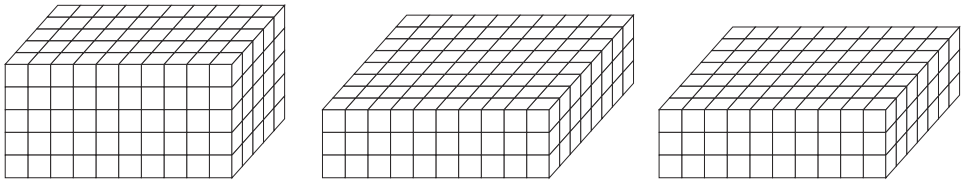
2. The area of the square tile equals 49cm^2 and the area of rectangular tile equals 36cm^2. Therefore, the difference in area is 13cm^3.

Activity 5.3 **Independent Maths**	1. The volume of the cuboid is 240cm^3. The second diagram has the same volume.  ☐ ☑ ☐ 2. The area of the square tile equals 64cm^2 and the area of rectangular tile equals 77cm^2. Therefore, the difference in area is 13cm^3.
Assess and Review 5.4	Encourage the children to notice that the child answering the question has only found the total of the lengths given. There is also a length of 3cm and 34cm to find the perimeter. The correct answer is 106cm.