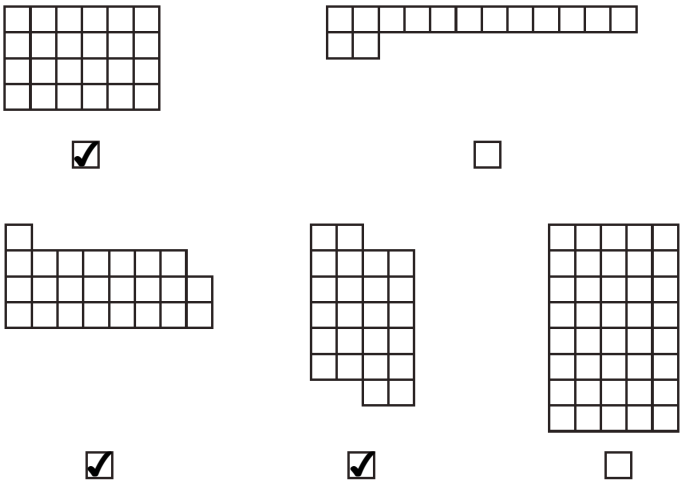
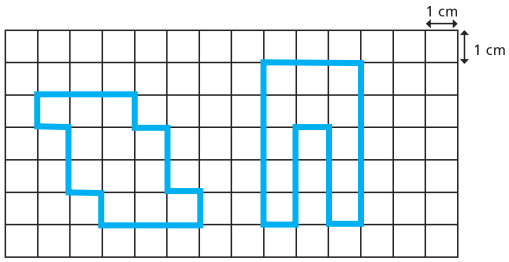
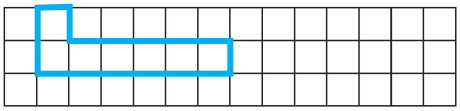
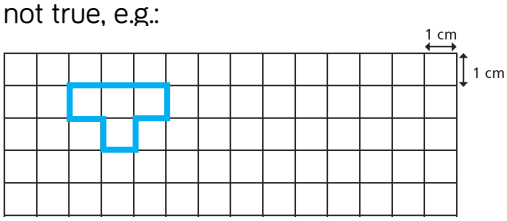
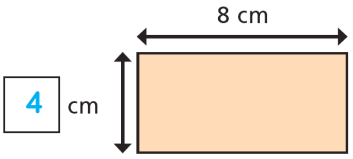
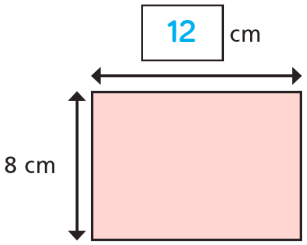
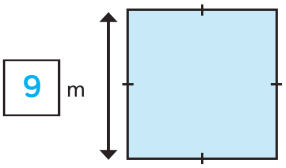
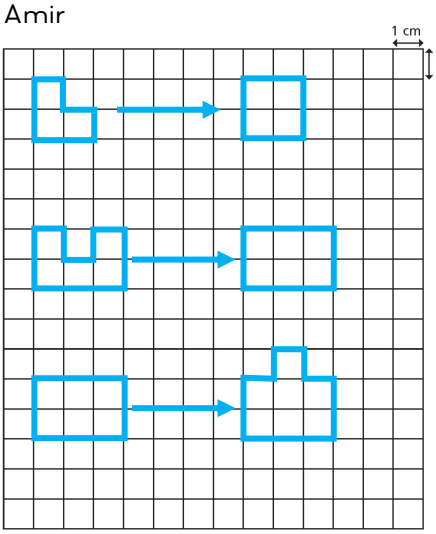
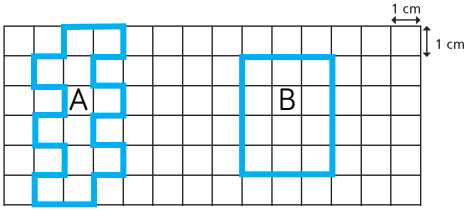
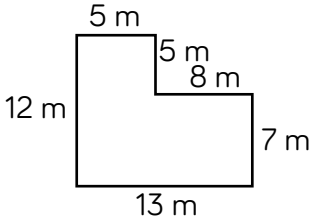
Y6 – Spring – Block 5 – Step 1 – Shape – same area Answers

Question	Answer
1	The length of the rectangle is 5 cm. The width of the rectangle is 4 cm. The total number of squares in the rectangle is 20 The area of the rectangle is 20 cm^2
2	a) 15 cm^2 b) 9 cm^2 c) 24 cm^2 The area in part c) is equal to the sum of the areas in parts b) ad c).
3	
4	a) child's drawings of a 1 × 8 rectangle and a 2 × 4 rectangle b) 1, 2, 4, 8 The sides of the rectangles with an area of 8 cm^2 are factor pairs of 8
5	three possible rectangles: 1 × 12 2 × 6 3 × 4 multiple possible rectilinear shapes, e.g.:  Children can count the number of squares in each other's shapes to check the areas.
6	No. A rectangle with sides of 3 cm and 8 cm has an area of 24 cm^2, but this shape is not a rectangle. It has a smaller area than the rectangle.

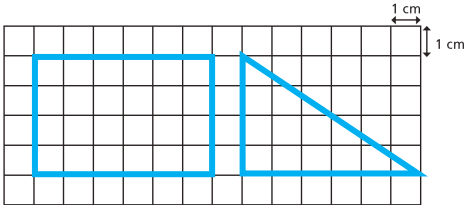
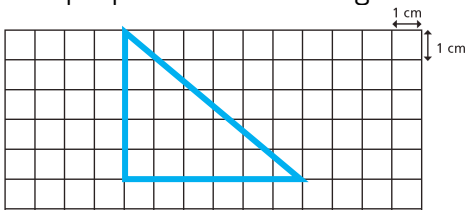
Question	Answer
7	a) 7 cm^2 b) multiple possible answers, e.g.:  Children can count the number of squares in each other's shapes to check the areas.
8	not true, e.g.:  The sides of the shape are all 1 cm or 3 cm, and its area is 4 cm^2

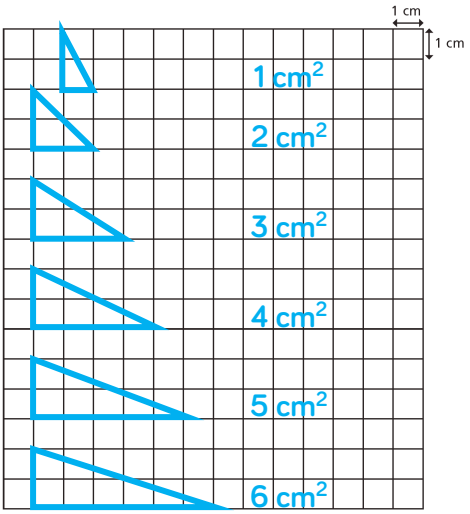
Y6 – Spring – Block 5 – Step 2 – Area and perimeter Answers

Question	Answer
1	**Area** is the amount of space **inside** a two-dimensional shape. It can be measured in units such as **cm²** or **m²** **Perimeter** is the distance **around** a two-dimensional shape. It can be measured in units such as **cm** or **m**.
2	a) perimeter = 20 cm area = 24 cm² b) perimeter = 20 cm area = 16 cm²
3	a)  area = 32 cm² perimeter = 24 cm b)  area = 96 cm² perimeter = 40 cm c)  area = 81 m² perimeter = 36 m
4	Shape A: area = 30 cm² perimeter = 22 cm Shape B: area = 29 cm² perimeter = 22 cm The shapes have the same perimeter but different area.

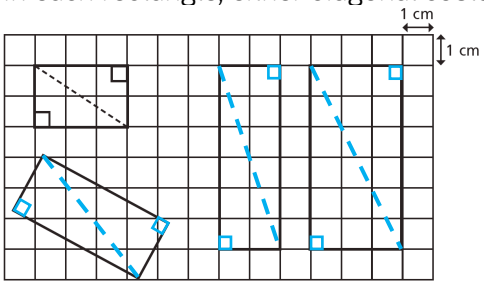
Question	Answer
5	Amir  area increased perimeter unchanged area increased perimeter decreased area increased perimeter increased
6	 The lengths of the sides of shape B are very close together.
7	a) multiple possible answers, e.g.:  b) 156 m^2 c) 24 m^2

Y6 – Spring – Block 5 – Step 3 – Area of a triangle (1) Answers

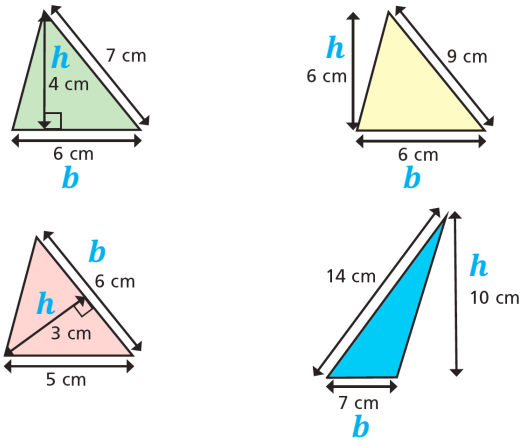
Question	Answer
1	The triangle has **6** full squares. The triangle has **4** half squares. The area of the triangle is **8** cm^2
2	a) 9 cm^2 b) 4 cm^2 c) 12.5 cm^2 d) 4 cm^2
3	a) 18 cm^2 b) 10.5 cm^2 c) 10.5 cm^2 They all involve estimating parts of squares.
4	a) 25 cm^2 12.5 cm^2 b) The area of the triangle is half the area of the square. multiple possible answers e.g.:  c) The area of a triangle is half the area of a rectangle with the same base and height.
5	multiple possible answers e.g.:  Any triangle with a base of 6 cm and a height of 5 cm, or a base of 5 cm and height of 6 cm, has an area of 15 cm^2
6	No. Her estimate is too high. A better estimate is 12 cm^2. Eva has counted all the squares that are partly shaded as whole squares.

Question	Answer
7	 With a height of 2 cm, increasing the base by 1 cm each time increases the area by 1 cm^2

Y6 – Spring – Block 5 – Step 4 – Area of a triangle (2) Answers

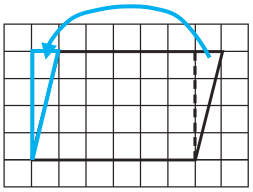
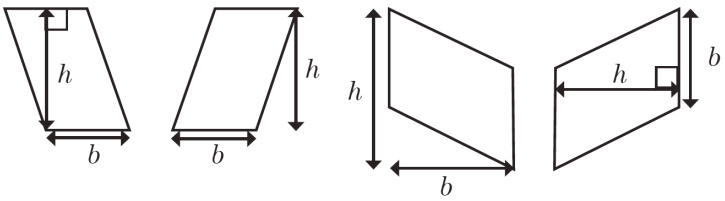
Question	Answer
1	In each rectangle, either diagonal could be drawn. 
2	a) 18 cm^2 9 cm^2 b) $\frac{1}{2}$ × base × height or $\frac{1}{2}$ × area of rectangle
3	triangle A = 5 cm^2 triangle B = 8 cm^2 triangle C = 10 cm^2
4	Yes. The base and perpendicular height must be at right angles to each other.
5	a) $\frac{1}{2} \times 8 \times 6 = 24$ cm^2 b) $\frac{1}{2} \times 15 \times 8 = 60$ mm^2 c) $\frac{1}{2} \times 5 \times 12 = 30$ cm^2
6	a) 12 cm^2 b) 10 mm^2 c) 60 m^2 d) 96 m^2
7	child's investigation of area The area increases by 0.5 cm^2 each time the base increases by 1 cm. If both the length and the width increase, the area goes up by a greater amount each time.

Y6 – Spring – Block 5 – Step 5 – Area of a triangle (3) Answers

Question	Answer
1	9 cm^2
2	a) 15 cm^2 b) 35 cm^2 c) 15 cm^2 d) 35 cm^2
3	Dora has used the side of the triangle instead of the perpendicular height. correct answer: 14 cm^2
4	
5	The side at the bottom of a triangle is the base. sometimes true The base can be any side of the triangle. The height must be perpendicular to the base used in the formula. The perpendicular height is equal to the vertical height. sometimes true If the base is horizontal, the height will be the vertical height.
6	a) 20 cm^2 b) 15 cm^2 c) 35 mm^2 d) 12 m^2 e) 7.5 m^2 f) 32 cm^2
7	50 cm^2
8	a) $x = 3$ cm b) $y = 24$ cm

Question	Answer
9	$\frac{1}{2} \times 6 \times 6 = 18\ cm^2$ $\frac{1}{2} \times 9 \times 4 = 18\ cm^2$ The area is the same.

Y6 – Spring – Block 5 – Step 6 – Area of a parallelogram Answers

Question	Answer
1	a) Move the triangle to create a rectangle:  b) The area of the rectangle is **24** squares. The area of the parallelogram is **24** squares.
2	a) 9 cm^2 b) 8 cm^2
3	a) He has used the sloping side of the parallelogram instead of the perpendicular height. b) 60 cm^2
4	 ☑ ☑ ☐ ☑ The height has been labelled as the base, and the base should be only as long as the side of the parallelogram.
5	a) 20 cm^2 b) 10 cm^2 c) 90 mm^2 d) 30 m^2 e) 18 m^2 f) 40 cm^2
6	a) 3 cm b) 300 cm
7	a) 24 cm^2 b) The rhombus has four sides, so it is a special quadrilateral, not a special triangle.

Y5 – Summer – Block 5 – Step 1 – What is volume? Answers

Question	Answer
1	a) They all use 5 cubes. If they get different answer, children can make the shapes and count the cubes. b) The cubes are arranged differently. c) 5 cubes
2	a) 3 cubes b) 4 cubes c) 5 cubes d) 4 cubes e) 9 cubes f) 6 cubes
3	No. There are 7 cubes visible, but there might be a hidden 8th cube, so it could be 7 or 8.
4	a) 10 cm^3 b) 6 cm^3
5	a) A 8 cubes B 18 cubes C 24 cubes b) A 8 cm^3 B 18 cm^3 C 24 cm^3
6	a) child's shapes made with 10 cubes b) child's drawings of their shapes c) 10 cubes d) All the shapes have the same volume, but the cubes are arranged differently.

Y6 – Spring – Block 5 – Step 7 – Volume – counting cubes Answers

Question	Answer
1	child's shapes using 7 cubes
2	a) 4 cubes b) 6 cubes c) 6 cubes d) 10 cubes
3	a) 8 cubes b) 18 cubes c) 24 cubes d) 10 cubes e) 15 cubes Because there are hidden cubes, children need to count how many cubes in a layer/slice and multiply by the number of layers/slices.
4	Teddy has not included the hidden cubes.
5	a) 5 cm^3 b) 8 cm^3 c) 12 cm^3 d) 9 cm^3
6	shape A volume of shape A = 30 cm^3, volume of shape B = 20 cm^3
7	child's shapes with volume of 24 cm^3

Y6 – Spring – Block 5 – Step 8 – Volume of a cuboid Answers

Question	Answer
1	a) 36 cm^3 b) multiple possible answers, e.g.: count the number of cubes in one layer and multiply by the number of layers c) 36 cm^3 d) They have the same volume, but the cuboid in part a) is made of centimetre cubes and the cuboid in part c) is a single shape.
2	a) 27 cm^3 b) 40 cm^3
3	a) 192 cm^3 b) 300 cm^3
4	a) 125 cm^3 b) 343 mm^3
5	4 m
6	150,000 cm^3
7	a) 32 cm^3 32 cm^3 They have the same volume. b) possible answers: 1 cm × 1 cm × 24 cm 1 cm × 2 cm × 12 cm 1 cm × 3 cm × 8 cm 1 cm × 4 cm × 6 cm 2 cm × 2 cm × 6 cm 2 cm × 3 cm × 4 cm
8	56 cm^3 Find the shape of the cuboid that is 6 cm × 8 cm × 2 cm and subtract the volume of the cuboid that is 4 cm × 5 cm × 2 cm