Mathletics

Geometry

Series C – Geometry

Contents

Series Author:

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Series C – Geometry

Page 1

What to do:

a by size

b Teacher check.

What to do next:

Answers will vary.

Page 2

1 Yes, they all have 3 sides.

2 No, some are ovals.

3 Yes, they both have 5 sides.

Page 3

What to do:

Same
- they have 2 sets of parallel lines
- they have 4 vertices
- they have 4 sides
- their opposite sides are equal

Different
- the rectangle has 2 short sides and 2 long sides
- the square's sides are all the same length

What to do next:

Teacher check.

Page 4

What to do:

a 2; Yes; No; Answers will vary.

b 1; No; No; Answers will vary.

Page 5

1 Teacher check.

2 Teacher check.

Page 6

What to do:

Answers will vary.

What to do next:

Answers will vary.

Page 7

1 Teacher check.

2 Teacher check.

3 8

Page 8

1

2
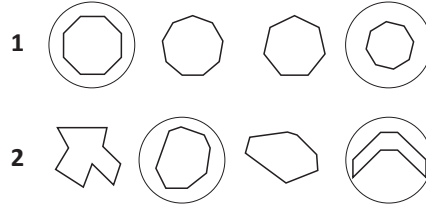
3 Teacher check.

Page 9

1 9

2 18

3 Teacher check.

Page 10

What to do:

Observe students.

What to do next:

Answers will vary.

Page 11

What to do:

Teacher check.

What to do next:

a yes

b yes

c yes

d yes

e no

f yes

Page 12

What to do:

a, b Teacher check.

Page 13

1a, b Teacher check.

2

triangle rectangle pentagon

hexagon square rhombus trapezium
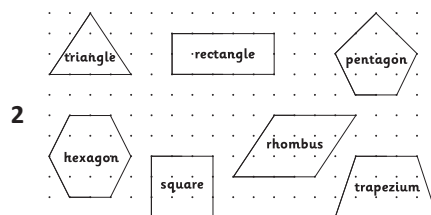
Page 14

What to do:

Teacher check.

Page 15

What to do:

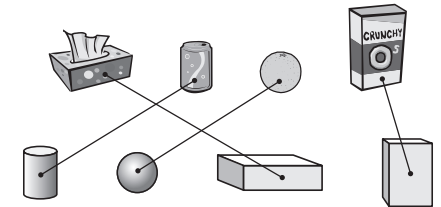Tissue box: <u>6</u> faces, <u>12</u> edges, <u>8</u> vertices

Soda can: <u>3</u> faces, <u>2</u> edges, <u>0</u> vertices

Orange: <u>1</u> face, <u>0</u> edges, <u>0</u> vertices

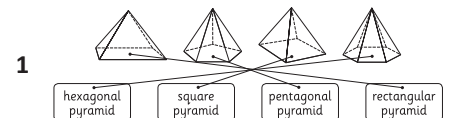Cereal box: <u>6</u> faces, <u>12</u> edges, <u>8</u> vertices

What to do next:

Page 16

1a rectangles; rectangular

  b hexagons; hexagonal

  c pentagons; pentagonal

2a <u>c</u> u <u>b</u> e

  b Answers will vary.

Page 17

1

hexagonal pyramid   square pyramid   pentagonal pyramid   rectangular pyramid

2a square, 4, 4

  b pentagonal, 5, 5

  c hexagonal, 6, 6

  d rectangular, 4, 4

Page 18

What to do:

Observe students.

What to do next:

Observe students.

Page 19

1 They all have curved faces.

Series C – Geometry

Page 19

2 Answers will vary and may include:
- the cone has a point
- the cylinder has 3 faces, the cone has 2 faces and the sphere has 1 face
- the sphere has no edges
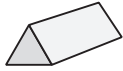
3a–c ◯ Answers will vary.

Page 20

What to do:

I have 6 faces. They are all rectangles. I am a kind of prism.

I am a prism. My 2 end faces are triangles. My other faces are rectangles.

I am a prism. I have 6 square faces.

I have 1 square base. I have 4 triangular faces that meet in an apex.

I can roll. I have 1 curved surface.

I can roll. 2 of my faces are circles. Cans are my shape.

Page 21

1a ⬠

b ?

c ⟫⟫→

d ✿

e ◇

f ♥

2a above

b next to

c below

Page 22

What to do:

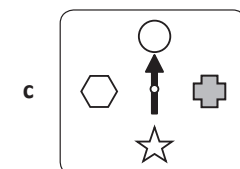Answers will vary.

Page 23

1a–f Teacher check.

2a Mr and Mrs Claus

b The Walshes

c The Smiths

d The Naders

Page 24

1a

b

c

d

e

f
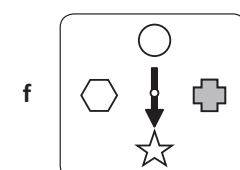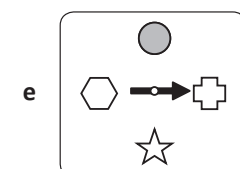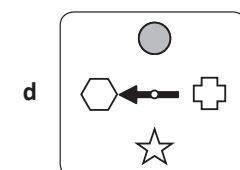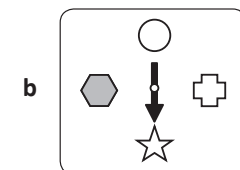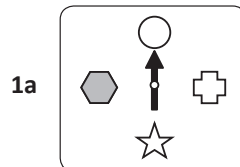
2 Teacher check.

3 Teacher check.

Page 25

1a
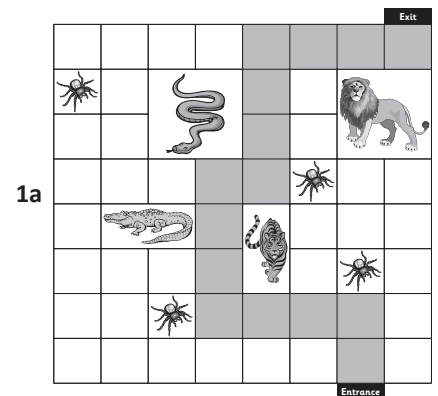
b Teacher check.

Page 26

What to do:

Teacher check.

Page 27

What to do:

Teacher check.

Page 28

What to do:

Teacher check.

What to do:

Observe students.

Page 29

1a quarter turn

b three-quarter turn

c half turn

d full turn

2a

b

Page 30

1a anti-clockwise

b clockwise or anti-clockwise

c anti-clockwise

d clockwise

Series C – Geometry

Page 31

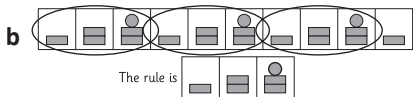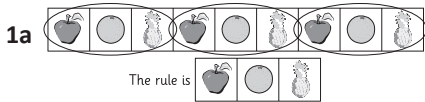**What to do:**

Observe students.

What to do next:

Observe students.

Page 32

1a

b

2a, b Answers will vary.

Page 33

1a

The rule is

b

The rule is

2 Answers will vary.

Page 34

1 Students should tick **a** and **c**.

2a

b

Page 35

1 Answers will vary.

2a–d Answers will vary.

Page 36

What to do:

a 3

b −3

What to do next:

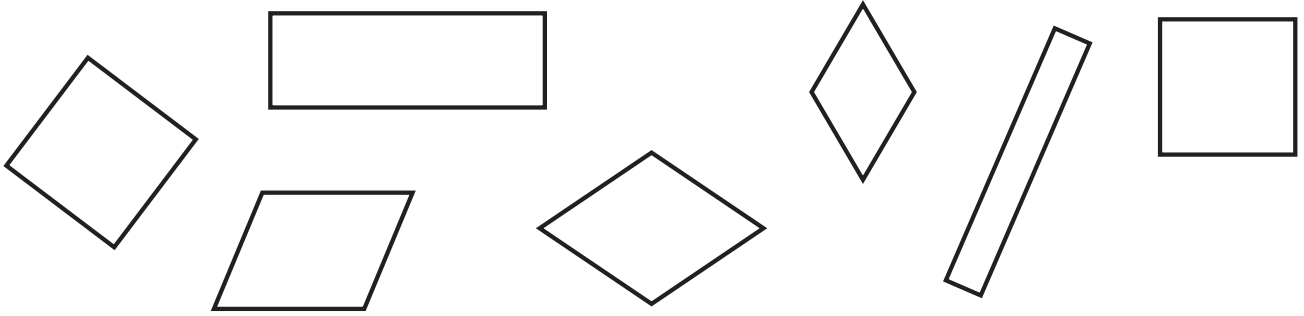Answers will vary.

Page 37

1a 1 ♡

b 2 ⬤

c 2, 1

2 Answers will vary.

2D shape

1 Write 'S' in the squares and 'R' in the rectangles.

2 How are squares and rectangles **the same**?
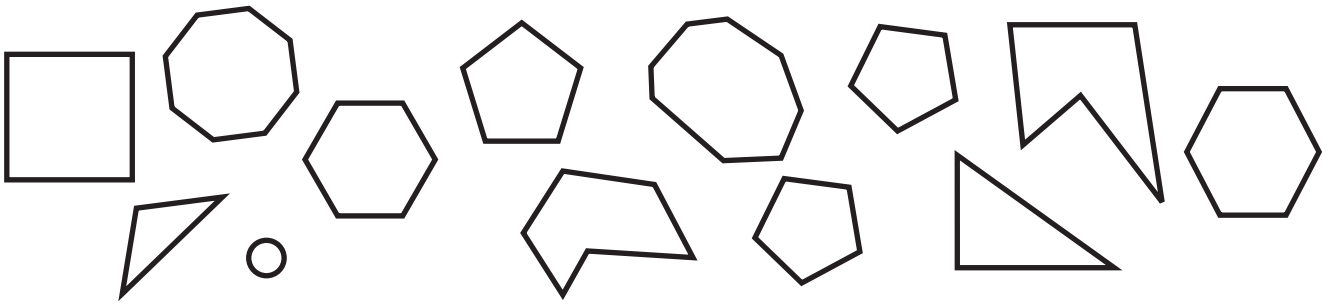How are they **different**?

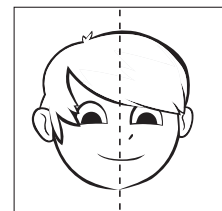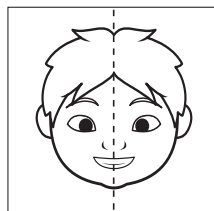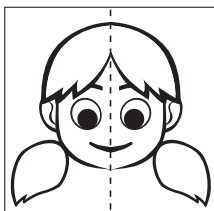| same	different

3 What is a triangle? Draw it and explain.

2D shape

4 Colour the pentagons red, the hexagons green and the octagons blue.

5 How many sides and vertices?

	Shape	Sides	Vertices
a	hexagon		
b	pentagon		
c	rectangle		
d	octagon		

6 Circle the symmetrical faces.

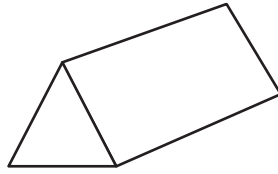| Skills and understandings	Not yet	Kind of	Got it
● Identifies squares, rectangles, triangles, pentagons, hexagons and octagons in different orientations			
● Describes properties of shapes using everyday language			
● Identifies sides and vertices of 2D shapes			
● Identifies line symmetry			

3D shape
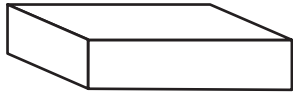
1 a Trace the **edges**.   **b** Loop the **vertices**.   **c** Colour the **faces**.
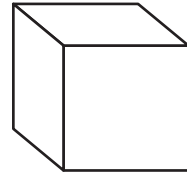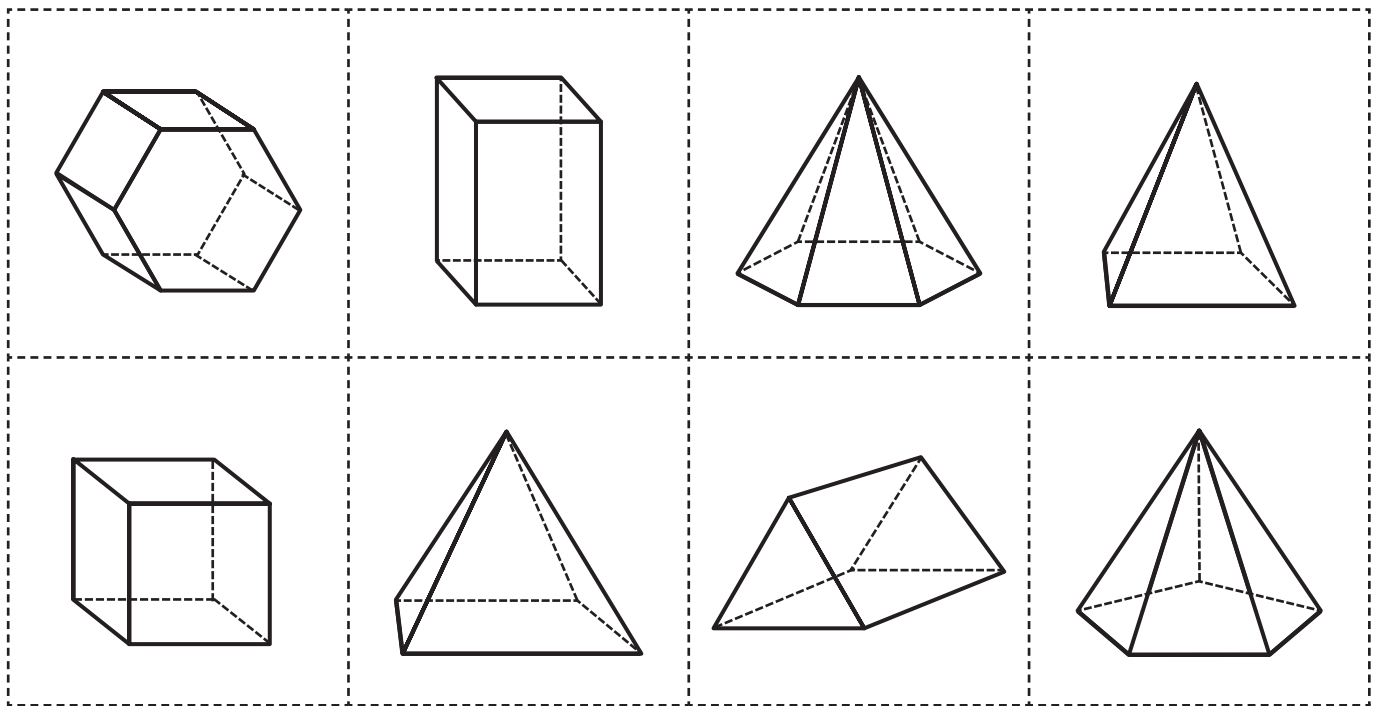
2 Find a ⬛. How many …

edges? ☐   vertices? ☐   faces? ☐

3 Colour the pyramids red. Colour the prisms green.

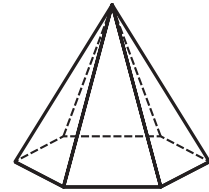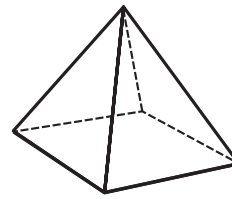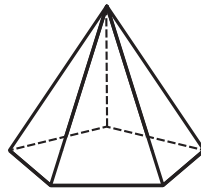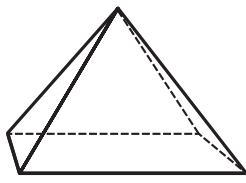**4** How are pyramids and prisms **different** from each other?

_____

3D shape

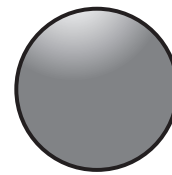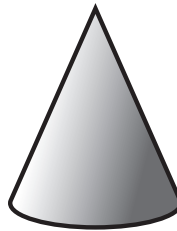**5** Draw lines to match the pyramids with their names.

| hexagonal pyramid | square pyramid | pentagonal pyramid | rectangular pyramid |

6 Draw lines to match the 3D shapes with their names.
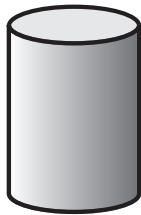
| sphere | cylinder | cone |

Skills and understandings	Not yet	Kind of	Got it
● Identifies faces, edges and vertices of 3D shapes			
● Identifies and compares pyramids and prisms			
● Names pyramids according to bases			
● Identifies spheres, cones and cylinders			

Position

1 Look at the map below.

a Write a set of directions to get from the library to the office.
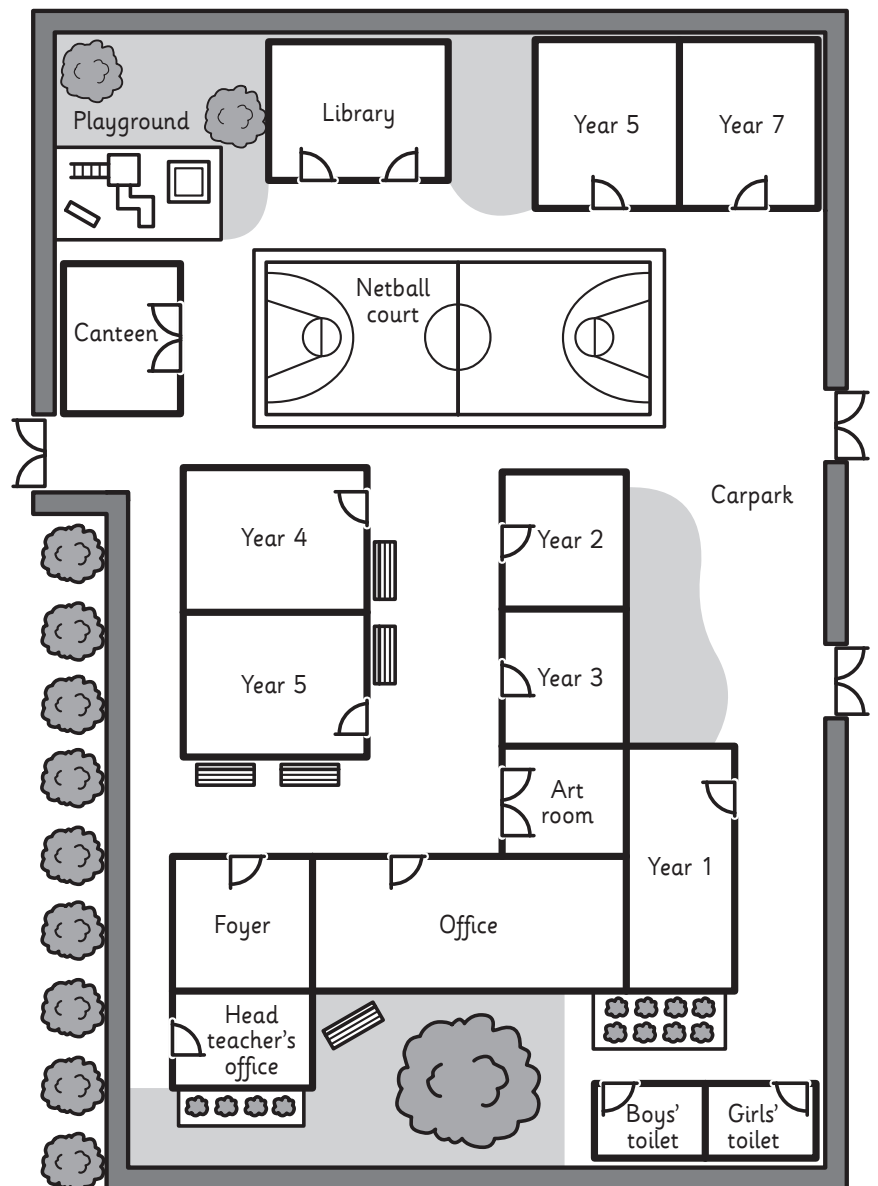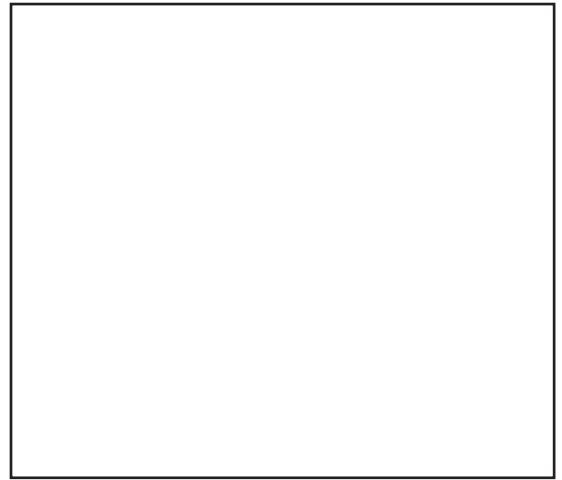

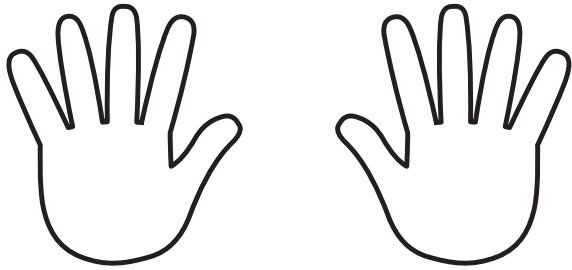**b** Draw the route you have chosen on the map.

Position

Name _____

2 Draw:

    a a circle in the **centre** of the box

    b a square **above** the circle

    c a triangle **below** the circle

    d a rectangle **next to** the circle

    e a star in the **top left hand** vertex

3 Colour the **left** hand **blue**.
Colour the **right** hand **red**.

4 Finish the descriptions of the turns made by the boat.
It starts in this position:

    a [ ] turn clockwise

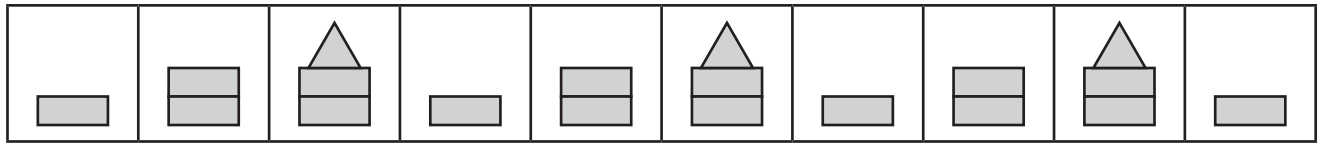   **b** [ ] turn clockwise or anti-clockwise

    c [ ] turn anti-clockwise

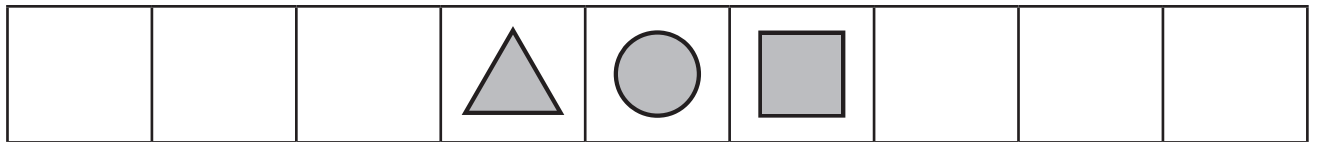| Skills and understandings	Not yet	Kind of	Got it
• Recognises and uses everyday language of position			
• Reads simple maps and draws routes			
• Identifies left and right and makes correct turns			
• Describes $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ turns, clockwise and anti-clockwise			

Patterns and rules

Name _____

1 What is the rule?

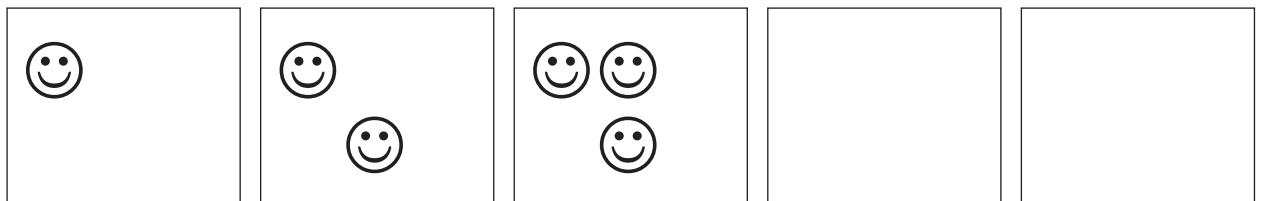

The rule is

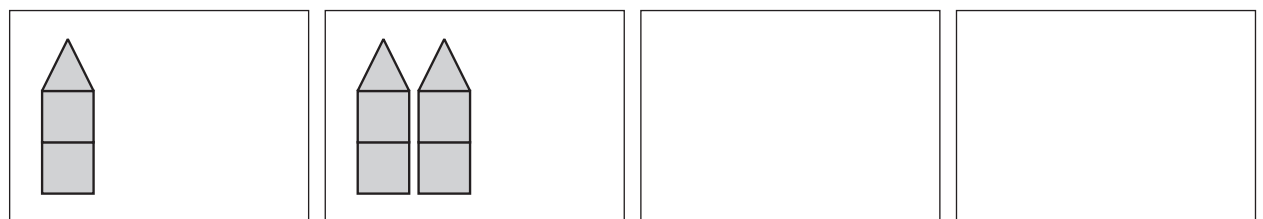**2** Continue this pattern both ways.

3 Find the rule and continue each growing pattern.

a

b

Skills and understandings	Not yet	Kind of	Got it
• Continues a pattern			
• Identifies a pattern rule			

Series C – Geometry – Student Progress Record

Name_____ Class_____ Date_____

What went well: _____

_____

_____

_____

What I need to improve: _____

_____

_____

_____

- ✂

Series C – Geometry – Student Progress Record

Name_____ Class_____ Date_____

What went well: _____

_____

_____

_____

What I need to improve: _____

_____

_____

_____

Series C – Geometry

ASSESSMENT ANSWERS

Pages 4–5

1 (shapes with labels R, S)
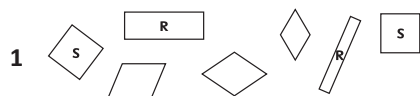
2 Answers will vary.

3 A shape with 3 sides and 3 vertices.

4 (shapes labelled B, G, R)

5a hexagon; 6; 6

b pentagon; 5 5

c rectangle; 4; 4

d octagon; 8; 8

6

Pages 6–7

1a

b

c

2 12; 8; 6

3 (shapes labelled G, G, R, R, G, R, G, R)
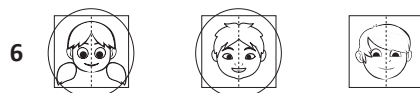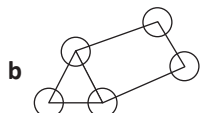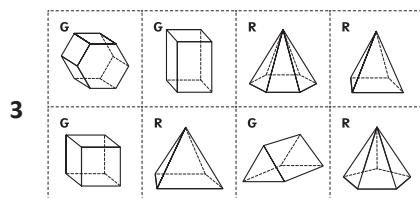
4 • a pyramid's sides come up to a point

• a prism has 2 end faces that are the same and all other faces are rectangles

• a pyramid's sides are triangular, except for the base
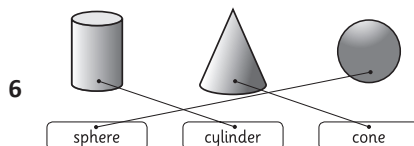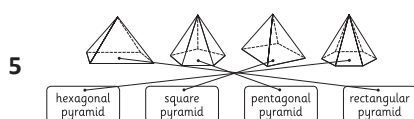
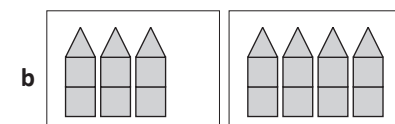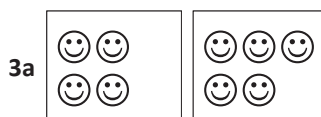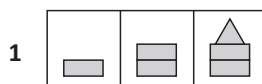**5** hexagonal pyramid | square pyramid | pentagonal pyramid | rectangular pyramid

6 sphere | cylinder | cone

Pages 8–9

1a, b Teacher check.

2a–d

or

3 blue   red
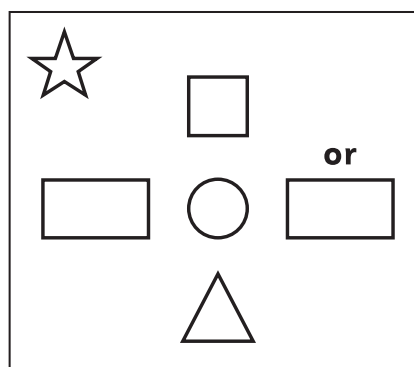
4a quarter

b half

c three-quarter

Page 10

1

2

3a

b

Series C – Geometry

Topic	Reference	Strand	Substrand	Objective
2D Shape	2G1a	Geometry	Properties of Shapes	Compare and sort common 2D shapes and everyday objects
2D Shape	2G2a	Geometry	Properties of Shapes	Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line
3D Shape	2G1b	Geometry	Properties of Shapes	Compare and sort 3D shapes and everyday objects
3D Shape	2G2b	Geometry	Properties of Shapes	Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces
3D Shape	2G3	Geometry	Properties of Shapes	Identify 2D shapes on the surface of 3D shapes, for example a circle on a cylinder and a triangle on a pyramid
Position	2P2	Geometry	Position and Direction	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
Patterns and Rules	2P1	Geometry	Position and Direction	Order and arrange combinations of mathematical objects in patterns and sequences