



Unit 16: Geometry – position and direction

Lesson 1: Describing position (I)

→ pages 126–128

- Cliff or hill
 - Woods
 - Moor
 - Cliff (accept moor or hill)
- Answers will vary; for example:
 - The camp is next to the cliff, close to the hill.
 - The cave is between the swamp and the pond, close to the sea.
 - The pond is between the cave and the hill.
 - The swamp to the left of the cave.
 - The moor in between the woods and the cliff.
 - The cliff is left of the camp.
- The line would go through the woods and the moor.
- No; the woods are between the cave and the moor but they are closer to the moor.
- Answers will vary; for example:
The woods are one square up from the moor.
The cave is two squares to the right of the swamp.
Using a grid makes it easier to describe where the places are because you can describe position using squares. It is also more accurate.

Reflect

Answers will vary; look for children explaining that maps provide a visual image for the locations of lots of places at once. Children should recognise that using squares or grids means that distances can be described using squares and it is easier to describe moving between the places on the map.

Lesson 2: Describing position (2)

→ pages 129–131

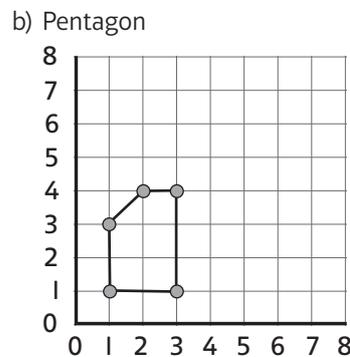
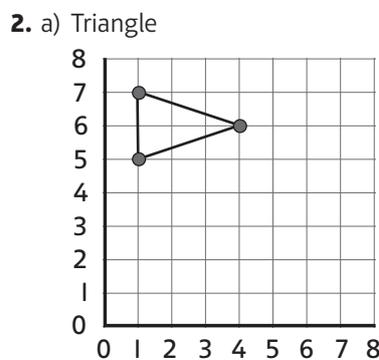
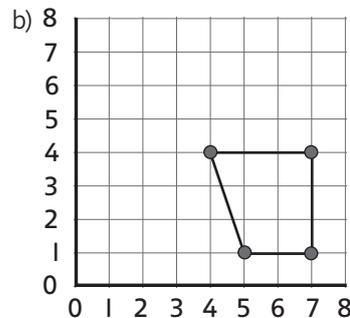
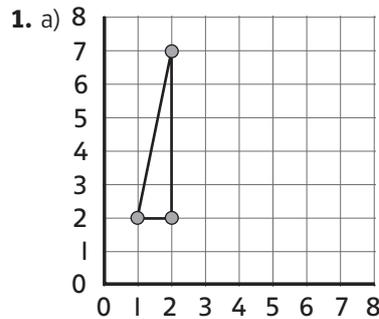
- The statue is at (7,4).
 - The other fence posts are at (4,6) and (6,6).
 - The other rose bush is at (3,3).
- (1,6), (0,6) and (0,3)
- No, Jamie has the coordinates the wrong way round. The gnome is at (5,3).
- Answers might vary between (8,5), (8,4) or (8,3).
- To the left of the house, in the bottom left corner.
- (0,6)
 - (1,3)
- (4,5) because it is not at the entrance to the shed (A), in the middle of the patio (B) or the path (C) or in the middle of the pond (E).

Reflect

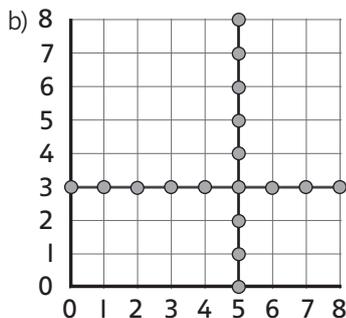
No, Ebo is incorrect because he has the directions the wrong way round; he needs to go 2 squares right and 4 squares up.

Lesson 3: Drawing on a grid

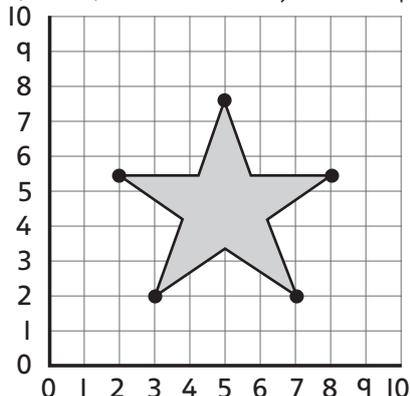
→ pages 132–134



3. a) Line 1: Horizontal line going through 3 on the vertical axis.
Line 2: Vertical line going through 5 on the horizontal axis.



4. a) and b) Answers will vary; for example:



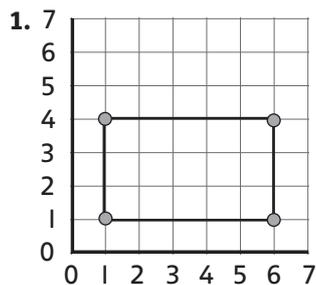
Coordinates: $(3,2)$, $(7,2)$, $(8,5\frac{1}{2})$, $(5,7\frac{1}{2})$, $(2,5\frac{1}{2})$

Reflect

This line will go through the 3 on the horizontal axis and is vertical. We know this because the first number, which we read along the horizontal axis, is always 3.

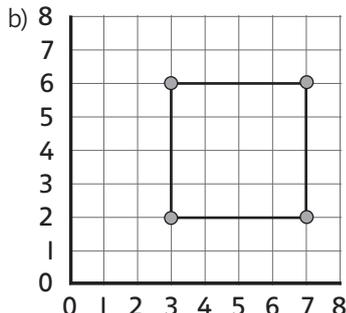
Lesson 4: Reasoning on a grid

→ pages 135–137



- (1,1)
- (6,1)
- (6,4)
- (1,4)

2. a) $(7,2)$, $(7,6)$ and $(3,6)$.



3. Answers will vary. Check children have drawn three more rectangles of same size, each with a vertex at $(4,4)$

- 4. a) $(2,9)$, $(8,9)$ and $(8,3)$.
- b) Order may vary:
 $(9,3)$, $(9,8)$ and $(2,8)$.
 $(7,3)$, $(7,10)$ and $(2,10)$.

Reflect

Answers will vary but should include symmetrical reasoning, understanding of the properties of shapes and addition.

Lesson 5: Moving on a grid

→ pages 138–140

- 1. a) Pier c) Rig
b) Turbine d) Harbour
- 2. Start → D → A → C → B → F → E
- 3. a) $(4,1)$ c) $(0,0)$
b) $(1,3)$ d) $(2,4)$
- 4. a) $(74,126)$ b) $(72,128)$
- 5. $(7,6)$, $(7,7)$, $(12,7)$, $(12,6)$

Reflect

Yes, if you know the coordinates at the start and end of a move you can tell whether you moved up or down and left or right. Explanations will vary; for example:

If the first number increases (from start to end), this means a move to the right. If it decreases, it means a move to the left. Likewise, if the second number increases (from start to end), this means a move upwards and. If it decreases, it means a move downwards.

Lesson 6: Describing a movement on a grid

→ pages 141–143

- 1. a) Andy goes 1 left, 2 down.
b) Danny goes 2 left, 1 up.
c) Andy goes 1 right, 2 up.
d) Andy goes 3 left, 1 down.
- 2. Instructions might be either way round:
 - a) 1 left, 3 down
 - b) 5 right, 1 up
 - c) 2 left, 2 up
 - d) 2 right, 2 down
 - e) 3 right, 4 up
 - f) 3 right, 0 up
- 3. Reena moved 2 right, 3 up.

**4.** Order might vary:

- 2 left, 1 up
- 1 left, 2 up
- 1 right, 2 up
- 2 right, 1 up
- 2 left, 1 down
- 1 left, 2 down
- 1 right, 2 down
- 2 right, 1 down

Reflect

To do the reverse movement, do the same number of moves in the opposite direction across and the same number of moves in the opposite direction up or down; for example: the reverse moves for 5 left, 2 up are 5 right, 2 down.

End of unit check**→ pages 144–146****My journal**

- 1.** Cards A and D will take you from (5,5) to (10,10) because 5 left and 10 right gives a total of 5 right, and 10 up and 5 down gives a total of 5 up. So, the total move is 5 right and 5 up.
- 2.** (4,5)

Power play

Grids will vary.