

WA5MMGTW6

Two-dimensional space and structures

Core + Challenge

NAPLAN-style

Grid References and Directions — Marking Key

I can use grid references, grid coordinates and compass directions to describe positions and pathways.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

A Warm up: 16 B Practise: 21 C Think it through: 10 D Challenge: 9 **Total: 56**

Gold shading in this key shows what the child should have shaded or drawn. Accept any correct arrangement unless the question fixes it.

A

Warm up *answers*

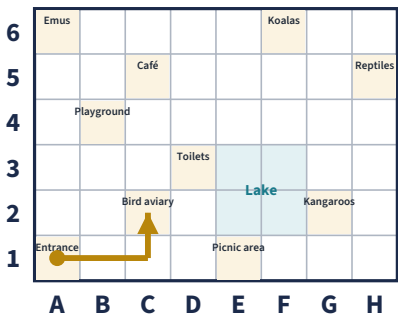
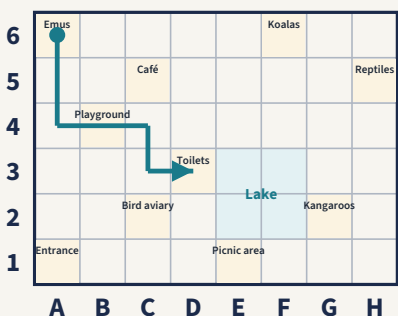
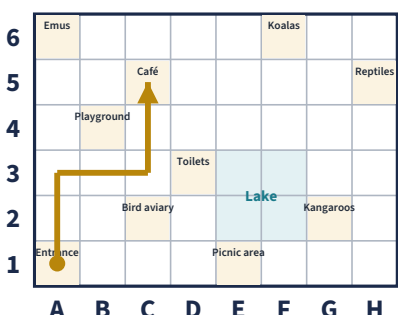
/ 16 marks

Q	Answer	Model answer / notes	Marks
1	C5	The Café is in column C, row 5.	1
2	F6	The Koalas is in column F, row 6.	1
3	G2	The Kangaroos is in column G, row 2.	1
4	B4	The Playground is in column B, row 4.	1
5	D3	The Toilets is in column D, row 3.	1
6	Emus	Column A, row 6.	1
7	Reptiles	Column H, row 5.	1
8	Picnic area	Column E, row 1.	1
9	north	A1 to A6: same column, higher row.	1
10	east	C5 to H5: same row, further along the letters.	1
11	south-west	D3 to C2: one square left and one down: diagonal.	1
12	north-east	B4 to C5: one square right and one up: diagonal.	1
13	(2, 5)	Across 2, up 5.	1
14	(4, 1)	Across 4, up 1.	1
15	(0, 3)	Across 0, up 3. It is on an axis.	1
16	(5, 0)	Across 5, up 0. It is on an axis.	1

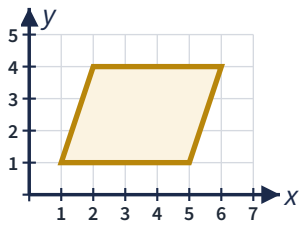
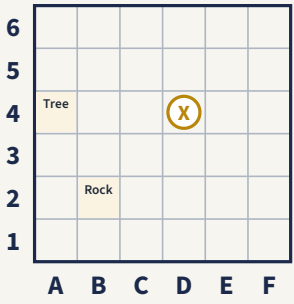
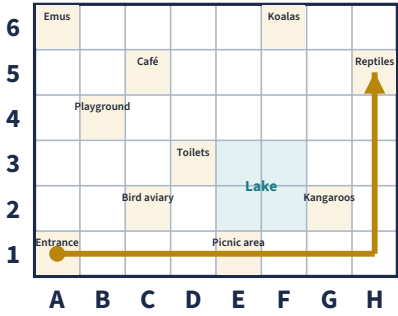
B

Practise *answers and working*

/ 21 marks

Q	Answer	Working / sample response	Marks
1	B3	South-west is one square left (west) and one square down (south). From C4: B3. <i>1 mark: B3.</i>	1
2	a) 250 m b) 200 m	a) C5 to H5 is 5 steps: C→D→E→F→G→H. $5 \times 50 = 250$ m. b) A1 to E1 is 4 steps. $4 \times 50 = 200$ m. <i>1 mark each.</i>	2
3	Bird aviary, C2	 East is to the right: A1 → B1 → C1. North is up: C1 → C2. C2 is the Bird aviary. <i>1 mark: path drawn correctly.</i> <i>1 mark: Bird aviary, C2.</i>	2
4	2 south, 2 east, 1 south, 1 east	 From A6: 2 squares south to A4, then 2 squares east to C4, then 1 square south to C3, then 1 square east to D3 (the Toilets). <i>3 marks: all four parts in the right order. 2 marks: three parts correct. 1 mark: one or two parts correct.</i>	3
5	Café (C5), facing north	 Forward 2 north: A3. Turn right: now facing east. Forward 2: C3. Turn left: facing north again. Forward 2: C5, the Café. <i>1 mark: path correct to C3.</i> <i>1 mark: Café, C5.</i> <i>1 mark: facing north.</i>	3

Grid References and Directions · WA5MMGTW6

Q	Answer	Working / sample response	Marks
6	Parallelogram	 The bottom and top sides are both 4 units long and flat. The slanting sides both go 1 across and 3 up, so they are parallel: a parallelogram. <i>2 marks: all four points plotted and joined (1 mark for two or three).</i> <i>1 mark: parallelogram.</i>	3
7	D4	 Clue 1: north-east of the rock (B2) is C3, D4, E5 or F6. Clue 2: east of the tree (A4) is row 4: B4 to F4. Only D4 fits both clues. <i>1 mark: D4.</i> <i>1 mark: shows the treasure marked on the map, or lists the squares for one clue.</i>	2
8	11 moves	 She must go 7 squares east (A to H) and 4 squares north (1 to 5): $7 + 4 = 11$. Any path that only goes east and north and misses the lake works, e.g. 7 east then 4 north. <i>1 mark: a correct path that avoids the lake.</i> <i>1 mark: 11 moves.</i> <i>1 mark: explains 7 east + 4 north.</i>	3
9	a) (1, 5) b) Yes	a) The fourth corner is above (1, 2) and level with (6, 5): (1, 5). b) Across 3 is between 1 and 6, and up 4 is between 2 and 5, so yes. <i>1 mark each.</i>	2

C Think it through *sample answers and criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	Yes	Facing south, turning a quarter turn to the left (anticlockwise) makes her face east. So east is on her left. Ruby is right. (If you face north, east is on your right.) <i>1 mark: Yes, agrees.</i> <i>1 mark: clear reason or sketch.</i>	2

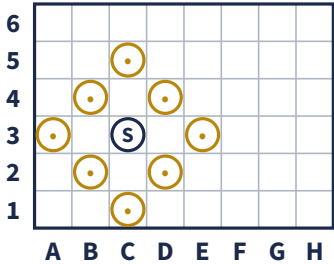
Grid References and Directions · WA5MMGTW6

Q	Answer	Working / sample response	Marks
2	False	A grid reference names a square (an area on the map). Coordinates name a point where two grid lines cross. So they do not describe the same thing. <i>1 mark: False.</i> <i>1 mark: explains square (area) versus point.</i>	2
3	Never	Always Sometimes Never Two left turns make a half turn. After a half turn you face the opposite way (north becomes south), so you never face the start direction. <i>1 mark: Never.</i> <i>1 mark: explains two quarter turns make a half turn.</i>	2
4	A turn to the left	A quarter turn clockwise is a turn to the right. Three quarter turns anticlockwise also end up facing the same way as one turn to the right. A turn to the left faces the opposite way to the other three. <i>1 mark: a turn to the left.</i> <i>1 mark: explains the other three end up facing the same way.</i>	2
5	Same finish (D3), different squares	Both finish at D3: each goes 3 east and 2 north in total. Maya passes B1, C1, D1, D2. Leo passes A2, A3, B3, C3. The paths are different. <i>1 mark: same finishing square, D3.</i> <i>1 mark: explains the squares passed are different.</i>	2

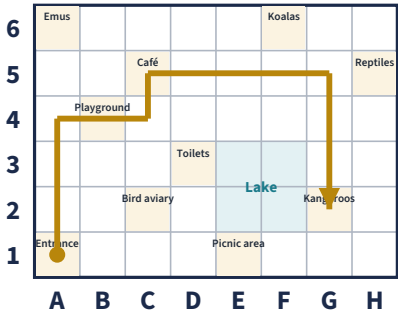
D

Challenge solutions and criteria

/ 9 marks

Q	Answer	Working / sample response	Marks
1	9 squares	 Every 2-move trip is: the same way twice (A3, E3, C1, C5), two ways at right angles (B2, B4, D2, D4), or there and back (C3). That is 9 squares. <i>1 mark each: the 4 straight-line squares; the 4 diagonal squares; C3 (there and back).</i>	3
2	Koalas (F6)	Undo the moves in reverse order, doing the opposite of each. From C5: 1 south → C4, then 3 east → F4, then 2 north → F6. He started at the Koalas, F6. <i>1 mark: reverses the order.</i> <i>1 mark: uses the opposite directions.</i> <i>1 mark: Koalas, F6.</i>	3

Grid References and Directions · WA5MMGTW6

Q	Answer	Working / sample response	Marks
3	Kangaroos (G2), facing south	 North 3: A4. Right (east) 2: C4. Left (north) 1: C5. Right (east) 4: G5. Right (south) 3: G2, the Kangaroos, facing south.	3

*1 mark: path correct to C5 (turns at A4, C4, C5, G5).
1 mark: Kangaroos, G2.
1 mark: facing south.*