

Reasoning and Problem Solving

Step 3: Describing Movement and Turns

National Curriculum Objectives:

Mathematics Year 2: (2P2) [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 \(clockwise and anti-clockwise\)](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Draw a cross to show the possible outcomes when following instructions using the language up, down, left, right, quarter turn, half turn, whole turn; involving single step instructions.

Expected Draw a cross to show possible outcomes when following instructions using the language up, down, left, right, forwards, backwards, quarter turn, half turn, three quarter turn, whole turn, clockwise, anti-clockwise; involving single step instructions.

Greater Depth Draw a cross to show possible outcomes when following instructions Using the language up, down, left, right, forwards, backwards, quarter turn, half turn, three quarter turn, whole turn, clockwise, anti-clockwise; involving single and multi-step instructions.

Questions 2, 5 and 8 (Problem Solving)

Developing Describe the movements and turns for an animal to reach their food in no more than a given number of steps.

Expected Describe the movements and turns for an animal to reach their food in no more than a given number of steps. Obstacles blocking the way.

Greater Depth Describe the movements and turns for an animal to reach their food in an exact number of steps. Obstacles blocking the way.

Questions 3, 6 and 9 (Reasoning)

Developing Explain which child's instructions will help them get out of a maze. Using the language up, down, left, right, quarter turn, half turn, whole turn; involving single step instructions.

Expected Explain which child's instructions will help them get out of a maze. Using the language up, down, left, right, forwards, backwards, quarter turn, half turn, three quarter turn, whole turn, clockwise, anti-clockwise; involving single step instructions.

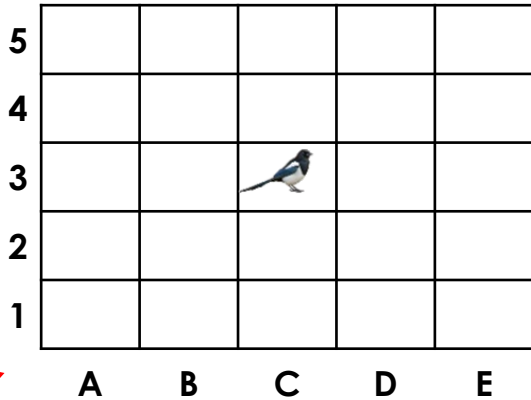
Greater Depth Explain which child's instructions will help them get out of a maze. Using the language up, down, left, right, forwards, backwards, quarter turn, half turn, three quarter turn, whole turn, clockwise, anti-clockwise; involving single and multi-step instructions.

More [Year 2 Position and Direction](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Describing Movement and Turns

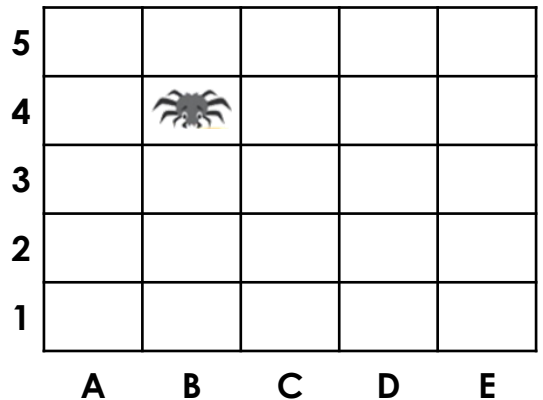
1a. The magpie has lost her coins. She knows that she turned a quarter, whole or half turn. Then flew forward two spaces. Draw a cross where her coins could be.



PS

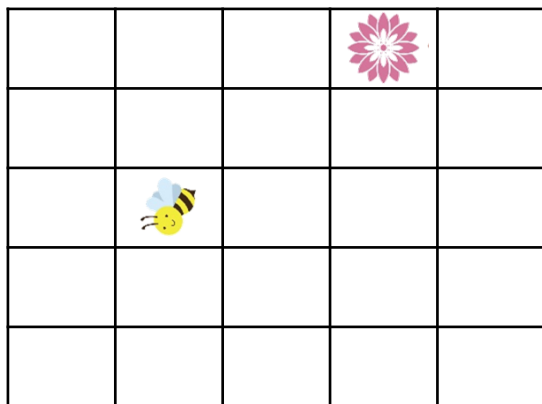
Describing Movement and Turns

1b. The spider has lost his web. He knows that he turned a quarter, whole or half turn. Then moved forward three times. Draw a cross where his web could be.



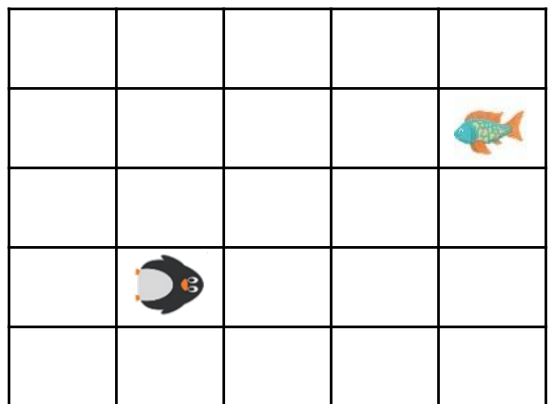
PS

2a. The bee is trying to get to the flower. She wants to find it in no more than 4 movements. Describe the route she could take, including the turns that she makes.



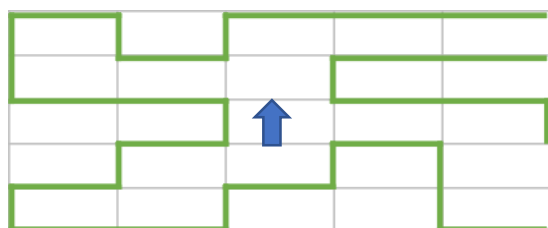
PS

2b. The penguin is trying to find his fish. He wants to find it in no more than 5 movements. Describe the route he could take, including the turns that he makes.



PS

3a. Fernando and Xin are lost in the maze, facing the direction of the arrow. Fernando thinks that they can get out if they go forwards and make right quarter turns. Xin thinks they can get out if they walk backwards 2. Who is correct? Give reasons for your answer.



R

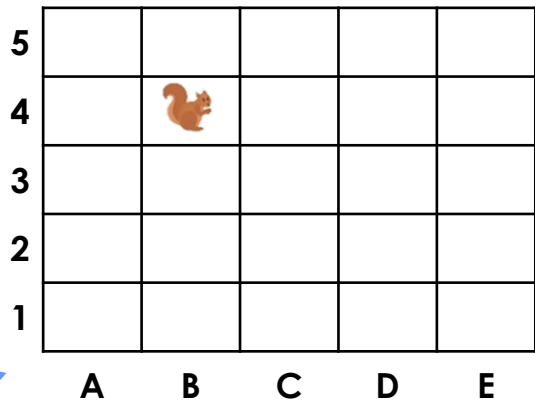
3b. Hamza and Lyla are lost in the maze, facing the direction of the arrow. Hamza thinks that they can get out if they step back 2. Then make 1 right quarter turn. Then step forward 1. Lyla thinks they can get out if they step back 2. Then step left 1. Who is correct? Give reasons for your answer.



R

Describing Movement and Turns

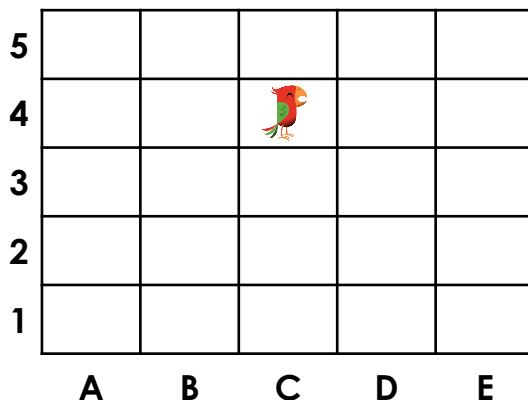
4a. The squirrel has lost his nut. He knows that he moved forward 3 times. Turned a quarter, half, three quarter or whole turn. Then walked forward once. Draw a cross where his nut could be.



PS

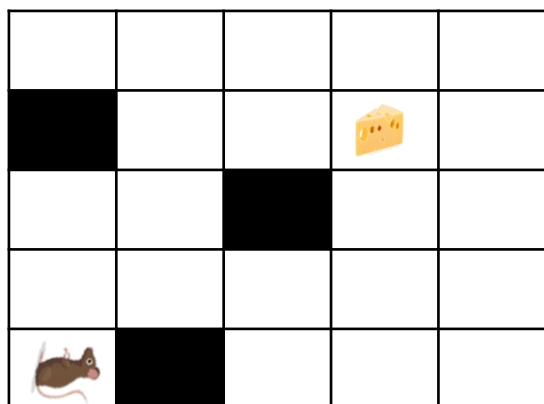
Describing Movement and Turns

4b. The parrot has lost her cracker. She knows that she moved backwards twice. Turned a quarter, half, three quarter or whole turn. Then walked forward once. Draw a cross where her cracker could be.



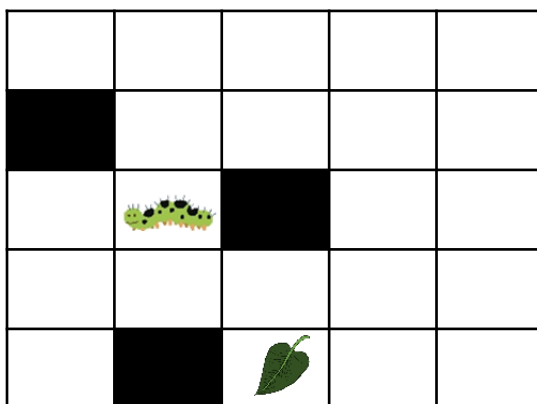
PS

5a. The mouse is trying to find her cheese. She wants to find it in no more than 7 movements. Describe the route she could take, including the turns that she makes.



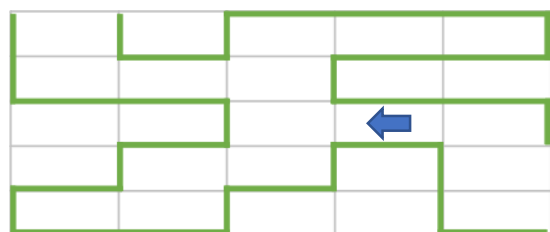
PS

5b. The caterpillar is trying to find his leaf. He wants to find it in no more than 5 movements. Describe the route he could take, including the turns that he makes.



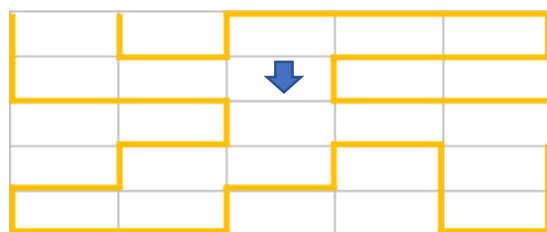
PS

6a. Katie and Fahad are lost in the maze, facing the direction of the arrow. Katie thinks that they can get out if they only move forwards and make left turns. Fahad thinks they can get out if they walk back 1, make 1 clockwise quarter turn and walk forward 2. Who is correct? Give reasons for your answer.



R

6b. Peter and Noah are lost in the maze, facing the direction of the arrow. Peter thinks that they can get out if they move left 2 and back 2. Noah thinks they can get out if they walk forward 1, make 1 anti-clockwise quarter turn and walk forward 3. Who is correct? Give reasons for your answer.

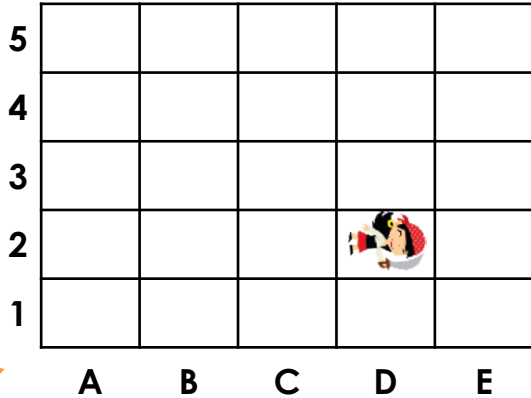


R

Describing Movement and Turns

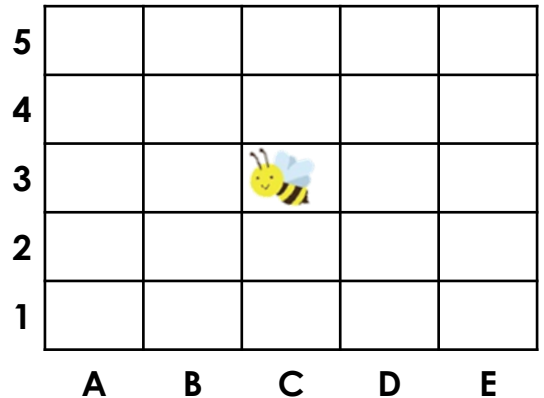
Describing Movement and Turns

7a. The pirate has lost her treasure. She knows that she moved backwards once, quarter turned anti-clockwise, walked left twice, turned and walked right once. Draw a cross where the treasure could be.



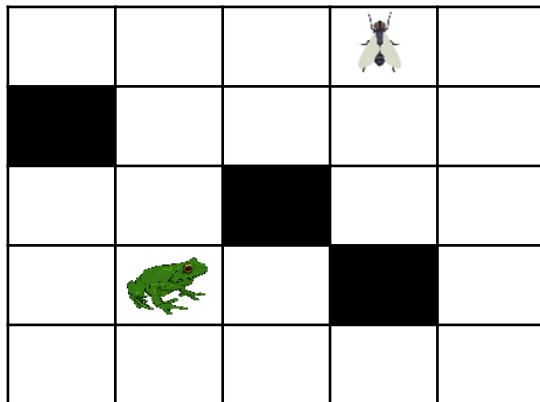
PS

7b. The bee has lost his honey. He knows that he moved forward once, quarter turned clockwise, walked forward once, turned and walked left. Draw a cross where his honey could be.



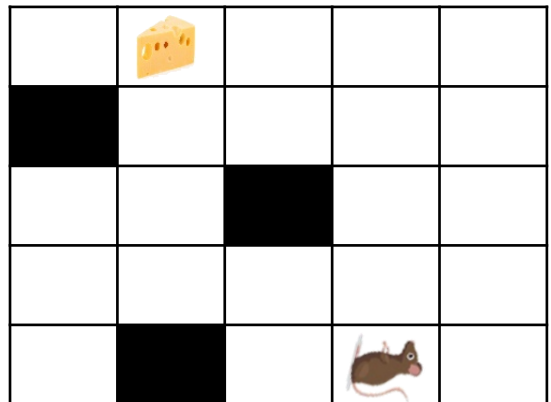
PS

8a. The frog is trying to catch a fly. She wants to catch it in exactly 7 movements. Describe the route she could take, including the turns that she makes.



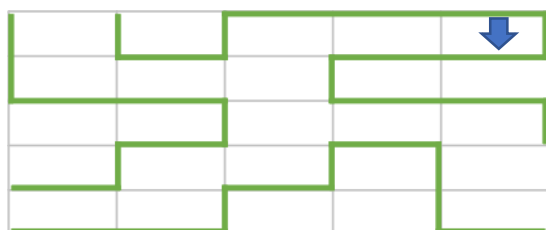
PS

8b. The rat is trying to find his cheese. He wants to find it in exactly 6 movements. Describe the route he could take, including the turns that he makes.



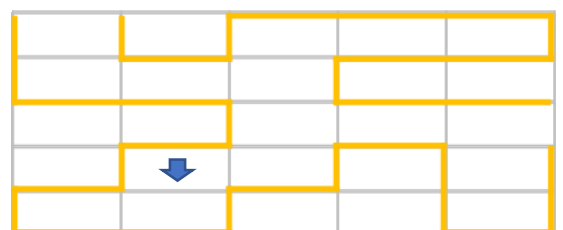
PS

9a. Molly and Jaxon are lost in the maze, facing the direction of the arrow. Molly thinks that they can get out if they only step forwards and right without turning. Jaxon thinks they can get out if make 1 clockwise quarter turn, step forward 1, make 1 half turn and step forward 3. Who is correct? Give reasons for your answer.



R

9b. Tia and Rhys are lost in the maze, facing the direction of the arrow. Tia thinks that they can get out if they step left 1, move back 2, step right 3 and back 2. Rhys thinks they can get out if they make 1 clockwise three-quarter turn, step forward 1, step left 1 and forward 3. Who is correct? Give reasons for your answer.



R

Reasoning and Problem Solving Describing Movement and Turns

Developing

- 1a. A3, C1, C5 or E3
- 2a. Various answers, e.g. The bee could make 1 left quarter turn, moves forward 2 and left 2.
- 3a. Fernando is correct as they will reach the top right exit. Xin is not correct as they would be blocked by the edge on the bottom right.

Expected

- 4a. Various answers, e.g. C4, D3, D5 or E4
- 5a. Various answers, e.g. The mouse could move forward 2, make 1 right quarter turn, move forward, 1, move left 1, move forward 2.
- 6a. Katie is correct because they could reach any exit as they could turn in any direction. Fahad is incorrect because they will walk into the edge.

Greater Depth

- 7a. B4, C1 or E5
- 8a. Various answers, e.g. The frog could make 1 anti-clockwise quarter turn, move forward 3, move right 1, move back 1, right 1 and forward 1.
- 9a. Molly is correct as they will reach the bottom left exit. Jaxon is incorrect because there is no gap at the top right.

Reasoning and Problem Solving Describing Movement and Turns

Developing

- 1b. B1 or E4
- 2b. Various answers, e.g. Penguin could move right 2, make 1 clockwise quarter turn and move right three times.
- 3b. Hamza is not correct as they would need to turn left rather than right. Lyla is correct as they will reach the exit on the right.

Expected

- 4b. A3, A5 or B4
- 5b. Various answers, e.g. The caterpillar could make a half turn clockwise, move right 1, move forward 1, make 1 quarter turn clockwise and move forward 1.
- 6b. Noah is correct because they will reach the exit on the right. Peter is incorrect because they cannot move left.

Greater Depth

- 7b. A4, B3, B5 or C4
- 8b. Various answers, e.g. The rat could move forwards 4, move left 1, move back 1, make 1 anti-clockwise quarter turn, move forward 1 and move right 1.
- 9b. Tia is incorrect because they would need to step right 2 times not 3 times. Rhys is correct as they will exit from the right side.