Reasoning and Problem Solving
Step 1: Describe Position

National Curriculum Objectives:

Mathematics Year 4: (4P3a) Describe positions on a 2-D grid as coordinates in the first quadrant.

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Identify the coordinate being described from given clues. Using up to 4 points, all points plotted on a 5 x 5 grid in the first quadrant. Explain your reasoning.
Expected Identify the coordinate being described from given clues. Using up to 6 points, all points plotted on a 10 x 10 grid in the first quadrant, using 1:1 scale. Explain your reasoning.
Greater Depth Identify the coordinate being described from given clues. Using up to 6 points, all points plotted on a 10 x 10 grid in the first quadrant, using varying scales with some points plotted between increments. Explain your reasoning.

Questions 2, 5 and 8 (Problem Solving)
Developing Correct mistakes made in writing coordinates in the first quadrant. Using up to 4 points, all points plotted on a 5 x 5 grid, using 1:1 scale.
Expected Correct mistakes made in writing coordinates in the first quadrant. Using up to 6 points, all points plotted on a 10 x 10 grid, using 1:1 scale.
Greater Depth Correct mistakes made in writing coordinates in the first quadrant. Using up to 6 points, all points plotted on a 10 x 10 grid, using varying scales with some points plotted between increments.

Questions 3, 6 and 9 (Problem Solving)
Developing Use given coordinates to work out the missing coordinates in the first quadrant. Using up to 4 points, all points plotted on a 5 x 5 grid.
Expected Use given coordinates to work out the missing coordinates in the first quadrant. Using up to 6 points, all points plotted on a 10 x 10 grid, using 1:1 scale.
Greater Depth Use given coordinates to work out the missing coordinates in the first quadrant. Using up to 6 points, all points plotted on a 10 x 10 grid, using varying scales with some points plotted between increments.

More Year 4 Position and Direction resources.

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Describe Position

1a. I'm thinking of a coordinate. The value of *x* is between 2 and 5 and the value of *y* is between 1 and 3. Which coordinate could it be? Explain your answer.

D

R

1b. I'm thinking of a coordinate. The value of *x* is between 2 and 4 and the value of *y* is between 3 and 5. Which coordinate could it be? Explain your answer.

D

R

2a. Caleb has written the coordinates for the points on the grid. Correct any mistakes he has made.

A = (1, 3) B = (4, 1) C = (5, 3)

D

PS

2b. Cara has written the coordinates for the points on the grid. Correct any mistakes she has made.

A = (4, 0) B = (3, 2) C = (5, 3)

D

PS

3a. A = (1, 1) C = (3, 4)
Use this information to work out the coordinates of points B and D.

D

PS

3b. B = (1, 3) D = (5, 1)
Use this information to work out the coordinates of points A and C.

D

PS

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Describe Position

4a. I'm thinking of a coordinate. The value of *x* is between 3 and 6 and the value of *y* is between 7 and 9. Which coordinate could it be? Explain your answer.

R

Describe Position

4b. I'm thinking of a coordinate. The value of *x* is between 2 and 4 and the value of *y* is between 3 and 6. Which coordinate could it be? Explain your answer.

R

5a. Brandon has written the coordinates for a rectangle. Correct any mistakes he has made.

A = (2, 2) B = (8, 2) C = (4, 8) D = (2, 5)

PS

5b. Susie has written the coordinates for a pentagon. Correct any mistakes she has made.

A = (3, 2) B = (2, 7) C = (7, 7)
D = (5, 9) E = (8, 3)

PS

6a. A = (2, 3) C = (7, 7)
Use this information to work out the coordinates of points B and D.

PS

6b. A = (3, 1)
Use this information to work out the coordinates of points B and C.

PS

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Describe Position

Describe Position

7a. I'm thinking of a coordinate. The value of *x* is between 3 and 6 and the value of *y* is between 1 and 6. Which coordinate could it be? Explain your answer.

GD R

7b. I'm thinking of a coordinate. The value of *x* is between 0 and 5 and the value of *y* is between 4 and 7. Which coordinate could it be? Explain your answer.

GD R

8a. Sally has written the coordinates for a hexagon. Correct any mistakes she has made.

A = (8, 18) B = (14, 14) C = (6, 14)
D = (3, 11) E = (8, 8) F = (2, 11)

GD PS

8b. Hashim has written the coordinates for a pentagon. Correct any mistakes he has made.

A = (6, 11) B = (2, 18) C = (16, 12)
D = (18, 12) E = (6, 13)

GD PS

9a. B = (45, 45) D = (5, 5)
Use this information to work out the coordinates of points A and C.

GD PS

9b. F = (15, 40) C = (45, 20)
Use this information to work out the points of the remaining coordinates.

GD PS

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Reasoning and Problem Solving
Describe Position

Developing

1a. C is the only coordinate that has a value of x between 2 and 5, and a value of y between 1 and 3.

2a. Caleb has read the y axis before the x axis on coordinate C, which should be (3, 5).

3a. B = (1, 4) and D = (3, 1)

Expected

4a. B and C are the only coordinates that have a value of x between 3 and 6, and a value of y between 7 and 9.

5a. Brandon has read the y axis before the x axis on coordinates B and D, which should be (2, 8) and (5, 2). He has misread coordinate C, as this should be (5, 8).

6a. B = (4, 7) and D = (9, 3)

Greater Depth

7a. C is the only coordinate that has a value of x between 3 and 6 and a value of y between 1 and 6.

8a. Sally has misread coordinate A, which should be (8, 19). She has read the y axis before the x axis on coordinates C and D, which should be (14, 6) and (11, 3).

9a. Grid increases in intervals of 5.
A = (20, 45) and C = (30, 5)

Reasoning and Problem Solving
Describe Position

Developing

1b. B is the only coordinate that has a value of x between 2 and 4, and a value of y between 3 and 5.

2b. Cara has read the y axis before the x axis on coordinate A, which should be (0, 4).

3b. A = (1, 1) and C = (5, 3)

Expected

4b. D is the only coordinate that has a value of x between 2 and 4 and a value of y between 3 and 6.

5b. Susie has read the y axis before the x axis on coordinates A and D, which should be (2, 3) and (9, 5). She has misread coordinate E, as this should be (7, 3).

6b. B = (5, 9) and C = (7, 1)

Greater Depth

7b. A and D are the only coordinates that have a value of x between 0 and 5, and a value of y between 4 and 7.

8b. Hashim has read the y axis before the x axis on coordinates C and E, which should be (12, 16) and (13, 6). He has misread coordinates A and D, which should be (5, 11) and (18, 13).

9b. Grid increases in intervals of 5.
A = (35, 45), B = (35, 30), D = (20, 5) and E = (10, 20)

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