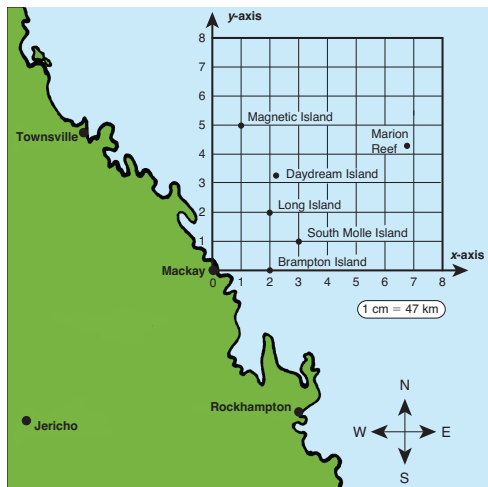


Student Guide

The map below shows one quadrant of the Cartesian coordinate system placed on top of a map.



Notice that the axes are named using letters of the alphabet.

1. What name is given to the horizontal axis?
2. What name is given to the vertical axis?

**Introduce Coordinates (SG pp. 250–253)
Questions 1–14**

1. x-axis
2. y-axis
3. (0, 0)
4. The arrows mean that the lines extend forever.
5. Magnetic Island
6. (2, 2)
7. Daydream Island
8. Mackay
9. (2, 0)
10. Marion Reef
- 11.* Rockhampton lies outside the coordinate system of the map. One way to describe Rockhampton’s location is in relation to Mackay, that is, about three units east and five units south of Mackay.
12. Mackay is located at the origin or (0, 0).

Student Guide - Page 250

The letters *x* and *y* are used to identify the axes of the Cartesian coordinates. On this map, the *x*-axis corresponds to east/west and the *y*-axis to north/south.

3. What is the point of **origin** on the map? In other words, what are the coordinates of the point where the horizontal and vertical axes meet?
4. What do the arrows at the end of the lines mean?

(1, 5) is an example of a location using the Cartesian coordinate system. The 1 tells you to move 1 space to the right (east). The 5 then tells you to move up 5 spaces (north).

5. What island is at location (1, 5) on the map?

Coordinates are always given by saying the *x*-coordinate first, then the *y*-coordinate. For the point (1, 5), the 1 is the *x*-coordinate and the 5 is the *y*-coordinate. (1, 5) is also called an **ordered pair**.

6. What are the coordinates for Long Island?
7. What is located near (2, 3)?
8. What is located at (0, 0)?
9. What are the coordinates for Brampton Island?
10. What is located near (7, 4)?
11. Find Rockhampton, Australia on the map. Describe the location of Rockhampton.
12. Find Mackay on the map. Mackay is a city on the eastern coast of Australia. Rockhampton is another city on the coast of Australia. How would you describe its location to someone?

We can expand our coordinate system to include Rockhampton by extending the *x*- and *y*-axes in both directions from (0, 0). By using negative as well as positive numbers, any point can be named in relation to the origin.

The first coordinate of an ordered pair tells us how much to move horizontally (right or left) starting at the origin. The second coordinate tells us how to move vertically (up or down).



Student Guide - Page 251

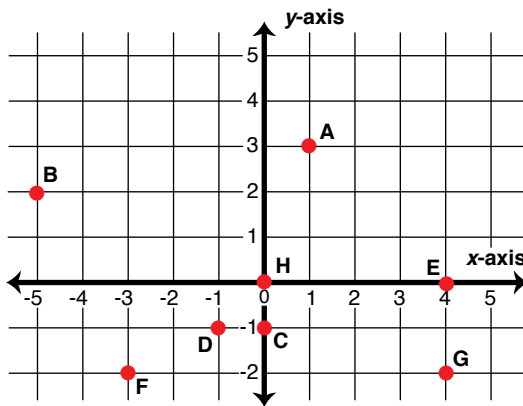
*Answers and/or discussion are included in the lesson.

13. A. C B. D C. E D. F
 14. A. (2, 4) B. (0, 2) C. (-4, -3) D. (4, 2)

Homework (SG p. 254)
 Questions 1–12

	Object	x-coordinate	y-coordinate	Ordered Pair
1.		-1	3	(-1, 3)
2.		-3	-2	(-3, -2)
3.		2	-2	(2, -2)
4.		3	2	(3, 2)

5–12.



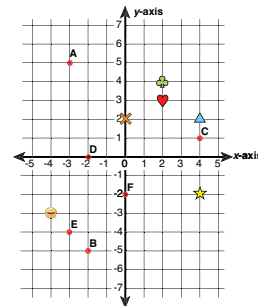
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✓ Check-In: Questions 13-14

Some examples of ordered pairs and their locations are given here.

- The is at (2, 3). Point A is at (-3, 5).
 The is at (4, -2). Point B is at (-2, -5).



13. Name the point at the given coordinates.
 A. (4, 1) B. (-2, 0) C. (-3, -4) D. (0, -2)
 14. Give the coordinates of the following points.
 A. B. C. D.

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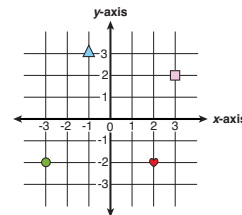
SG • Grade 5 • Unit 6 • Lesson 2 253

Student Guide - Page 253



On your own paper, make a table like the one shown. Give the coordinates of the objects listed and then write the coordinates as an ordered pair.

	Object	x-coordinate	y-coordinate	Ordered Pair
1.				
2.				
3.				
4.				



Use *Four-Quadrant Grid Paper* or draw the *x*- and *y*-axes on *Centimeter Grid Paper*. Mark the following points on the coordinate system.

5. A at (1, 3) 6. B at (-5, 2)
 7. C at (0, -1) 8. D at (-1, -1)
 9. E at (4, 0) 10. F at (-3, -2)
 11. G at (4, -2) 12. H at (0, 0)

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254 SG • Grade 5 • Unit 6 • Lesson 2

Introduce Coordinates

Student Guide - Page 254