Stephanie Whitney
7th Grade
Locating Points in a Rectangular Coordinate System

A. Objective

PASS 3.3a: Students will locate points in all four quadrants of a Rectangular Coordinate System.

Students will be able to define vocabulary associated with the coordinate systems

Resources:

Worksheet taken from 100 Reproducible Activities Geometry Published by Instructional Fair ISBN # 1-56822-067-7

Materials:

Individual white boards with coordinate plane on one side and dry erase markers
Copies of worksheet for each student

B. Instruction:

a. Introduction:

Explain to the class that today they will locate points using a rectangular coordinate system.

b. Instructional Process

Give each student an individual white board or a copy of a blank graph with the axes marked.

- Draw a large coordinate plane on the board or show one on the overhead/smart board/mimeo.
- Tell the students different names of the coordinate plane and use them all throughout the lecture (Cartesian Coordinate System, Rectangular Coordinate System, Coordinate Plane)
- Identify the x and y axis and explain how each axis is a number line with positive and negative numbers. Put the numbers on the number lines. Have the students do this on their individual white board.
- Identify the origin

- Explain how the coordinate plane can be used to plot ordered pairs (what we will be doing today), and in high school we will use it to graph and solve equations, among other things.
- Identify and mark the four quadrants using roman numerals. Have the students mark them on their white board.
- Explain what an ordered pair is. Emphasize that the x coordinate is listed first, and the y coordinate second. Thus you go "left or right first, and then up or down". Explain the proper names for x and y coordinates are the abscissa and ordinate, respectively.
- Write examples of ordered pairs (stress the vocabulary). For example: (2,3), (-4,5), (1,-2), (-3,-1), (5,0), (0,5) or other numbers that will be located in each quadrant and on the axes.
- Plot these on the board as students plot them on their individual boards. Remind them over and over that the x coordinate is first.

c. Closure

Remind the students of the steps in plotting a point and of vocabulary they have learned – ask for a definition and then call on a student to give it.
Coordinate Plane
X axis
Y axis
Origin
Quadrant
Ordered Pair
Abscissa (x coordinate)
Ordinate (y coordinate).

C. Assessment

I will monitor the students as they plot the points on the white board. I will also have them do the included worksheet on plotting ordered pairs to ensure that they understand the concept.

I will hold the students responsible for the new vocabulary by including matching questions with the vocabulary on a test. I will continuing to use the vocabulary in my speaking and will require them to call elements of the graph by their proper names.

D. Modifications/Accommodations

A student who struggles with the concepts will be given one on one help.

E. Reflection

(to be added after the lesson is taught)

Fun with Graphing

the segments with the following endpoints on the graphs on page

hat does this figure look like? _____

(15, 0), (0, 1)
(14, 0), (0, 2)
(13, 0), (0, 3)
(12, 0), (0, 4)
(11, 0), (0, 5)
(10, 0), (0, 6)
(9, 0), (0, 7)
(8, 0), (0, 8)
(7, 0), (0, 9)
(6, 0), (0, 10)
11. (5, 0), (0, 11)
12. (4, 0), (0, 12)
13. (3, 0), (0, 13)
14. (2, 0), (0, 14)
15. (1, 0), (0, 15)
16. (-15, 0), (0, -1)
17. (-14, 0), (0, -2)
18. (-13, 0), (0, -3)
19. (-12, 0), (0, -4)
20. (-11, 0), (0, -5)
21. (-10, 0), (0, -6)
22. (-9, 0), (0, -7)
23. (-8, 0), (0, -8)
24. (-7, 0), (0, -9)
25. (-6, 0), (0, -10)
26. (-5, 0), (0, -11)
27. (-4, 0), (0, -12)
28. (-3, 0), (0, -13)
29. (-2, 0), (0, -14)
30. (-1, 0), (0, -15)

II. What does this figure look like? _____

1. (12, 12), (12, -12)
2. (12, -12), (-12, -12)
3. (-12, -12), (-12, 12)
4. (-12, 12), (12, 12)
5. (12, 12), (-12, 11)
6. (10, 12), (-12, 9)
7. (8, 12), (-12, 7)
8. (6, 12), (-12, 5)
9. (4, 12), (-12, 3)
10. (2, 12), (-12, 1)
11. (0, 12), (-12, -1)
12. (-2, 12), (-12, -3)
13. (-4, 12), (-12, -5)
14. (-6, 12), (-12, -7)
15. (-8, 12), (-12, -9)
16. (-10, 12), (-12, -11)
17. (-12, 12), (-11, -12)
18. (-12, 8), (-7, -12)
19. (-12, 8), (-7, -12)
20. (-12, 6), (-5, -12)
21. (-12, 4), (-3, -12)
22. (-12, 2), (-1, -12)
23. (-12, 0), (1, -12)
24. (-12, -2), (3, -12)
25. (-12, -4), (5, -12)
26. (-12, -6), (7, -12)
27. (-12, -8), (9, -12)
28. (-12, -10), (11, -12)
29. (-12, -12), (12, -11)
30. (-10, -12), (12, -9)
31. (-8, -12), (12, -7)
32. (-6, -12), (12, -5)
33. (-4, -12), (12, -3)
34. (-2, -12), (12, -1)
35. (0, -12), (12, 1)
36. (2, -12), (12, 3)
37. (4, -12), (12, 5)
38. (6, -12), (12, 7)
39. (8, -12), (12, 9)
40. (10, -12), (12, 11)
41. (12, -12), (11, 12)
42. (12, -10), (9, 12)
43. (12, -8), (7, 12)
44. (12, -6), (5, 12)
45. (12, -4), (3, 12)
46. (12, -2), (1, 12)
47. (12, 0), (-1, 12)
48. (12, 2), (-3, 12)
49. (12, 4), (-5, 12)
50. (12, 6), (-7, 12)
51. (12,8), (-9, 12)
52. (12, 10), (-11, 12)

Parallel Lines