

learning focus:

- ✓ identify and graph points on the coordinate plane
- ✓ apply graphing on the coordinate plane to real-world situations
- ✓ generate two numerical patterns using two given rules and identify the relationship

COORDINATE PLANE UNIT

10 DAY TEKS-ALIGNED UNIT



INTRO TO THE COORDINATE PLANE STUDENT HANDOUT

A non-profit organization hosts an event. The number line shows the relation to the starting line.

a. Describe the location of the relation to the starting line.

b. The finish line will be 6 km from the starting line. Plot the point of the finish line on the number line.

A number line is a one-dimensional line. Use the definition of a number line to describe the location of the finish line.

X-AXIS

Y-AXIS

ORIGIN

To give the location of a point on the coordinate plane, we use an ordered pair.

ORDERED PAIRS

1. Use the coordinate plane to locate the point A. What is the x-coordinate of point A?

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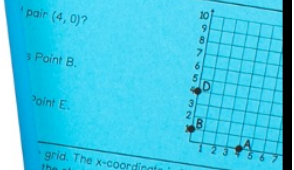
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9	Intro to the Coordinate Plane	Student Handout
11	Graphing Points on the Coordinate Plane	Independent Practice
13	Graphing Points on the Coordinate Plane	Student Handout
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COORDINATE PLANE UNIT REVIEW

Solve each of the problems below. Be sure to ask questions if you need more information.

1. Define the following terms: a. the horizontal number line in the coordinate plane. b. the vertical number line in the coordinate plane. c. the point where the x-axis and y-axis intersect. d. a two-dimensional plane formed by a pair of perpendicular lines. e. the first number in an ordered pair.

- a. the second number in an ordered pair
- b. the horizontal number line in the coordinate plane
- c. the point where the x-axis and y-axis intersect
- d. the vertical number line in the coordinate plane
- e. a two-dimensional plane formed by a pair of perpendicular lines
- f. the first number in an ordered pair



2. The x-coordinate is 7, and the y-coordinate is 4. Write an ordered pair that represents this point.

3. The x-coordinate is 4, and the y-coordinate is 7. Write an ordered pair that represents this point.

THE COORDINATE PLANE



a 10 day TEKS-aligned unit

TEKS: 5.4C, 5.4D, 5.8A, 5.8B, 5.8C

**ready-to-go, scaffolded
student materials**

COORDINATE PLANE UNIT

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THE COORDINATE PLANE



a 10 day TEKS-aligned unit

TEKS: 5.8A, 5.8B, 5.8C, 5.4C, 5.4D

student friendly + real-world application

scaffolded concepts

INTRO TO THE COORDINATE PLANE

STUDENT HANDOUT

Name _____
Date _____ Pd _____

A non-profit organization hosts a mud run as a fundraising event. The number line shows the details of the course.

a. Describe the location of the hay bale and mud pit in relation to the starting line.

KILOMETERS

b. The finish line will be 6 km from the starting line. Plot the point of the finish line on the number line.

A number line is a one-dimensional representation of points on a straight line. The _____ is a two-dimensional plane formed by a pair of perpendicular number lines, called _____. Use the definitions below to label the parts of the coordinate plane.

X-AXIS	• The _____ number line in the coordinate plane.
Y-AXIS	• The _____ number line in the coordinate plane.
ORIGIN	• The point where the x-axis and y-axis _____.

To give the location of a point on the coordinate plane, find the distance on both the x- and the y-axis using an ordered pair as described below.

ORDERED PAIRS	<ul style="list-style-type: none"> • A pair of numbers that describes a _____ on the coordinate is made up of an x-coordinate and y-coordinate in the form _____. • x-coordinate: the _____ number in an ordered pair and indicates the _____ distance of the point from the origin. • y-coordinate: the _____ number in an ordered pair and indicates the _____ distance of the point from the origin.
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1. Use the coordinate plane to answer a-d.

a. What is the x-coordinate of point A? _____

b. What is the y-coordinate of point C? _____

c. Which point has a y-coordinate of 5? _____

d. Which point is located at the origin? What ordered pair represents the location of the origin?

RATIONAL NUMBERS ON THE COORDINATE PLANE

INDEPENDENT PRACTICE

Name _____
Date _____ Pd _____

PART I: Several students plotted a point on the coordinate grid at the right. Use the clues on cards 1-6 to identify each student's point. Then write the point and ordered pair next to the student's name in the table.

NAME	POINT	ORDERED PAIR
ELIZA		
AURORA		
FINN		
JOSIAH		
LAVINIA		
CONNOR		

1 Eliza plotted a point on the x-axis at $5\frac{1}{2}$.

2 Aurora plotted a point by moving 3.5 units to the right and 7 units up from the origin.

3 Finn plotted a point on the y-axis half way between 4 and 5.

4 Josiah started at the origin and moved to the right 7 and up $5\frac{1}{2}$ to plot his point.

5 Lavinia plotted a point by moving 9 units to the right and 0.5 units up from the origin.

6 Connor plotted a point by moving $\frac{1}{2}$ unit to the right and 9 units up from the origin.

PART II: Apply your knowledge of graphing points on the coordinate plane to answer #7-8.

7. Plot the points on the coordinate grid. Then connect the points with line segments to form a hexagon.
 $(0, 2\frac{1}{2})$ $(1.5, 4.5)$ $(3.5, 4.5)$ $(5, 2\frac{1}{2})$ $(3.5, 0.5)$ $(\frac{1}{2}, \frac{1}{2})$

List 3 ordered pairs that are located inside the polygon.

8. The graph shows three of the four vertices for parallelogram JKLM. Which student(s) listed an ordered pair for point M that would NOT form a parallelogram?

ENOCH	LILAH	RAFAEL
(1, 3.5)	(6, 3.5)	(5.5, 3.5)

application opportunities

THE COORDINATE PLANE



a 10 day TEKS-aligned unit

TEKS: 5.8A, 5.8B, 5.8C, 5.4C, 5.4D

unit study guide + assessments

✓ quizzes

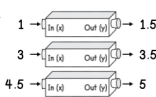
✓ editable unit test

GRAPHING ON THE COORDINATE PLANE QUIZ

Name _____
Date _____ Pd _____

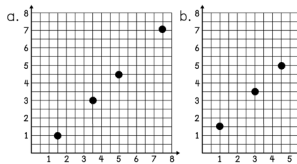
Answer the questions below. Be sure to show work.

- Merrick used a number machine to create ordered pairs of numbers based on a rule. Some ordered pairs are shown. Which graph best represents the ordered pairs?



Answers

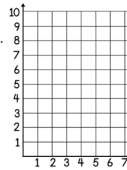
- _____
- _____
- _____



- Which best describes the y-coordinate?
 - The intersection of two grid lines on a coordinate grid
 - The first number in an ordered pair on a coordinate grid
 - The vertical line that contains the set of ordered pairs on a coordinate grid
 - The second number in an ordered pair on a coordinate grid

Answer the questions below. Be sure to show work.

- Aiza created a pattern by multiplying the x-coordinate by 3 to get the y-coordinate. Two points on the coordinate grid that represent this pattern.



- Joel needs help plotting the point (9, 3). What movement should Joel complete first?
 - Move 9 units up along the y-axis.
 - Move 9 units right along the x-axis.

COORDINATE PLANE UNIT REVIEW

Name _____
Date _____ Pd _____

Solve each of the problems below. Be sure to ask questions if you need more help with a topic.

I CAN IDENTIFY PARTS OF THE COORDINATE PLANE.

1. Match each term to the correct definition.

- | | |
|------------------------|--|
| _____ coordinate plane | a. the second number in an ordered pair |
| _____ x-axis | b. the intersection of two grid lines on a coordinate grid |
| _____ y-axis | c. the first number in an ordered pair on a coordinate grid |
| _____ origin | d. the vertical line that contains the set of ordered pairs on a coordinate grid |
| _____ x-coordinate | e. the horizontal line that contains the set of ordered pairs on a coordinate grid |
| _____ y-coordinate | f. the point where the x-axis and y-axis intersect |

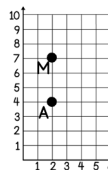
Use the coordinate grid to answer questions 2-4.

- Which point represents the ordered pair (3, 4)?
- Write the ordered pair that represents the point shown.
- Write the ordered pair that represents the point shown.

I CAN GRAPH ORDERED PAIRS ON THE COORDINATE PLANE.

- Addie plotted the ordered pair (5, 4) on a coordinate grid by moving 5 units left from the origin. Did Addie plot the ordered pair correctly? If not, describe how Addie should have plotted her point.

- If Yuna plots point H at (8, 7), will she create a rectangle? If not, explain what shape Yuna created.



GRAPHING POINTS ON THE COORDINATE PLANE STUDENT HANDOUT

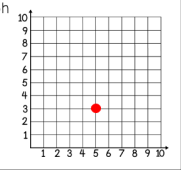
Name Answer Key
Date _____ Pd _____

An ordered pair represents an exact location on the coordinate plane. Use the steps outlined below to graph the coordinate point shown at the right.

GRAPHING ORDERED PAIRS

- Label the x and y-coordinates in your ordered pair.
- Start at the origin, (0, 0).
- Move to the right according to the value of the x-coordinate.
- Move up according to the value of the y-coordinate.

Ex: Graph the point (5, 3).

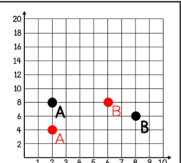


For each coordinate point given in the table, write a description of how to graph the ordered pair. Then graph and label the point on the coordinate plane shown at the right.

POINT	DESCRIPTION	GRAPH AND LABEL
A (4, 7)	Begin at the origin; Move 4 units to the right and 7 units up	
B (0, 4)	Begin at the origin; Move 4 units up	
C (1, 7)	Begin at the origin; Move 1 unit to the right and 7 units up	
D (7, 1)	Begin at the origin; Move 7 units to the right and 1 unit up	
E (9, 0)	Begin at the origin; Move 9 units to the right	
F (5, 9)	Begin at the origin; Move 5 units to the right and 9 units up	

Use your knowledge of graphing points on the coordinate grid to answer the question below.

- Mrs. Park asks her students to graph point A (2, 4) and Point B (6, 8). Tamiko graphed the points as shown but makes an error with each point.
 - Describe Tamiko's error with point A and then correctly plot point A.
Tamiko plotted the point at a y-value of 8 instead of 4.
 - Describe Tamiko's error with point B and then correctly plot point B.
Tamiko switched the x and y-coordinates.



answer keys included

