



MATH NEWS

Grade 5 | Module 6 | Topic D | Problem Solving w/ Coordinate Plane

Welcome

This document is created to give parents and students a better understanding of the math concepts found in the Eureka Math (© 2013 Common Core, Inc.) that is also posted in the Engage New York material taught in the classroom. Grade 5 Module 6 of Eureka Math (Engage New York) covers Problem Solving with the Coordinate Plane. In Module 6, Topic D, students will use the coordinate plane and make predictions based on those patterns.

Words to Know

- coordinate plane
- perpendicular
- origin
- line of symmetry
- coordinate pair or ordered pair

Objectives

- Draw symmetrical figures on the coordinate plane
- Plot data on line graphs and analyze trends
- Use coordinate systems to solve word problems

District Math Website

<http://op97mathgrade5.weebly.com/module-6.html>

Important Information

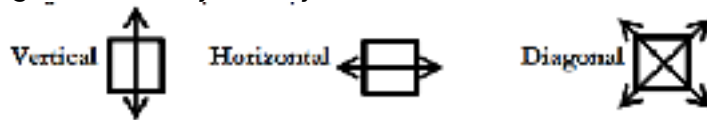
Things to Remember

Coordinate Plane: The plane determined by a horizontal number line, called the x -axis, and vertical number line, called the y -axis, intersecting at a point called the origin. Each point in the coordinate plane can be specified by an ordered pair or coordinate pair of numbers.

Coordinate Pair or Ordered Pair: Two numbers that are used to identify a point on a plane; written (x,y) where x represents a distance from 0 on the x -axis and y represents a distance from 0 on the y -axis

Origin: The point at which the x -axis and the y -axis intersect, labeled $(0, 0)$ on the coordinate plane

Line of Symmetry: A line of symmetry divides a figure into 2 congruent parts. A figure could have a vertical, horizontal, and/or diagonal line of symmetry.



Draw Symmetrical Figures on the Coordinate Plane

Step 1: Record the ordered pair for each point on the grid.

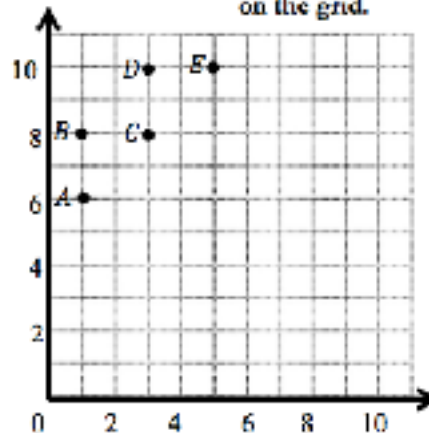
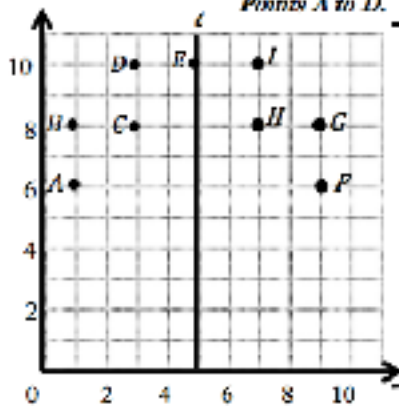


Table A	
Point	(x, y)
A	(1, 6)
B	(1, 8)
C	(3, 8)
D	(3, 10)
E	(5, 10)

(Cont.)

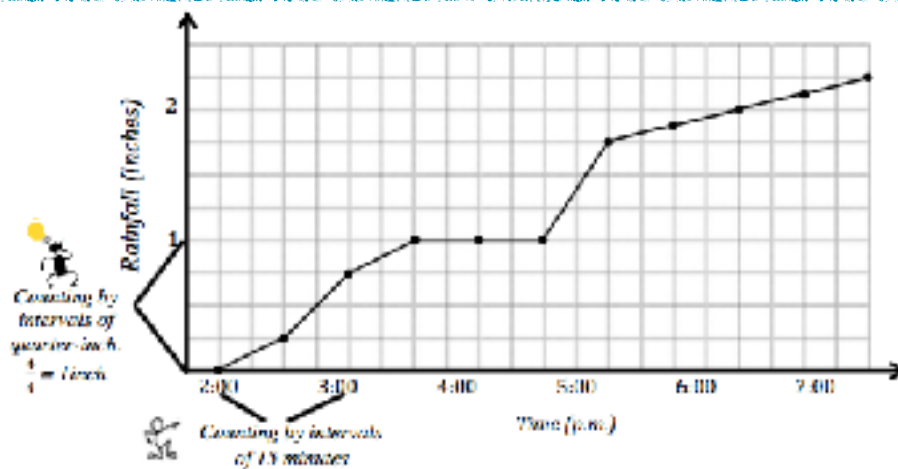
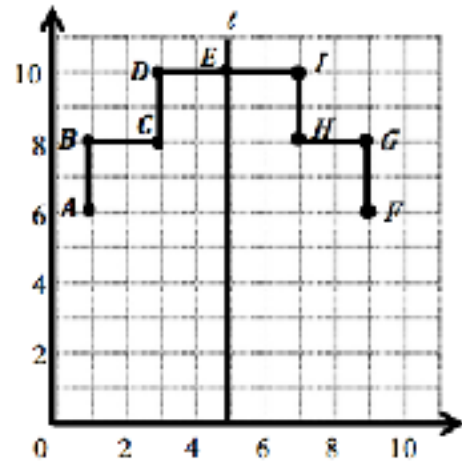
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Step 2: Construct a line of symmetry, ℓ whose rule is x is always 5. Then plot points symmetric to the Points A to D.



Since A and B are 4 units from the line of symmetry, then the points symmetric to A and B would be 4 units to the right of the line of symmetry. (F and G) Points C and D are 2 units from the line of symmetry so the points symmetric to C and D would be 2 units to the right of the line of symmetry. (H and I)

Step 3: Connect the points to create symmetrical figures across the vertical line of symmetry.



- How many inches of rain fell during this five-hour period?
 $2\frac{1}{4}$ inches fell during the five-hour period.
- During which half-hour period did $\frac{1}{2}$ inch rain fall? Explain how you know.
 From 2:30 p.m. to 3:00 p.m. a $\frac{1}{2}$ inch of rain fell. As the line moves up, each grid line increases by a $\frac{1}{4}$ inch. It takes 2 one-fourths to equal $\frac{1}{2}$ inch.
- During which half-hour period did rain fall most rapidly? Explain how you know.
 Rain fell most rapidly from 4:45 p.m. to 5:15 p.m. because the line is very steep.
- Why do you think the line is horizontal between 3:30 p.m. and 4:30 p.m.?
 The line is horizontal between 3:30 p.m. to 4:30 p.m. since no rain fell.
- For every inch of rain that fell here, a nearby community in the mountains received a foot and a half of snow. How many inches of snow fell in the mountain community from 5:15 p.m. and 7:00 p.m.?
 From 5:15 p.m. to 7:00 p.m. a total of $\frac{3}{4}$ inch of rain fell. A foot is the same as 12 inches and a half of foot is 6 inches. So a foot and a half of snow is equivalent to 18 inches. The community got $\frac{1}{4}$ of the 18 inches which is 9 inches or $\frac{3}{4}$ of a foot.