Kentucky Alternate Assessment Instructional Support Document - Math

Standards for Mathematical Practice

MP.1. Make sense of problems and persevere in solving them.	MP.5. Use appropriate tools strategically.
MP.2. Reason abstractly and quantitatively.	MP.6. Attend to precision.
MP.3. Construct viable arguments and critique the reasoning of others.	MP.7. Look for and make use of structure.
MP.4. Model with mathematics.	MP.8. Look for and express regularity in repeated reasoning.

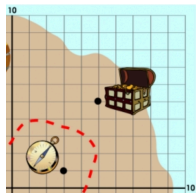| Standard	Clarifications
KY.6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes, using appropriate range and intervals, to represent points on the line and in the plane, that include negative numbers and coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize 0 is its own opposite and the opposite of a positive number is a negative, and the opposite of a negative number is a positive, such as −(−3)=3. b. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. c. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize the similarity between whole numbers, their negative opposites and their positions on a number line, ordered pairs differ only by signs and their locations on one or both axes. ***Alternate Assessment Target:** Limit full standard to integers from negative 10 to 10.*	a. Emphasis is on student understanding that every positive location on a number line has an opposite the same distance from zero in the negative direction and vice versa. Logically following from this is the fact that zero, as it has no positive or negative sign, is its own opposite. b. Emphasis is on generalizing patterns about where coordinates are located on a coordinate plane. c. The intent is for students to see a coordinate axis is the combination of a vertical number line and a horizontal number line. ***Alternate Assessment Clarification:***
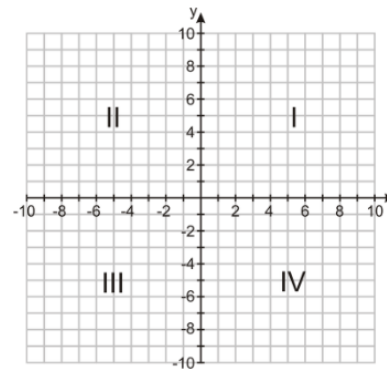
Connections to Math Practices	Coherence/Foundational Understandings
MP. 4 Model with mathematics. (Ask and answer questions about the world*) Students use coordinates to find locations on a map grid where items are located at the intersections of lines, not in the spaces. **MP.6** Attend to precision. (Communicate precisely.*) *Key Vocabulary: quadrant, coordinate plane, coordinates, x-axis, y-axis, ordered pairs, vertical, horizontal, origin* **Click here to see more about what teachers and students do to build the math practices:** **Engaging the Math Practices and Question Stems**	**Pre-requisite Skills** - A coordinate plane is created using two number lines, horizontal and vertical. - X term is listed first and y term is listed second in an ordered pair - X term is located horizontally along the x-axis; y term is located vertically on the y-axis - Understanding negative numbers KY.6.EE.6 **Coherence** KY.5.G.1→KY.6.NS.6→KY.7.NS.1 Kentucky Academic Standards for Mathematics

*Clarification to the math practices by Robert Kaplinsky.

Instructional Considerations
Possible Areas of Difficulties/Misconceptions   - Students mix up directionality of the x and y axis   - Students record the ordered pair in incorrect order   - Students may confuse ordered pairs with / without negative numbers - e.g. (3,2) and (-3, 2)   **Suggested Tools/Visual Aids -**   - KY Alternate Assessment Resource Guide (General terms pps 6-11 ; Math terms pps 22-26)   - Ky Alternate Standards Progression   - Vertical and horizontal number lines   - Graph paper   - Create coordinate plane on floor so students can physically locate points   - Geoboards

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