Teacher: Ms. Lee

October 26, 2012

Subject area/course/grade level: Coordinate Plane/Math/5th grade

Materials: Computer, Coordinate Plane worksheet, pencils, direction sheet, graphing paper, Excel

Standards:

(3)(c) 4.(iv) Ability to facilitate students’ individual and collaborative use of technology, including classroom resources as well as distance and on-line learning opportunities when available and appropriate.

(4) (d) 2. (iii) Ability to develop and implement a classroom management plan to ensure equitable and effective student access to available technology resources.

(4) (d) 2. (v) Ability to design, implement, and assess learner-centered lessons and units that incorporate technology and use appropriate and effective practices in teaching and learning with technology.

(4) (d) 2. (viii) Ability to design, manage, and facilitate learning experiences incorporating technologies that are responsive to the diverse needs of learners, learning styles and the special needs of all students (e.g., assistive technologies for students with special needs).

(4) (d) 2. (ix) Ability to evaluate students’ technology-based products within curricular areas.

Objectives: The students will learn about Coordinate Planes and how to plot points on them.

Differentiation Strategies: For the students who have trouble seeing, a larger font size will be used when using Excel to create Coordinate Plane and those students will also be seated at the front of the class in order for them to see the power point presentation clearly.

**Engagement:** Does anyone know what word is used to describe a plane consisting of a set of two lines intersecting each other at right angles? What is the point at which something comes into existence?

Assessment: Students were not familiar with what angles were or about coordinate planes.

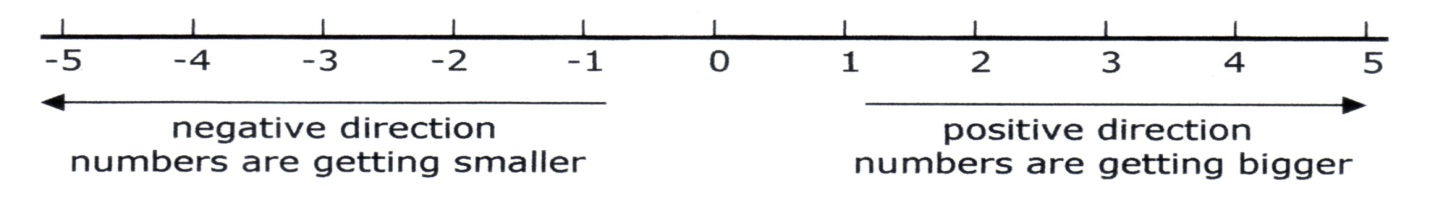
**Exploration:**

The students will use graphing paper to draw the Coordinate Plane, label the numbers on the Coordinate Plane, and plot ordered pairs.

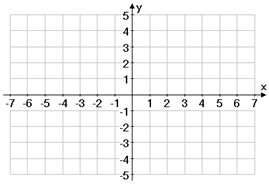
Assessment: The students were able to draw the Coordinate Plane and label number, but needed help plotting ordered pairs.

**Explanation:**

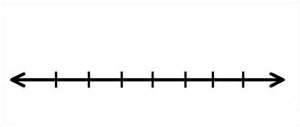
I will show a power point introducing the new vocabulary related to the Coordinate Plane to the class. After the power point has been shown, I will use the promethean to show the students a Coordinate Plane, the x and y axis, origin, and the quadrants.



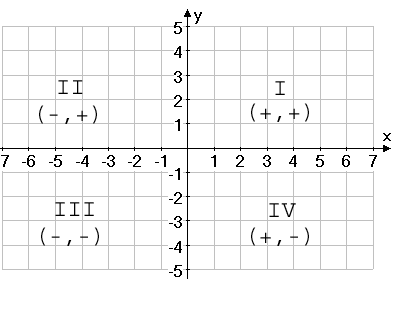
1. You learned about the basic (counting) number line
2. A positive number is a real number greater than zero. Zero itself is not positive. The origin is the beginning of something’s existence. The origin is also the point where the x and y axis intersects (crosses).
3. A negative number is a real number less than zero. Negatives complete the number line.



**When number lines are drawn like this, they are called an “axis”. The horizontal number line is called the “x-axis”; and the vertical number line is the “y-axis”.**

**  
The arrows at the ends of the axis indicate the direction which the numbers are getting larger. The number line keeps going.**

**Quadrants:**



* The two axes divide the plane into four sections called “quadrants”. The quadrants are labeled with roman numerals, starting at the positive x-axis and going around anti-clockwise (the opposite direction that the clock goes in).

1. When reading numbers in Quadrant 1, both of the numbers will be positive (+, +), (4, 3). (4, 3) is an example of an **Ordered Pair** which is, a pair of numbers used to locate a point on a coordinate plane. An ordered pair is written in the form (x, y) where x is the x-coordinate and y is the y-coordinate.
2. A coordinate is equal in rank, quality, or significance.
3. When reading numbers in Quadrant 2, the first number will be positive be negative and the second (-, +), (-3, 7).
4. When reading numbers in Quadrant 3, the first number will be negative and second number will be negative (-, -), (-6, -2).
5. When reading Quadrant 4, the first number will be positive and the second number will be negative (+, -), (2, -5).

**When reading ordered pairs, the first digit (number) tells you where to go on the x- axis and the second number tells you where to go on the y-axis.**

* *The students will be told to write the previous information that was discussed in their math journals.*

Assessment: Most of the students were able to follow me teaching the details of the Coordinate Plane, and seemed to benefit from seeing the power point presentation.

**Elaboration:**

I will work with one student at a time to create a Coordinate Plane using Excel. The student will be given written directions on how to create the Coordinate Plane in Excel, but I will also help by giving the student verbal directions. Once the Coordinate Plane has been created using Excel, the student with have to plot points on it.

Assessment: The students worked better with the verbal directions when completing the Coordinate Plane using Excel.

**Evaluation:**

The students will complete a worksheet on the Coordinate Plane, in which they will have to plot ordered pairs, label the quadrants, and label the origin, and label the x and y axis. The students will also have to plot point that I give them on the Coordinate Plane that they created using Excel.