# Algebra/Geometry Institute Summer 2005

# Graphing Ordered Pairs

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**School:  Solomon Middle School**
        **Greenville, MS**
**Grade Level:  Grade 7**

1    Teaching objective(s)

**Mississippi Benchmark Framework:**
- o   *Graph ordered pairs on a coordinate plane.*

**Institute Content Based on MS Framework**
- o   *Apply the principles of graphing in the coordinate system.*

2    Instructional Activities
(**This lesson will be implemented after discussing the coordinate system.  This activity can be implemented using an overhead projector or using a PowerPoint Presentation.  The presentation is available on the lesson plan menu page.** )

*The teacher will display a coordinate plane on the overhead using the LCD projector (PowerPoint Presentation) or place the coordinate plane transparency on the overhead projector.  The teacher will conduct a review of the coordinate system.*

### *Steps for Guided Review*

1.  *The teacher will call upon a student to identify and define in their own words a part of the coordinate plane.  The teacher will ask, "Where is the x-axis located on the coordinate plane?"*

2.  *The students will give the definition of the part in question and identify the part on the coordinate plane.  On the overhead the students can label the parts of the coordinate plane.*

3.  *The teacher will click the mouse to display a part of the coordinate plane after the student has identified and defined that part.*

4.  *The teacher will repeat steps 1 – 3 until all parts of the coordinate plane are identified.  (x-axis, y-axis, origin, quadrant 1, quadrant 2, quadrant 3, and quadrant 4).*

*The teacher will lead a discussion on graphing skills. The teacher will click the mouse for the next slide. The teacher will introduce new terms. (ordered pairs, x-coordinate, y-coordinate).*

*The teacher will click the mouse for the next slide. The teacher will demonstrate how to graph order pairs using the PowerPoint technique or (using the transparency).*

### *Steps for Graphing*

1. *Provide the students with a set of ordered pairs: (-3, 2), (3,4), (-5,-6), (3,-2). The teacher will remind the students that according to the definition the first number in the ordered pair is found on the x-axis( left or right)and the second number in the ordered pair is found on the y-axis(up or down). Therefore, you must first graph the x-coordinate.*

2. *Locate the first number in the ordered pair (-3). The teacher will instruct the student to find the x-axis and move three spaces to the left of the origin. The teacher will ask the students why did we find the (-3) first?*

3. *The teacher will instruct the students to locate the second number in the ordered pair (2). The teacher will instruct the students to move two places up from the (-3). The teacher will ask the students, "Why did we move two places up?"*

4. *The teacher will instruct the students to label the point with a dot to identify the location of (-3,2). The teacher will tell the students to label that point A. The teacher will tell the students that you have just graphed the first set of ordered pairs.*

5. *The teacher will repeat steps 1-4 for the four examples given above.*

*The teacher will click the next slide to wrap up the introduction of graphing ordered pairs. The teacher will wrap up the lesson. The teacher will close the PowerPoint.*

### *Steps for closing PowerPoint*
1. *Click the file on the menu bar.*

2. *Click close.*

*The teacher will distribute the in-class activity "Graphing Ordered Pairs" and instruct the students to complete the assignment. The students will complete the Graphing Ordered Pairs activity. The teacher will discuss the students' performance.*

## 3    Materials and Resources

| *If using LCD Projector* | *If using overhead projector* |
|---|---|
| *Laptop* | *Overhead projector* |
| *LCD Projector* | *Dry Erase Markers* |
| *Coordinate Plane Handout* | *Coordinate plane transparency* |
| *Graphing Ordered Pairs Handout* | *Graphing Ordered Pair Handout* |
| | *Coordinate Plane Handout* |

Audrey, Buffington, Alice Garr, Jay Graening, Philip Halloran, Michael, Mahaffey, Mary O'Neal, John Stoeckinger, Glen Vannatta, <u>Merrill Mathematics Grade 7</u>, *Merrill Publishing Company 1994*

## 4    Assessment

*The teacher will observe the students as they work.  The teacher will look to see if the students are using the proper graphing skills.*

*Performance Assessment - the teacher will grade the Graphing Ordered Pairs Handout.*

# Graphing Ordered Pairs

**Using the attached coordinate plan, give the ordered pairs for each of points listed below.**

1. B _____                    2. E _____

3. F _____                    4. G _____

5. H _____                    6. J _____

**Give the letter of the point for each ordered pair listed below and the quadrant in which they are located.**

 7.  (9, -8) _____, _____            8.  (-10, -7) _____, _____

 9.  (-1, 2) _____, _____            10.  (0, -3) _____, _____

11.  (6, 5) _____, _____            12.  (11, 8) _____, _____

**Give the letter of the point for each ordered pair not used in exercises 1-12. The letters of each point completes the trivia question below.**

**He was named the NBA Most Valuable Player in the NBA Finals in 2003. He wears the number 21 on his jersey and he plays for the San Antonio Spurs. Who is this famous basketball star?**

____ ____ ____        ____ ____ ____ ____ ____ ____

# Coordinate Plane