

# Algebra/Geometry Institute Summer 2003

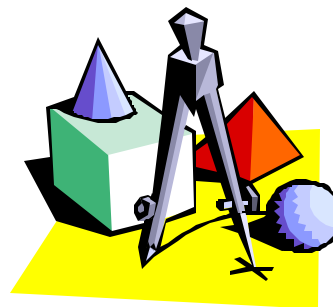
## Lesson 3

Faculty Name: GLORIA MCCULLUM

School: GREENVILLE WESTION

City: GREENVILLE

Grade Level: 9 THRU 12, ALGEBRA 1



### 1) Teaching objective(s) based on MS. Framework, Algebra 1.

APPLY THE PRINCIPLES OF GRAPHING IN THE COORDINATE SYSTEM.

- a. Graphing ordered pairs on the coordinate plane.
- b. Write the coordinates of the points on a graph..

### 2. Instructional Activities

The teacher will model examples, checking for student comprehension, assist with guided practice activities, and summary the lesson.

- a) The teacher will illustrate on the overhead how to graph ordered pairs on the coordinate plane. The teacher will give each student a study guide activity sheet. The teacher and the students will work together as the problems are done on the overhead. The teacher will do examples on the overhead, and explain the procedures to the class.
- b) The students will share their answers, explain the procedures to the class, and the class will evaluate their responses.
- c) **For examples**
  - i) Here's how to graph  $(-5, 4)$ . The first coordinate tells how far to move left or right from the origin on the x-axis, (the horizontal line). The second coordinate tells how far to move up or down from the origin on the vertical line, the y- axis.
  - ii) Let's do another ordered pair.
    - (a)  $(2,-3)$
    - (b) Start at the origin.
    - (c) Move right along the x-axis to 2.
    - (d) Move to y-axis, go down to -3.

### **Students' activities**

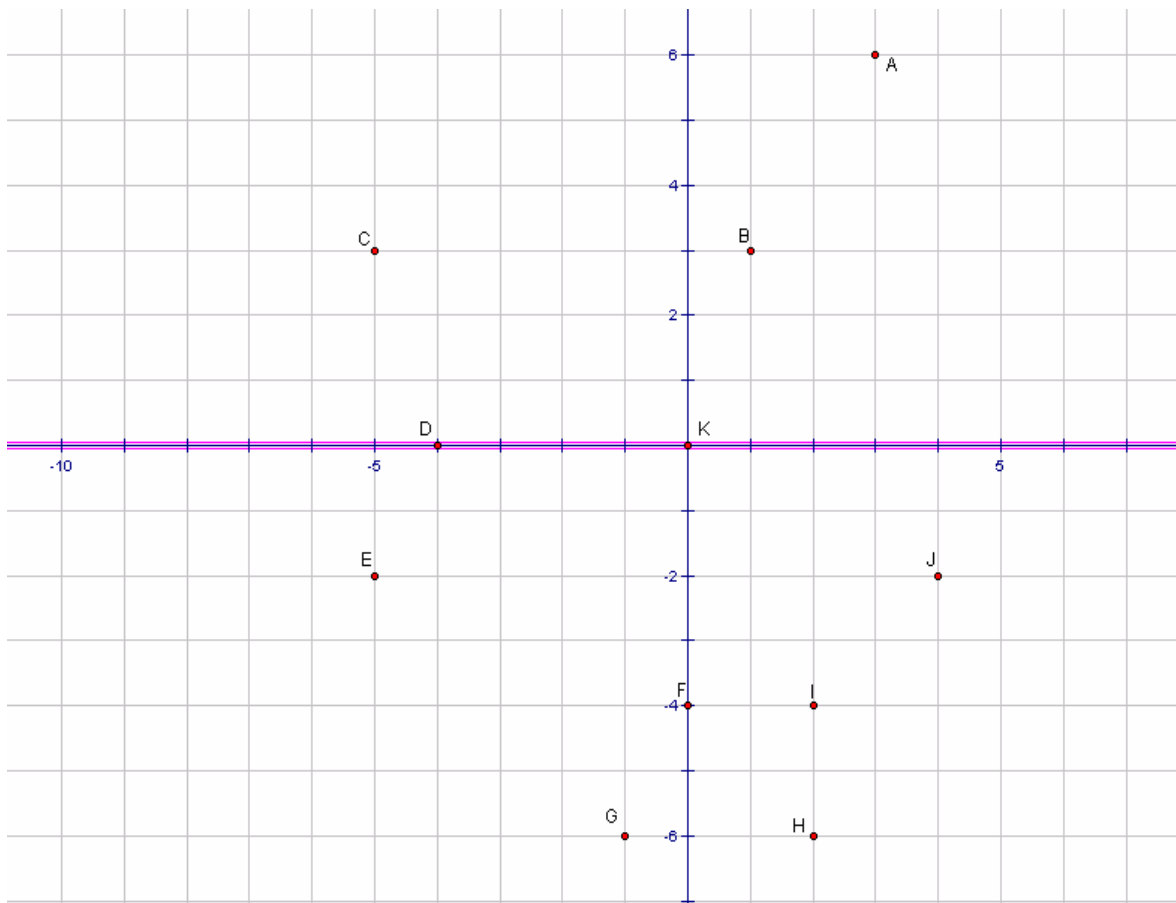
- iii) The students will work at their seats until the study guide has been finished. The study guide activities deal with graphing ordered pairs, and writing the coordinates of points on the graph. After working individually, students share their work with the

class in a whole-class presentation, orally or on the board. The students will explain their work, and the class will evaluate them as they place their work on the overhead, and explain their process.

- iv) The students will do extra practice from a practice workbook sheet. They may work in groups or individually dealing with the same objectives. The students will practice on their own while teacher assists individual students. (“TRIVIA” is a worksheet taken from PRACTICE WORKBOOK WITH EXAMPLES, MCDUGAL LITTLE, 2002, page 25.)
- v) The students will sketch the coordinate plane, label the x-axis as time in seconds, and label the y-axis as distance in feet.

Susan is 40 feet from the nearest hotdog stand. If she runs ten feet per second, how long will it take her to reach the hotdog stand? Construct a table, plot the ordered pairs, and answer the question.

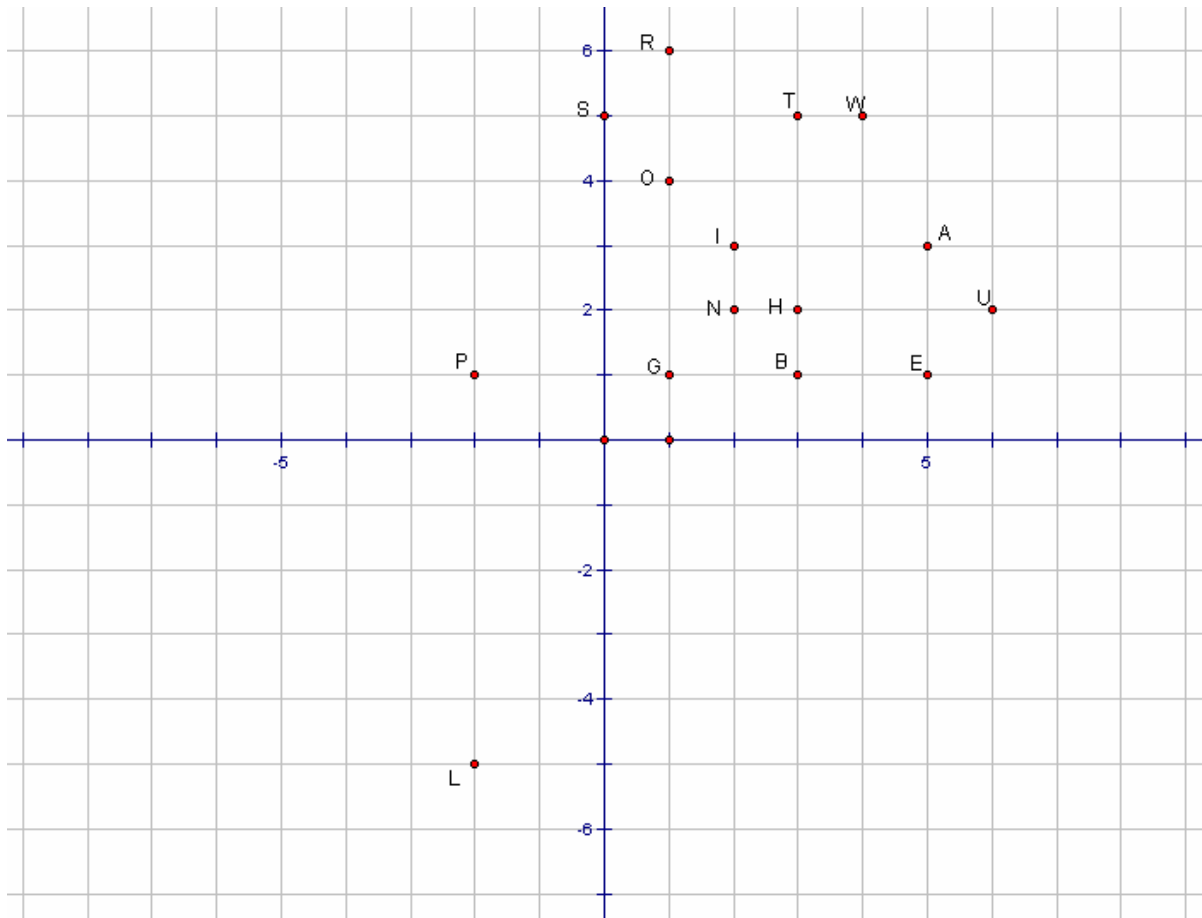
vi) The students will be given a grid of plotted points, and asked to write the x- and the y- coordinates using different colors beside the plotted points.



### MR. COORDINATE NANNY

Coordinate Nanny is a thief, he goes to large department stores to steal colorful coordinated outfits, and when the security officer closes in he poses among the mannequins. They have not caught him yet, because he always escapes. Nanny thinks the officers are dummies, so he decided to leave them a message on the back of his yellow jacket to let them know what they must know in order to catch him. The security guard found the yellow jacket and carried it to the head security officer so that the message could be decoded, and they would know what to be on the lookout for. MR. NANNY had drawn a coordinate plane on his jacket, located points on the plane, and named each point. He also, had written a statement saying, “The reason why you haven’t caught me is because you don’t know what I am wearing. You must know about coordinates, in order to get a description of what I am wearing.” The head security said, uh! coordinates, the coordinates tell you where to go on the x- and y- axis. The first point tells you to locate the origin, check to see if the number is position or negative, and if positive go to the right to locate

your number, if negative go to left to locate your number. The second point tells you, after locating the origin check to see if the number is positive or negative if it is positive go up the y-axis to locate your number, and if negative go down the y-axis to location your number. After you have finished, notice each point has a name, so what we have to do is place the name above each location that is listed in the message. I hope MR. NANNY likes stripes because we are going to catch him. Let's decode the message. Write the letter that matches the ordered pair.



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(3,1) (-2,-5) (6,2) (5,1) (0,5) (3,2) (2,3) (1,6) (3,5)

                                                                                                                         ,

(1,6) (5,3) (2,3) (2,2) (3,1) (1,4) (4,5) (-2,1) (5,3) (2,2) (3,5) (0,5)

AND                                                                   .

(1,1) (-2,-5) (5,3) (0,5) (0,5) (5,1) (0,5)

#### **4 Materials and Resources**

D.C. HEATH COMPANY, STUDY GUIDE, page 115)(12\_5 ),1998

D.C. HEATH COMPANY, PRACTICE WORKBOOK, page 138 (12\_5)

#### **5 ASSESSMENT**

The students' work will be graded by the teacher.