

## Lab Framework

**Text: Cord Applied Math**

**Unit number and title: Unit 17- Graphing Data**

**Short Description:** Students will practice using and finding coordinates of regions, documenting ordered pairs, and graphing the ordered pairs.

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**Date: 6/25/08**

### Lab Title Battleship

#### LAB PLAN

**TEACHER:** Teacher Prep/ Lesson Plan

- **Lab Objective**
  - Recognize coordinates
  - Transcribe two coordinates into an ordered pair
  - Plot ordered pairs onto The Cartesian coordinate system
  - Leadership problem: Create a linear equation using two of the ordered pairs
    - This incorporates a skill learned from the last unit
- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)
  - Basic math and measurement skills, ability to use data in different forms
- **Vocabulary**
  - Ordered Pair
  - The Cartesian Coordinate System
  - Coordinates
  - region
- **Materials List**
  - Student Activity Sheets
  - Pencil
  - Rulers
- **GLEs (State Standards) addressed**
  - Math:
    - 1.1** Understand and apply concepts and procedures from number sense
    - 1.1.6** Complete multi-step computations with combinations of rational numbers using order of operations and addition, subtraction, multiplication, division, powers, and square roots
    - 1.3** Understand and apply concepts and procedures from geometric sense
    - 1.3.3** Use geometric properties to determine and plot points on a coordinate grid
    - 1.5.2** Determine an equation or rule for a linear function represented in a pattern, table, graph, or model
  - Reading:
    - 1.2** Use vocabulary (word meaning) strategies to comprehend text
- **Leadership Skills**

- **SCAN Skills/Workplace Skills**
  - Uses tables, graphs, diagrams, and charts to obtain or convey quantities information.
- **Set-up information**
  - Worksheets with different number being used as coordinate points
  - Students put into partners ahead of time if you wish
  - Use this lab as a follow-up to page TN-5
- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; **-Timeline required**)  
Partners, Leadership problem available, and one 55 minute class period.
- **Teacher Assessment of student learning** (scoring guide, rubric)  
Follow scoring on rubric. If the students complete both worksheets fully then they have successfully completed the activity.
- **Summary of learning** (to be finished after student completes lab)
  - discuss real world application of learning from lab
  - opportunity for students to share/present learning
- **Optional activities**  
If you want to extend the activity or incorporate more work you can also have the students take a poll as to how many coordinates were given before the ship was sunk. With that information the students could create a line, bar, and/or circle graph using this information.
- **Career Applications**  
Surveyor, contractor, interior designer, rescuer, and demolition to name a few.

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**LAB TITLE: Battleship**

**STUDENT INSTRUCTIONS:**

- **Statement of problem addressed by lab**  
Recognizing ordered pairs and the ability to plot the coordinates on a Cartesian Coordinate System.
- **Grouping instructions and roles**  
Find a partner and make sure that you both have Battleship Boards with x and y coordinates exactly the same.
- **Procedures** – steps to follow/instructions
  - Follow Directions on Battleship Board worksheet
  - On the back of the Battleship Board is a Battleship Follow-up worksheet- follow the directions and complete both problems
  - Pick up grading rubric-located by the document camera-and fill out student section
  - You may complete the Leadership problem for Leadership points
    - Create a linear equation using two of the ordered pairs for number one and number two on the Battleship Follow-up worksheet
    - Then find the slope of the two ordered pairs for number one and number two on the Battleship Follow-up worksheet that you used to create the linear equation
- **Outcome instructions**
  - Successfully recognize coordinates
  - Successfully transcribe two coordinates into an ordered pair
  - Successfully plot ordered pairs onto The Cartesian coordinate system
- **Assessment instructions** (peer-teacher)  
Fill out student section of grading rubric and turn in with Battleship Board and Battleship Follow-up worksheet

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