Lab Framework

Text: Cord – Applied Math

Unit number and title: 11 – Using Signed Numbers and Vectors

Short Description: Class Schedule Vector Map

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Lab Title

Class Schedule Vector Map

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**

  Students will use vectors (direction & magnitude) to map their daily class routine.

- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)

  How to use a compass
  How to use a ruler
  What their class schedule is

- **Vocabulary**

  Degree
  Vector
  Blueprint

- **Materials List**

  Blueprint of your school with room numbers included
  Compass (one per pair or trio of students)
  Rulers

- **GLEs (State Standards) addressed**

  Math: 2.2.1 - Select and use relevant information to construct solutions
  2.2.2 - Apply mathematical concepts and procedures from number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense to construct solutions
  4.2.1 - Organize, clarify, and refine mathematical information relevant to a given purpose
  5.3.2 - Understand that mathematics is used in many occupations or careers

- **Leadership Skills**

- **SCAN Skills/Workplace Skills**

- **Set-up information**

  Students need 1 compass for every 2 or 3 students.
  Get a Blueprint for your school from your maintenance staff

- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required)**

  Put students in pairs of groups of three to share the compass. Each student should make their own vector map.
  This lab should take 45 min. – 1 hour.

- **Teacher Assessment of student learning** (scoring guide, rubric)
  No rubric needed.
- **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
  Students should know that vectors contain both direction and magnitude.
  Students should know how to read a compass.

- **Optional activities**
  Have the students include their locker movement between classes.
- **Career Applications**
  Map maker, Truck Driver, Football Coach

LAB TITLE: Class Schedule Vector Map
STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
  Create a vector map (drawn to scale) using a blueprint of the school as your guide.
  Include the degree turns that are needed in order to get from class to class.

- **Grouping instructions and roles**
  Put students in pairs of groups of three to best utilize compasses.

- **Procedures** – steps to follow/instructions
  1. Insure the students know their class schedule
  2. Go over how to read a compass
  3. Give the students a blueprint of the school
  4. Remind the students of vectors (have both direction and magnitude)
  5. Have the students create a vector map of their daily walks from class to class.
  6. Allow students to walk in the hall as needed to figure out the compass measures needed.

- **Outcome instructions**
  When done students should have their very own vector map of their movement from class to class covering their entire day.

- **Assessment instructions** (peer-teacher)
  Have the students exchange maps and walk the new map. Have them evaluate each other based on ease to follow and getting them from the correct class to the next.

Lab Data Collection

Student: _____ Date: _____

Unit: _____

Lab Title:

Criteria: Write the problem/objective in statement form

Data Collection: Record the collected/given data

Calculations: Complete the given calculations to solve for an answer(s)

Summary Statement:

Other Assessment(s)