

## Lab Framework

**Text:**CORD Classic

**Unit number and title:**Unit 6 Working with Lines and Angles

**Developed by:**Robert Drennen

**Date:**06/27/07

## Lab Title Estimate Height

**Contact Information:** (Your contact information for clarification)

**Short Description:** Using tape measure and protractor, students will estimate the height of buildings and structures.

## LAB PLAN

**TEACHER:** Teacher Prep/ Lesson Plan

- **Lab Objective**
  - SWBAT demonstrate ability to use protractor, and tape measure.
- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)
  - Students need to be able to read a tape measure, measure angles with a protractor, use the formula for a right triangle, and use a calculator.
- **New Vocabulary**
- **Materials List**
  - Protractor, tape measure, paper, pencil, calculator, small level, buildings, other objects.
- **GLEs addressed**
  - Math: 1.3.2 Understand and apply concepts and procedures from geometric sense.
  - 1.2.5 : Understand and apply concepts and procedures from measurement.
  - 1.2.3 Understand and apply concepts and procedures from measurement.
  - Reading: 3.2 reading to solve a task.
  - Writing: 3.3 knows and applies writing conventions appropriate for grade level.
- **Leadership Skills**
  - Students must take on different roles and be responsible for their groups task.**
- **SCAN Skills**
- **Set-up information**
  - Divide class into groups of 3. 1 student will site object. 1 student will be recorder. 1 student will assist with tape measure and reading protractor. Students must switch out job assignments with each object.
- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required**)
  - Students must decide objects to measure, assign roles, and collect data. Students will assist each other if needed. This should be completed in 1 50 minute period.
- **Teacher Assessment of student learning** (scoring guide, rubric)
  - Compare answers of students to other groups answers and also to known object used in demo.

- **Summary of learning** (to be finished after student completes lab)
  - discuss real world application of learning from lab
  - opportunity for students to share/present learningStudents share information collected with other students in class.
- **Optional activities**
- **Career Applications**
  - Surveyors and forrestors use these skills.

**LAB TITLE: Unit 6 lab #1 Height of objects**

**STUDENT INSTRUCTIONS:**

- **Statement of problem addressed by lab**

Using a protractor and tape measure, you will be able to estimate the height of structures.
- **Grouping instructions and roles**

Class will divide into teams of 3. Each team will be given a tape measure and a protractor. One member of the team will need to hold the protractor and the tape measure while another member needs to site to the top of object to find height of. Final member will record data collected. After each object/data collection, members will switch roles.
- **Procedures – steps to follow/instructions**
  - 1) Decide on object to measure.
  - 2) Using tape measure, measure back from the object to create approximately a 45 degree angle from your eyes to the top of the object.
  - 3) Have your team member hold the tape to keep the distance accurate while siting to the top of the object.
  - 4) Using the level and the protractor, site to the top of the object.
  - 5) Have your data collector read the measurement of the angle on your protractor.
  - 6) Data collector will then record data onto your paper.
  - 7) Using formula ( $A^2 + B^2 = C^2$ ), solve for height of object.
- **Outcome instructions**
- **Assessment instructions (peer-teacher)**

Students should compare answers to each other groups answers. There should be little variation.

## 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)**