

Lab Framework

Text:CORD Classic

Unit number and title:UNIT 6, Working with Lines and Angles

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Lab Title

Using your shadow to get height of a building

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Short Description: (Using the student shadow to get height of a building)

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**

Students will use their shadow and height to calculate the height of a building.

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

Students must be familiar with reading a tape measure

- **New Vocabulary**

Line

Parallel lines

Perpendicular lines

Point

- **Materials List**

Tape measure

Building or any other tall structure(You can use multiple structures)

Copy of lab data sheet and instructions

- **GLEs addressed**

Math:

1.1.6 Apply strategies to compute fluently with rational numbers

1.2.6 Understand and apply strategies to obtain reasonable measurement at an appropriate level of precision

Reading:

3.2 Read to perform task

Writing:

1.2 Listen and observe to gain and interpret information

1.3 Check for understanding by asking questions and paraphrasing

- **Leadership Skills**

1.4 The student will be involved in activities that require applying theory, problem-solving, and using critical and creative thinking skills while understanding outcomes of related decisions

- **SCAN Skills**

Writing

B. Records information completely and accurately

Arithmetic

A. Performs basic computations

B. Uses basic numerical concepts such as whole numbers and percentages in practical situations

Mathematics

A. Approaches practical problems by choosing appropriately from a variety of mathematical techniques

Thinking skills

A. Organizes and processes symbols, pictures, graphs, objects or other information

- **Set-up information**

After handing out and going over the worksheet, put the kids in groups of 2 so they can measure the height of each other

Pick out the structure for the students to use

Have the students measure the shadow of the structure and the shadow of themselves

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

1 class period

Each student can pick out a structure and record the data

- **Teacher Assessment of student learning** (scoring guide, rubric)

Successful completion of the given task and accompanying data worksheet

- **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**

Have the students do several different structures and then draw a picture of the area using a scale

- **Career Applications**

Measurements of one type or another are used in virtually every job involving structures. Trying to estimate the height of a structure to see if you can clear it when moving things.

LAB TITLE: Using your shadow to get height of a building

STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
Students will use their shadow and height to calculate the height of a building.
- **Grouping instructions and roles**
- **Procedures** – steps to follow/instructions
Measurement of the students height
Measurement of the students shadow
Measurement of the structures shadow
Record the information
Calculate the information
- **Outcome instructions**
Complete the given data collection sheet
- **Assessment instructions** (peer-teacher)
Teacher observation
Were instructions followed
Did the student complete the data collection worksheet
Were calculations made correctly

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)