

Lab Framework

Text: Cord

Unit number and title: Unit 1 Problem Solving Techniques

Short Description: Find out how much it will cost to re-tile the commons and hallway at Skyview High School!

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Date: 1/18/08

Lab Title Don't Break a Tile

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**

Students need to figure the amount of square footage in the common area so they can figure the cost it will be to re-tile the floor.

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

Area of a trapezoid: $\frac{1}{2} \times (\text{base1} \times \text{base2}) \times \text{Height}$

Area of a rectangle: Length x Width

Use addition, subtraction, multiplication and division to find an answer

- **Vocabulary**

- **Materials List**

Drawing of common area

Pencil

Calculator

- **GLEs (State Standards) addressed**

Math: **2.1.1 Formulate questions to be answered to solve a problem. W**

2.2.2 Apply mathematical concepts and procedures from number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense to construct solutions. W

2.2.4 Determine whether a solution is viable, is mathematically correct, and answers the question(s). W

Reading: **3.2.2 Apply understanding of complex information, including functional documents, to perform a task.**

Writing: **Component 3.3: Knows and applies writing conventions appropriate for the grade level. W**

- **Leadership Skills**

Listening skills

Teamwork skills

Component 2.2: Uses interpersonal skills and strategies in a multicultural context to work collaboratively, solve problems, and perform tasks.

- **SCAN Skills/Workplace Skills**

- Listening
 - Thinking
 - Responsibility
 - Self Management

- **Set-up information**

- Students will get into groups of 3. Students will decide who is the facilitator, record keeper and spokesperson for the group. The facilitator will get the assignment. The assignment will be a drawing of the dimensions of the common area as well as the hall entry of the main floor of the building. In groups of 3 students will estimate what it will cost to retile the first floor of the building (entry hall, commons and wing halls).

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

- Group assignments: 5 minutes
 - Assign Duties: 5 minutes
 - Perform calculations as a group: 20 minutes
 - Report to whole group process and answer: 10 minutes
 - Whole class discussion: 10 minutes

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

- Successful completion of the task

- **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
 - Discuss results

- **Optional activities**

- Complete same calculations using carpet and provide the students with the carpet price and dimensions of the roll.

- **Career Applications**

- What type of jobs will use problem solving and teamwork skills? All jobs.

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LAB TITLE: Don't Break a Tile

STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
The main floor of Skyview needs to be re-tiled. Using the information given, find out how much money it will cost to re-tile the entry, commons and wing entrances of the building.
- **Grouping instructions and roles**
Groups of 3: Facilitator, record keeper and spokesperson
- **Procedures – steps to follow/instructions**
Facilitator reads the instructions and organizes the group. All group member participate in finding the answer to the question using the attached dimensions. The record keeper records the answer and how you arrived at the answer. The spokesperson will report out to the whole group for discussion upon completion of the lab.
- **Outcome instructions**
Put the answer in the blank provided on the attached dimensions sheet.
- **Assessment instructions (peer-teacher)**
Correct answer is 20 points.
Wrong answer is REDO.

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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)

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