Lab Framework

Text: CORD

Unit number and title: Unit 3 Measuring in English and Metric Units

Short Description: The lab will consist of finding the cost to repaint the classroom blue with white ceiling trim without the use of a standard measuring device.

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Lab Title

Cost to Paint the YOUR classroom!

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**

  Students will be able to clearly (work shown for all steps) show all areas to be painted without the use of a standard measuring device i.e.: tape or ruler.

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

  Students should have a basic understanding of calculator use, and basic math facts as well as area and perimeter formula usage. Note: ceiling floor tiles are 2 feet by 4 feet rectangles.

- **Vocabulary**

  Conversion
  Label Method
  Area equations
  Perimeter equations
  English labels: feet, yards, inches, etc.
  Basic conversions

- **Materials List**

  Paint costs for indoor blue and white semi gloss paint.
  Pencils, Paper and Calculators
  Conversions (maybe)

- **State Standards addressed**

  Math: 4.4B

- **Leadership Skills**

  The groups will be split into groups consisting of 4. Each group will have a speaker/presenter, secretary/note taker, treasurer/cost analyzer and a carpenter/measuring developer.

- **SCAN Skills/Workplace Skills**

  Gather information using the minds eye
  Use creativity coupled with unique problem solving skills
  Decision making skills
  Communication skills
  Leadership skills
  Responsibility

- **Set-up information**
  Do a simple mock up of the white board painted a different color. Require that the group take good notes.
  At least one calculator per group
  Pencil and paper for all
  Current cost of blue and white paint by the gallon

- **Lab organization** (Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required)**
  Split groups as equally as possible and have them pick roles. If problems arise, flip a coin.
  Work as a group collaboratively to complete the problem.
  This is a one—two day lab depending on clientele.
- **Teacher Assessment of student learning** (scoring guide, rubric)
  Visual observation
  Works submitted
- **Summary of learning** (to be finished after student completes lab)
  Discuss real world application of learning from lab
  Have opportunity for students to share/present learning
  Discuss different ways to find the cost (who did it easier?)
  Group discussion on how to maximize efforts/minimize time
- **Optional activities**
  Find the cost to paint the football bleachers, which will include trapezoids and triangles and would require a different measuring device (foot size, stride length, measure from the football field a 10 yard string)
- **Career Applications**
  Painter, Designer, Information gatherer, working as a team

LAB TITLE: **Cost to Paint the YOUR classroom!**
STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
  What will it cost to paint the classroom without the cost of labor?
  What do I use for a measuring device?
  How do I convert area to be painted to cost?
  How do I know how much paint to buy (how much area does the paint cover)?
  Area/Perimeter equations?
- **Grouping instructions and roles**
  Class will be split up randomly by the counting off method to produce groups of four students.
  Each group will have a speaker/presenter, secretary/note taker, treasurer/cost analyzer and a carpenter/measuring developer.
- **Procedures** – steps to follow/instructions
  Decide who will be who. Flip a coin or draw straws if need be.
  Find a way to measure.
  Measure the walls, windows, doorway and chalkboard that is not to be included in your estimate of cost (those things that will not be painted).

- **Outcome instructions**
  You should have a relatively close estimate of the cost to paint the classroom.

- **Assessment instructions** (peer-teacher)
  Your teacher will be monitoring your progress as you progress through the activity. It is really important that all take responsibility and act on their job as would be expected in the real work place.

Lab Data Collection

Student: _____ Date: _____

Unit: Unit 3 Measuring in English and Metric Units

Lab Title: Cost to Paint the YOUR classroom!

Criteria: Write the problem/objective in statement form

What are we trying to accomplish with this lab today?

Data Collection: Record the collected/given data

What are the measurements of the room (general dimensions)?

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

Find the total area of each wall of the room minus the windows, door, cupboards/cabinets, windows and white board. Show all work!

Summary Statement:

Now that you have completed this lab, did you have fun?

Did you learn or reinforce anything you have learned in this unit?

How could you apply this to everyday living?

How could I (teacher) make this more real to you in regard to real world application?

Other Assessment(s)

Pencil paper test
Individual or group board work in front of class
Observation of daily work that each student completes