Lab Framework

Text: Applied Math

Unit number and title: Unit 23 – Factoring

  Short Description: Your team uses factors to determine the area of a wall.

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Lab Title
The Area of a Wall

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
  Works with binomials, trinomials and factoring
- **Statement of pre-requisite skills needed**
  Proficiency in variable substitution and using exponents
- **Vocabulary**

- **Materials List**
  One stick and one 6" ruler for every team of two students
- **GLEs (State Standards) addressed**
  Math:
  EALR 1: The student understands and applies the concepts and procedures of mathematics.
    COMPONENT 1.5: Understand and apply concepts and procedures from algebraic sense.
      1.5.4 Use variables to write expressions, linear equations, and inequalities that represent situations involving rational numbers, whole number powers, and square roots. W
      1.5.5 Apply algebraic properties to simplify expressions involving whole number exponents. W

  Reading: (Reading)
  Writing: (Writing)
- **Leadership Skills**

- **SCAN Skills/Workplace Skills**

- **Set-up information**
  Select the wall to be measured.
- **Lab organization** -**Timeline required**
  Teams of two students.
- **Teacher Assessment of student learning** (scoring guide, rubric)
  Accuracy of final solution
- **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**

  Add on calculations for buying paint to paint the wall

- **Career Applications**

  In retail, factors can be used to calculate the area of a wall based on the shelving units covering it. The shelves are the sticks.

  In shipping, factors can be used to calculate the volume of boxcar based on the standard shipping containers filling it.

LAB TITLE: Measure a Wall
STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
  Measure a wall with only a stick and a ruler.

- **Grouping instructions and roles**
  Work in teams of two

- **Procedures** – steps to follow/instructions
  1. Measure in wall in "sticks", using the stick. Record results.

  2. Measure any remainder using the 6" ruler. Record results.

	In sticks	Remainder
Height of wall		
Length of wall		

  3. Develop a trinomial.
     Example:
     (height) * (width)
     (# of sticks + inches) * (#of sticks + inches)
     (16 sticks + 4) * (7 sticks + 3)
     $112 \text{ sticks}^2 + 76 \text{ sticks} + 12$

     Your trinomial:

  4. Measure the stick using the 6" ruler. _____

  5. Solve your trinomial by substituting the actual value of the stick from step #4.

  6. Convert your total square inches to square feet.

- **Outcome instructions**

- **Assessment instructions** (peer-teacher)
  The team with the closest answer wins

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)