

Unit 3: Measuring in English and Metric Units Lab Exercises:

Equipment Needed: Tape Measures, Calculator, Pencil, Paper, and Eraser.

Problem: Today we need to measure the classroom in order to prepare an estimate for the ACME Carpet Company who will be replacing the carpet. This Company needs measurements in both the English System and the Metric System.

Discussion: Why is it a good idea to pre-measure for yourself before you have a company come in to replace carpet?

Directions: Work in your cooperative groups (of four) to collect the measurement of each wall of the classroom. You will have to measure the "odds and ends" of this irregular shape. Remember that in older buildings one cannot count on walls being congruent.

Note: At every step of this process ask yourself, "Does my answer make sense?" Keep in mind that a foot is about the length of your foot and a meter is a little longer than a yard.

- 1. The Recorder:** Record the measurements of each wall on a rough drawing of our classroom.
- 2. The Measuring Team (2 people):** Measure the walls as accurately as possible and make sure to double-check your accuracy.
- 3. The Hunter/Gatherer:** Collect all equipment and then return it at the end of the class. You are also responsible for managing this project and making certain that your team is "on task" and "on schedule."
- 4. Everyone:** Once the measurements are taken then make a drawing of our classroom in your notebook using information from "The Recorder" then label all sides. When you have all this data then calculate the area of our classroom using English Units. Next, convert all wall measurements to Metric Units and then calculate the area of our classroom using Metric Units.

Hint: You will need two drawings of our classroom - one for each set of units.

Kim Sweet
January 18, 2008

5. Everyone: When you are finished, write a business letter to the ACME Carpet Company that includes your drawings, your calculations, and your estimate of how much carpeting we will need to replace the existing carpet in our room.

Extension: The ACME Carpet Company gives a 15% discount for schools due to the pre-estimates that students complete. Ms. Sweet is considering a durable carpet with a 10-year warranty that usually sells for \$13.99 per yard. She is also considering another super-durable carpet with a 20-year warranty that sells for \$18.99 per yard.

Q: What would be the total price of each style of carpet BEFORE the discount?

Q. What would be the total price of each style of carpet AFTER the discount?

Q. Which carpet do you think Ms. Sweet should buy? Write an explanation of your thinking in the persuasive style.

Leadership: Group Skills:

2.3 The student will analyze the complex responsibilities of the leader and follower and demonstrate the ability to both lead and follow.

GLE's:

1.2.3: Apply unit conversions within measurement systems, U.S. or metric, to maintain an appropriate level of precision. EXAMPLE: Use procedures to convert derived units of measure.

2.2.2: Apply mathematical concepts and procedures from number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense to construct solutions. EXAMPLE: Select and use appropriate concepts and procedures to construct a solution.

2.2.4: Determine whether a solution is viable, is mathematically correct, and answers the question(s). EXAMPLE: Determine whether the solution is reasonable for the situation.

3.3.2: Evaluate reasonableness of results. EXAMPLE: Verify that the solution to a real-world problem makes sense in relation to the situation.

4.2.3: Use mathematical language to explain or describe mathematical ideas and information in ways appropriate for audience and purpose. EXAMPLE: Use both everyday and mathematical language and notation to explain, defend, or present mathematical ideas, facts, procedures, or strategies appropriate for a given audience or purpose.

5.3.1: Understand that mathematics is used extensively in daily life outside the classroom. EXAMPLE: Describe situations in which mathematics can be used to solve problems with local, national, or international implications.

5.3.2: Understand that mathematics is used in many occupations or careers. EXAMPLE: Describe specific examples of mathematics associated with a given career.