Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**A Room Full of Candy**

Goal: Students will be able to apply their knowledge of volume, area, and measurements to authentic scenarios.

Objectives:

* Using various measuring tools, students will accurately measure various objects.
* Using a calculator, students will be able to make conversions between units of measurements.
* After finding necessary measurements, students will be able to calculate its volume/area.
* Given one dimension, students will be able to use their knowledge of proportions and similar shapes to solve for the other dimensions.
* Given the price of one unit, students will be able to find the total price of x units.

Imagine you are responsible for filling a new pool with water, or a column with cement to hold a building up. It is important to have the correct measurements and calculations of volume so you do not bring too much, or not enough supplies, and don’t incur extra costs. In addition, those who hired you will need an estimate of how long the job will take you and your crew members to complete.

To simulate these scenarios, you will assemble a crew (group of 3) to take measurements of the classroom, and determine how many pieces of candy it will take to fill the classroom, and what it will cost the person that hired you.

|  |  |  |
| --- | --- | --- |
|  | **Measurements of Candy** | **Measurements of Classroom** |
| **Length** |  |  |
| **Width** |  |  |
| **Height** |  |  |
| **Volume** |  |  |

**Materials:**

* Tape measure
* Ruler
* Candy
* Worksheet
* Calculator

**Procedure:**

**Data Collection**

1. Take measurements of the classroom and candy bar. Use an appropriate unit of measurement, then use math to convert them to feet. Record the data in the table above.

2. Estimate how many pieces of candy you can carry at once. \_\_\_\_\_\_\_\_\_\_\_\_ pieces.

**Calculations**

3. How many pieces of candy will it take to fill the room?

4. If each candy bar is 75₵, how much will it cost for supplies?

5. Imagine the costumer now only wants the walls covered in the candy bars, floor to ceiling. How many pieces of candy will cover all the walls?

6. If the height of the room is 8 feet, what would the length and width of the room be to make the classroom similar to the candy?

7. If it takes you 30 seconds to carry candy into the room and place them where they are needed, how long would it take you and your crew to fill the room (in hours)? What limitations would you experience with this timeframe?

8. If your crew was triple the size, how long would it take to fill the room (in hours)?

9. If you and your crew charge $20 for each hour of work, and an additional $2 for each minute over an hour increment, how much will it cost the consumer for labor?

**Final Estimate:** Write up a final estimate to give the costumer for the cost it will take you and your crew to fill the classroom with candy. Be sure to include the cost of materials, cost of labor, expected time frame it will take to complete the job, and the sum of all expenses.