Skittle Mole Lab

Name: _____

REMINDER: ***NEVER EAT ANY FOOD WHILE IN THE LAB AREA OR ANY FOOD WHICH HAS TOUCHED LABORATORY GLASSWARE!***

Materials:

1 bag of Skittles graduated cylinder water (tap) meter stick notebook paper

Procedures:

1. Open your bag of Skittles AT YOUR DESK and count how many are in your bag. Place this count on line L of the data sheet.

2. Select 3 Skittles to sacrifice for the sake of science.

3. Take the three selected Skittles back to the lab area; leave the rest at your desk.

4. Using a graduated cylinder determine the volume of one, two and three Skittles using water displacement.

5. Record your data for the volume determination portion of the lab on lines A-G.

6. Wash your hands before returning to your desk!!

7. Using a calculator if necessary calculate the average volume of a Skittle. Record this on line H. Have Ms. Neiman look at your average to make sure you are on the right track.

8. Measure the volume of the hallway in <u>cubic meters</u> using the meter stick. Assume that the doorways and other features such as the water fountain do not exist. Place your calculated value for the hallway volume on line I. Have this number approved by Ms. Neiman.

9. Convert your hallway volume to mL by multiplying the volume of the hallway in cubic meters by $1x10^6$. Place this value on line J.

10. Calculate the number of Skittles it would take to fill the hallway. Place this value on line K.

11. Calculate the number of bags of Skittles it would take to fill the hallway. Place this value on line M.

12. Assuming that your bag of Skittles cost $0.59, how much would it cost to fill the hallway with Skittles. Place this answer on line N.

13. What would the volume of 1 mole of Skittles be? (Hint: you need to know how many items are in a mole. This can be found in your textbook or online.)

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DATA CHART (to be reproduced in your lab report) MUST HAVE UNITS!!!!

A._____	**Volume of water in graduated cylinder**
B._____	**Volume of water with 1 Skittle**
C._____	**Volume of water with 2 Skittles**
D._____	**Volume of water with 3 Skittles**
E._____	**Volume of 1 Skittle**
F._____	**Volume of 2 Skittles**
G._____	**Volume of 3 Skittles**
H._____	**Average volume of 1 Skittle**
I._____	**Volume of the hallway in cubic meters**
J._____	**Volume of the hallway in cubic centimeters**
K._____	**Number of Skittles needed to fill the hallway**
L._____	**Number of Skittles in 1 bag**
M._____	**Number of bags of Skittles to fill the hallway**
N._____	**Cost (in dollars) to fill the hallway with Skittles**
O._____	**The volume of 1 mole of Skittles**

Questions About Skittles- Answers 3-5 may be handwritten because you MUST show work.

1. How many items are in a mole (use your textbook if needed)?

2. If you actually filled the hallway with Skittles (assume that you would seal the doors, etc to make a square tube), would the actual amount be more or less? Why?

3. If a serving of 5 Reese's Peanut Butter Cups weighs 39 grams and the density of a Reese's Peanut Butter Cup is 1.28g/cm^3, How many Reese's Peanut Butter Cups would it take to fill the hallway? (this question is worth double points- 4 total points) You must show work to get credit for this question.

4. What is the volume of 1 mole of Reese's Peanut Butter Cups? Must show work.

5. How many times would you have to fill the hallway with Skittles to have 1 mole of Skittles? Must show work.