

S'mores Stoichiometry Lab

Here is your "chemical reaction" (recipe) for making s'mores:



Open your ingredients bag, and count & record the quantity of your ingredients:

of Gc: _____

of Mm: _____

of Cc: _____

Now, use dimensional analysis to calculate how many S'mores (**Sm**) can be produced from each ingredient:

Graham crackers

Marshmallows

Chocolate chips

Limiting Reactant = _____

Theoretical Yield = _____

Once Mr. A checks your calculations, you are ready to proceed with the "chemical reaction"! After the s'mores are done baking, calculate the actual yield and % yield:

Actual Yield = _____

% Yield = _____

1 Gc = 4.19 g
1 Mm = 0.56 g
1 Cc = 0.54 g

(ans bank (IRO+2): 2.0, 3.5, 8.2, 17.1, 21, 24)

While you're cooking your s'mores, use dimensional analysis to these problems:

1. How many Mm's are required to make 7 S'mores (Sm)?
2. How many Sm can be made with 29.5 g of Gc?
3. How many Sm can be made with **65.1 g Gc**, **7.20 g Mm**, and **6.48 g Cc**?
4. Suppose you had 120.0 g of Gc. How many g of Mm would you need such that you'd have no leftovers?
5. Explain why chemists would use the concept of *limiting reactant* when conducting chemical reactions, especially large scale reactions.