

* This is not a Spring Break project *
I'm giving it in advance to allow those that
want to start, to do so *

Due: March 28, 2021

Stoichiometry Project Test Grade

Choose a recipe with at least 5 ingredients

You may not have the same recipe as another student in the classroom.

. First come, first serve.

My recipe is _____

You will use stoichiometry to calculate how much the recipe would cost to feed 30 people in your classroom.

- Display the original recipe (5 or more ingredients)
- Show the calculations to determine the COST of each ingredient to serve 30 people (Stoichiometry)
 - You must go to the store and take a picture with each price tag, cut the ad or print online **for each ingredient**
 - You must show every conversion factor/ratio
- Show the total cost to serve 30 people

- Include the recipe and write in a balanced reaction form .
- Show all calculations for each ingredient
- Measurements should include to tenths place
- Create a scenario, focus on two ingredients, and the other ingredients are excess. Create the scenario so that one ingredient is limiting and one ingredient is excess. Calculate excess ingredient remaining. Include this on your poster.

- Include the recipe and write in a balanced reaction form
- Paste images/price tag/picture of each ingredient
- Show two example calculations of ingredient to cost
- Picture of the food
- Include limiting and excess scenario calculations

↖ See Example

→ Extra Credit: Make a 5 minute "Cooking Show" - Style Video of cooking your recipe.

PBJ recipe
 1 tbsp Pb 2 slices bread
 1 tbsp J

YOUR INGREDIENT AMOUNT
 ↓

$$30 \text{ people} \times \frac{1 \text{ tbsp Pb}}{1 \text{ person}} \times \frac{1 \text{ Jar}}{\$26 \text{ tbsp}} \times \frac{\$5.49}{1 \text{ Jar}} = \$6.33$$

ALWAYS START WITH 30

YOUR RECIPE SERVING SIZE

30 people → tbsp → jar → \$ cost

COOKIE RECIPE

SERVES 12
 2 eggs 1/2 cup sugar
 1 cup flour etc

$$30 \text{ people} \times \frac{2 \text{ eggs}}{12 \text{ people}} \times \frac{1 \text{ carton}}{12 \text{ eggs}} \times \frac{\$1.00}{1 \text{ carton}} = \$0.42$$

30 people → eggs → carton → \$ cost

$$30 \text{ people} \times \frac{.5 \text{ cup sugar}}{12 \text{ people}} \times \frac{7.1 \text{ oz}}{1 \text{ cup sugar}} \times \frac{1 \text{ lb}}{16 \text{ oz}} \times \frac{1 \text{ bag}}{4 \text{ lb}} \times \frac{\$3.00}{1 \text{ bag}} = \$0.42$$

30 people → cup sugar → pounds → bag → cost

MADE UP
RATIOS
OR
CONVERSION
FACTORS

$$\frac{1 \text{ cup sugar}}{7.1 \text{ oz}}$$

$$\frac{1 \text{ cup M\&M}}{5.0 \text{ oz}}$$

SOME RATIOS MUST BE REASONABLE
MADE UP

(tblsp)
1 tablespoon = 2 oz
fl.

$$1 \text{ pound} = 16 \text{ oz} \quad (16\text{s})$$

$$1 \text{ cup} = 8 \text{ fluid ounces} \quad (\text{fl. oz})$$

Peanut Butter & Jelly

1 ^{1 Tbsp} Tbsp Pb 2 slices bread \rightarrow 1 sandwich
1 Tbsp J 1 person

How MUCH IS NEEDED?

CALCULATE THE EXACT AMOUNT FOR 30 SERVINGS

$$30 \text{ people} \times \frac{1 \text{ Tbsp Pb}}{1 \text{ person}} = 30 \text{ Tbsp Pb}$$

$$30 \text{ people} \times \frac{1 \text{ Tbsp J}}{1 \text{ person}} = 30 \text{ Tbsp J}$$

THEN MAKE UP VALUES, ONE TOO MUCH, ONE TO NOT ENOUGH
(MAKE UP VALUES) Theoretical Yields

Scenario

40 Tbsp Pb \leftarrow EXCESS
25 Tbsp J \leftarrow LIMITING

$$40 \text{ Tbsp Pb} \times \frac{1 \text{ sandwich}}{1 \text{ Tbsp Pb}} = 40 \text{ sandwich}$$

$$25 \text{ Tbsp J} \times \frac{1 \text{ sandwich}}{1 \text{ Tbsp J}} = 25 \text{ sandwich}$$

CONVERT LIMITING to EXCESS to CALCULATE HOW MUCH USED

$$25 \text{ Tbsp J} \times \frac{1 \text{ Tbsp Pb}}{1 \text{ Tbsp J}} = \underline{25 \text{ Tbsp Pb used}}$$

CALCULATE LEFT OVER

AVAILABLE - USED = LEFT OVER

$$40 - 25 = 15 \text{ Tbsp left over}$$