Name: _____ **Date:** _____

Bakery Botany: 3rd Grade Mole-cule Recipes!

Students act as master chefs, using unit conversion and ratios to balance ingredient 'equations' for a crowded classroom bake sale.

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1. Chef Chem is baking 'Mole-Cakes.' If 1 huge bag of flour represents 1 mole, and the secret recipe says for every 1 mole of flour you need 2 moles of sugar, how many bags of sugar do you need for 3 bags of flour?

A. 2 bags of sugar
B. 3 bags of sugar
C. 6 bags of sugar
D. 1 bag of sugar

2. True or False: In a balanced 'Cookie Equation,' the total number of chocolate chips you start with must be equal to the total number of chips found in the finished cookies.

A. True
B. False

3. If 1 mole of 'Zippy-Soda' weights 10 grams and 1 mole of 'Poppy-Juice' weighs 20 grams, which choice correctly describes a mixture of 1 mole of each?

A. The total mass is 30 grams
B. The total mass is 10 grams
C. The total mass is 2 grams
D. The total mass is 200 grams

4. A scientist has 12.044 x 10^23 particles of 'Glow-Dust.' Since 1 mole is 6.022 x 10^23, how many moles does the scientist have?

A. 1 mole
B. 2 moles
C. 3 moles
D. half a mole

5. True or False: If a reaction recipe requires 2 moles of 'Reactant A' for every 1 mole of 'Product B,' then 10 moles of A will create 20 moles of B.

A. True
B. False

6. You are building 'Toy-Molecules' using 2 wheels and 1 frame. If you have 10 wheels and 100 frames, what is the MAXIMUM number of Toy-Molecules you can build?

A. 100
B. 10

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C. 2
D. 5

7. If the molar mass of 'Blue-Element' is 5 grams and 'Yellow-Element' is 10 grams, what is the molar mass of a molecule made of 2 Blue and 1 Yellow?

A. 15 grams
B. 20 grams
C. 25 grams
D. 50 grams

8. True or False: A 'Mole' is a scientific word used to describe a very large, specific number of tiny particles so they are easier to count.

A. True
B. False

9. In the reaction: 3 Red + 1 Blue -> 1 Purple. To make 4 Purple molecules, how many Red pieces do you need at the start?

A. 3 pieces
B. 4 pieces
C. 12 pieces
D. 7 pieces

10. You have 1 mole of 'Brick-A' and 1 mole of 'Brick-B.' Brick-B is much heavier than Brick-A. Which statement is true about these two piles?

A. They have the same number of bricks
B. Pile A has more bricks
C. They have the same total weight
D. Pile B has more bricks