

# Cupcake Calculation Fun!

## Materials Needed:

- Cupcake recipe (provided below or your favorite)
- Ingredients listed in the recipe
- Measuring cups and spoons
- Mixing bowls
- Cupcake pan and liners
- Oven
- Paper and pencil
- Calculator (optional, for checking)

## Introduction:

Get ready to bake some delicious cupcakes! But did you know that baking is full of math? Today, we're going to use our arithmetic skills to become master cupcake bakers. We'll look at fractions, measuring, and maybe even figure out how much our cupcakes cost to make!

## Activity 1: Recipe Reading & Fraction Fun

Let's look at a simple vanilla cupcake recipe (makes 12 cupcakes):

- 1 1/2 cups all-purpose flour
- 1 cup granulated sugar
- 1/2 teaspoon baking soda
- 1/4 teaspoon salt
- 1/2 cup unsalted butter, softened
- 2 large eggs
- 1 teaspoon vanilla extract
- 3/4 cup buttermilk (or milk)

Discuss: What do the fractions mean (1/2, 1/4, 3/4)? Which fraction is largest? Smallest? How many 1/4 cups make 1/2 cup? How many 1/4 cups make 3/4 cup?

## Activity 2: Scaling the Recipe

Oh no! We need to make 24 cupcakes for a party. How much of each ingredient do we need now? Let's double the recipe!

- Flour:  $1 \frac{1}{2} \text{ cups} \times 2 = ?$
- Sugar:  $1 \text{ cup} \times 2 = ?$
- Baking Soda:  $\frac{1}{2} \text{ teaspoon} \times 2 = ?$
- Salt:  $\frac{1}{4} \text{ teaspoon} \times 2 = ?$
- Butter:  $\frac{1}{2} \text{ cup} \times 2 = ?$
- Eggs:  $2 \times 2 = ?$
- Vanilla:  $1 \text{ teaspoon} \times 2 = ?$
- Buttermilk:  $\frac{3}{4} \text{ cup} \times 2 = ?$

Work through the multiplication problems together. Remember how to multiply fractions and mixed numbers!

What if we only wanted to make 6 cupcakes? We would need to cut the \*original\* recipe in half. Calculate the amounts needed for 6 cupcakes (dividing by 2).

## Activity 3: Measuring and Mixing (The Baking Part!)

Carefully measure out the ingredients for the number of cupcakes you decided to make (12, 24, or 6). Follow the recipe instructions to mix the batter and bake the cupcakes. Pay attention to measurements!

#### **Activity 4: Baking Time & Cost (Optional)**

If the recipe says bake for 18-20 minutes, what time should you set the timer for if you put them in the oven at 1:10 PM?

If you want a challenge, try to estimate the cost! (Example: If flour costs \$3.00 for a 5lb bag (about 20 cups), how much does  $1\frac{1}{2}$  cups cost?)

#### **Conclusion:**

Look at your amazing cupcakes! Today you used fractions, multiplication, division, and addition/subtraction, all while baking. Math is everywhere, even in the kitchen! Enjoy your delicious mathematical creations!