



# BAKING IS PURE *SCIENCE*

**CUPCAKE BAKING** is a combination of science and artistry. Each ingredient plays a critical role in determining the texture, flavour, and structure of the final product.

## INGREDIENT AND SCIENTIFIC FUNCTION

### **FLOUR:**

**Function:** Provides structure. Flour contains proteins, (glutenin and gliadin), which form gluten when mixed with liquid. Gluten provides the framework for the cupcake.

### **SUGAR:**

**Function:** Sweetens and tenderises the cupcake. It holds moisture, keeping the cupcake moist.

### **BUTTER OR OIL:**

**Function:** Provides fat, which adds richness and moisture. Fats coat the flour proteins, preventing excessive gluten formation. Butter solidifies when it cools, helping to firm the cupcake.

### **EGGS:**

**Function:** Binds the ingredients together and provide structure. Eggs provide protein, which coagulates during baking, helping the cupcake hold shape.

### **MILK OR OTHER LIQUID:**

**Function:** Hydrates the dry ingredients and dissolves the sugar and leavening agents. With buttermilk or yogurt, the acidic components react with baking soda to produce carbon dioxide, giving extra lift to the cupcakes.

### **BAKING POWDER OR BAKING SODA:**

**Function:** Act as rising agents. Baking powder contains an acid and a base, which reacts to moisture and heat. This makes bubbles that make the cupcake rise.

### **IMPORTANT PROCESSES IN CUPCAKE MAKING**

When butter and sugar are creamed together, tiny air pockets are created which expand during baking, making the cupcake rise. Baking powder reacts in the heat of the oven, producing gas that expands and raises the cupcakes.

### **TEMPERATURE**

Cupcakes bake quickly at a higher temperature (typically 350°F/175°C). The heat helps activate the leavening agents, coagulate the proteins, and caramelize the sugars on the surface, giving a nice golden top and a moist, soft interior.





# EASY VANILLA CUPCAKES

## WHAT YOU NEED:

- 500g (2 cups) flour
- 1/2 tsp (2.5ml) salt
- 3/4 cup (187ml) sugar
- 2 eggs
- 1 cup milk
- 1 tsp vanilla essence
- 2 tsp (10ml) baking powder
- 1/2 cup (125g) softened butter



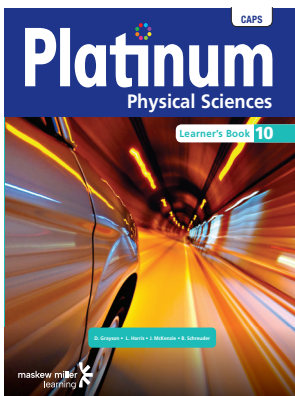
## WHAT YOU DO:

- 1 Preheat oven to 190°C.
- 2 Line muffin tin with paper cups.
- 3 Cream butter and sugar till light and fluffy (make sure the butter is at room temp so the mixture doesn't clump).
- 4 Beat in eggs, one at a time.
- 5 Add flour (mixed with baking powder and salt) alternating with milk. Beat well and stir in vanilla.
- 6 Divide evenly among the tin and bake for 18 minutes.

STOP,  
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WHAT DOES THE BAKING SODA SAY WHEN HE GETS SAD?

I'm sodapressed. 

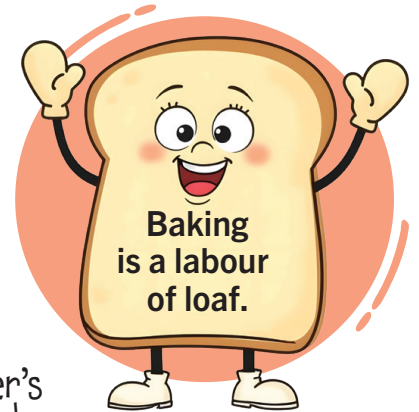
GOOD BAKERS WILL ALWAYS RISE TO THE OCCASION, IT'S THE YEAST THEY CAN DO.

## THESE JOKES TAKE THE CAKE!



What ingredient is essential when baking a Star Wars cake?    
BICARBONATE OF YODA.

Why did the baker cross the road?  
He had muffin' else to do!




Baking is a labour of loaf.

I heard the baker's parents were also bakers. You could say he was bread for the job.

WHY DID THE MATH STUDENT TAKE UP BAKING?

She heard it's as easy as pi.

When is a baker's favourite time of year?  
YEASTER!

 I was baking a premade pie and the instructions told me to put it in the oven at 180 degrees. Now I'm left with an upside-down pie in an oven.

WHAT DO YOU CALL IT WHEN SOMEONE ILLEGALLY BAKES BREAD?  
BAKING BAD.