

Make Cupcakes

Description

In this activity, students will make white or chocolate cupcakes from scratch. The students will identify the different stages of the process. They will read a cupcake and frosting recipe, scale the recipe to yield the required quantity, gather ingredients and tools, measure ingredients accurately, mix, make up, bake, and decorate the cupcakes.

Lesson Objectives

Students will be able to:

- understand ingredients and their functions in cake making
- calculate the amount of ingredients needed to produce the desired amount of product
- prepare cupcakes using safe food handling practices with the appropriate equipment according to recipe or formula
- apply knowledge of mixing methods to produce a well-risen product
- make frosting with appropriate consistency and apply decoratively to garnish a finished product, and
- evaluate the finished product.

Safety Considerations

Basic food and kitchen safety

Assumptions

The student understands ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Bench/counter: A workspace of appropriate height and material for processing recipes.

Chemical leavener: A leavening agent (sodium bicarbonate, also known as baking soda) used alone or with a combination of acids (baking powder) incorporated into many baked goods in order to aerate them by the formation of carbon dioxide in the presence of heat and water.

Creaming method: The method of blending butter and sugar together before the remaining ingredients, incorporating air into an emulsified mixture which aids the crumb texture of the cake as well as assists in leavening.

Emulsion/emulsification: A mixture or mixing process by which two unmixable ingredients are held in a uniform suspension (e.g., oil and water, cake batter, mayonnaise).



Frosting/icing: A topping usually based on sugar and fat (often flavoured and coloured) applied to finished cakes.

Garnish: An adornment or embellishment that decorates a food item.

Leavening: The process whereby gas is created during baking, enabling the dough or batter to rise.

Muffin pan: A baking pan with individual cups used to hold cake batter.

Piping bag/pastry bag: A cone-shaped bag often of cloth or plastic, through which various ingredients are forced through a shaped tube.

Plastic scraper: A flexible bowl scraper that has a curved edge and a straight edge. Has multiple uses, and in this context, is used for scraping or cleaning up batter or dough in a bowl or from the table.

Piping tip: A small plastic or metal tip that sits in a pastry bag and delivers the contents of the bag in a decorative, consistent manner.

Scaling: The act of measuring ingredients by weight or volume; usually the first step in the baking of products.

Scoop: A hand-held, semi-spherical tool which measures and deposits an accurate quantity of batter. (verb: the action of depositing batter.)

Yield: The amount of product produced from a specific recipe or formula.

Estimated Time

45–60 minutes: Make and bake

45 minutes: Decorate and garnish

Recommended Number of Students

This activity may be done individually or in pairs.

Facilities

Home Economics lab or cafeteria kitchen

Resources

Super Moist Chocolate Cupcakes

<https://sallysbakingaddiction.com/2017/06/22/super-moist-chocolate-cupcakes/>

Cakes by Lynz: My Cupcake Piping Techniques

<https://www.youtube.com/watch?v=TPKqIScLKmk>

What Happens When You Overmix Cake Batter

<http://www.cupcakeproject.com/2014/05/what-happens-when-you-overmix-cake-batter.html>

Demonstrating Skills And Knowledge

Procedure

1. Make sure all ingredients are at room temperature.
2. Demonstrate making a batch of cupcakes (optional).
3. Review safety procedures.
4. Divide students into pairs if necessary.
5. If a scale is not available, have students perform the calculations to convert from grams to volume measurement (cups and spoons).
6. Have students write a list of tools that they will need and gather them.
7. If you wish to reduce the output, have the students scale the recipe for 12 cupcakes weighing 75 grams each.
8. Discuss sifting and emulsification.
9. Explain why the batter should not be over-mixed.
10. During baking, discuss the leavening process.
11. Wait for cupcakes to cool before frosting.
12. Decorate to taste.
13. Remind students to take photos of the cupcakes for their portfolio.
14. Evaluate cupcakes for quality, taste, and texture.
15. Clean up and review.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Follows health and safety guidelines.				
Applies mathematical principles to appropriately scale recipe to desired yield.				
Measures ingredients accurately to ensure uniform cakes and correct texture.				
Demonstrates ability to set oven temperature and assess when product is baked.				
Cools and stores product properly.				
Demonstrates ability to evaluate cakes for quality, taste, and texture in the form of self-reflection notes.				

Basic White Cupcakes

Yield

928 g (16 cupcakes)

Ingredients

110 g butter
225 g sugar
2 large eggs
50 g all purpose flour
150 g cake flour
 $\frac{3}{4}$ tsp baking powder
 $\frac{1}{2}$ tsp baking soda
 $\frac{1}{2}$ tsp salt
 $\frac{1}{2}$ tsp vanilla extract
225 g sour cream or yogurt
15 g lemon or orange zest
30 mL lemon or orange juice

Preparation

1. Cream butter and sugar with an electric mixer starting at a low speed, building up to a high speed to ensure mixture will have a light fluffy consistency. Incorporate eggs one at a time. Mix in vanilla, salt, and zest.
2. Sift dry ingredients. Combine sour cream and juice.
3. With mixer on low speed, add flour mixture in three batches, alternating with two additions of sour cream/juice mixture.
4. Line cupcake pan with liners. Fill cups half full.
5. Bake at 160–180°C for approximately 25–40 minutes.
6. Make frosting while cupcakes are baking.
7. Test with cake tester or toothpick for doneness.
8. Let cool on wire rack and de-pan.
9. Fill piping bag (fitted with an appropriate tip) with frosting half full.
10. Once cooled, pipe onto cupcakes.
11. Garnish if desired.

Basic Chocolate Cupcake Recipe

Yield

928 g (16 Cupcakes)

Ingredients

125 g pastry flour (can substitute $\frac{1}{2}$ all-purpose and $\frac{1}{2}$ cake flour)
75 g cocoa powder
1 tsp salt (If using salted butter, omit salt)
1½ tsp baking soda
1½ tsp baking powder
325 g sugar
3 large eggs
½ tsp vanilla
175 mL buttermilk
85 g butter (melted)
175 mL coffee (room temperature)

Preparation

1. Combine and sift all dry ingredients and set aside.
2. Beat eggs by hand for one minute with whisk.
3. Make a well in dry ingredients and stir until smooth.
4. Mix in the melted butter and coffee.
5. Line cupcake pan with liners. Fill cups half full.
6. Bake at 160–180°C for approximately 25–40 minutes.
7. Make frosting while cupcakes are baking.
8. Test with cake tester or toothpick for doneness.
9. Let cool on wire rack and de-pan.
10. Fill piping bag (fitted with an appropriate tip) with frosting half full.
11. Once the cupcakes have cooled, pipe the frosting onto cupcakes.
12. Garnish if desired.

Basic White Frosting

Ingredients

113 g unsalted butter
250 g icing sugar
1½ tsp vanilla
30 g milk
food colouring (optional)

Method

1. Soften butter and gradually add sugar until fluffy.
2. Add milk and vanilla. Adjust milk until correct consistency is achieved.
3. Add food colouring if desired.
4. Pipe on cupcakes.

Basic Chocolate Frosting

Ingredients

85 g unsalted butter
330 g icing sugar
35 g cocoa powder (increase cocoa powder for more intense flavour)
120 g milk
1 tsp vanilla

Method

1. Soften butter and gradually add sugar and cocoa powder until fluffy.
2. Add milk and vanilla. Adjust milk until correct consistency is achieved.
3. Pipe on cupcakes.