

Quick Breads

SECTIONS

28.1 Making Biscuits

28.2 Making Muffins

WRITING ACTIVITY

Compare and Contrast Paper

Biscuits and muffins are two different types of quick breads, but they have similarities as well. Write a compare and contrast paper that identifies what you believe are the similarities and differences between biscuits and muffins.

Writing Tips

- 1 Use a graphic organizer to map your ideas.
- 2 Organize your comparison by subject or by features.
- 3 Use appropriate transition words and phrases.

EXPLORE THE PHOTO

Quick breads make a good breakfast choice, but can be served at any meal. *Why do you think quick breads make a good breakfast choice?*



Making Biscuits

Reading Guide

Before You Read

Create an Outline Use the section's heading titles to create an outline. Make the titles into Level 1 main ideas. Add supporting information to create Level 2, 3, and 4 details. Use the outline to predict what you are about to learn.

Read to Learn

Key Concepts

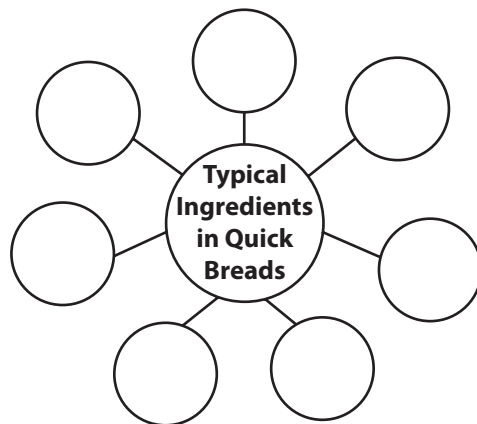
- **Compare and contrast** the biscuit, blending, and creaming methods of mixing.
- **Deconstruct** the steps required to make quality biscuits.

Main Idea

Quick breads are products with a bread- or cake-like texture that do not contain yeast. They do not require a lot of time or equipment to produce.

Graphic Organizer

As you read, use a web diagram like this one to show the seven different typical ingredients in a quick bread.



Graphic Organizer Go to this book's Online Learning Center at glencoe.com for a printable graphic organizer.

Biscuits and other quick breads are a good choice for breakfast and other meals.

ACADEMIC STANDARDS



English Language Arts

NCTE 12 Use language to accomplish individual purposes.



Mathematics

NCTM Measurement Understand measurable attributes of objects and the units, systems, and processes of measurement.



Social Studies

NCSS I A Culture Analyze and explain the ways groups, societies, and cultures address human needs and concerns.

NCSS II D Time, Continuity, and Change Employ processes to validate and weigh evidence for claims.

NCTE National Council of Teachers of English

NCTM National Council of Teachers of Mathematics

NSES National Science Education Standards

NCSS National Council for the Social Studies

Types of Quick Breads

Quick breads are baked goods that can be served at breakfast, at lunch, or with dinner. Some examples of quick breads are pancakes, biscuits, muffins, scones, waffles, and loaf breads.

Quick breads are those products that have a bread- or cake-like texture, but do not contain yeast. Therefore, quick breads do not need to rise or proof before baking. Instead of using yeast, quick breads use chemical leavening agents such as double-acting baking powder and baking soda.

Quick breads are typically baked on sheet pans or in loaf and muffin pans. Quick breads can be plain, lightly glazed, sprinkled with confectioner's sugar, or frosted. They can be served warm or cold. Quick breads can be part of a more complex dish, or can be served as a main dish of their own.

Typical ingredients in a quick bread product are flour, eggs, fat, sugar, salt, a chemical leavening agent, and a liquid. Flour is the foundation of quick breads. A combination of hard and soft wheat flours produces the best quick bread products. Eggs provide

added volume and structure. They are a natural leavening agent. Fat is used to keep the baked product moist and tender. It also helps in creaming, or mixing. Sugar and other sweeteners, such as brown sugar or molasses, improve the flavor and color of quick breads. Sugar also helps in creaming. Salt strengthens gluten and adds flavor.

In addition, leavening agents, such as double-acting baking powder or baking soda, allow quick breads to leaven, or rise. The liquid, typically milk, adds moisture. It allows the dry ingredients to be blended into a batter or dough. Liquid also helps produce gluten.

The same ingredients are used in most quick breads. However, the proportion of these ingredients varies. The proportion of ingredients is determined by the product that is being made. Some specialty quick bread doughs, such as phyllo dough and *pâte à choux* can be used for both appetizers and desserts.

The flour used in quick breads ranges from wheat to oatmeal. Grains such as bran and cornmeal are often added for flavor and texture. Spices, nuts, fruits, and other ingredients may be added to create interesting flavors.



Types of Batter Pour batters and drop batters have different consistencies. *Why do you think there is a difference in consistency between the two batter types?*

FIGURE 28.1 Quick Bread Ingredient Proportions

Quick Breads Quick breads can be made from thick and thin batters and doughs.
Why do you think different quick breads require different forms of batter and dough?

Quick Bread Products	Amount of Flour	Amount of Liquid	Consistency
Biscuits (soft doughs)	Three parts	One part	Sticky, pliable
Pancakes (pour batters)	One part	One part	Thin, pours
Muffins and Fritters (drop batters)	Two parts	One part	Thick, forms in drops

Quick Bread Methods

Quick breads are produced by one of three methods: the biscuit method, the blending method, or the creaming method.

- The **biscuit method** requires cutting the fat into the dry ingredients. This is done until the fat and dry ingredients resemble cornmeal. Then, the liquid ingredients are added. This process produces flaky items such as biscuits.
- The **blending method** combines the liquid, sugar, liquid fat, and eggs at the same time. Then, the dry ingredients are added to the mixture. The liquid fat and sugar act as a tenderizer. The blending method is most commonly used to make muffins and fruit breads.
- The **creaming method** involves using solid shortening instead of liquid fat. In this method, the sugar and pre-softened shortening are creamed together with a mixer on low speed until the mixture is light and fluffy. The eggs are then added one at a time. After the eggs are added, the dry and liquid ingredients are alternately added. Muffins made by the creaming method are more cake-like in texture.

The type of quick bread and the **consistency**, or texture, of its dough or batter determine which method you should use.

Quick breads can be made from soft doughs or batters. (See **Figure 28.1**.) Soft doughs are thicker in consistency than batters. They can be rolled and cut into shapes prior to baking while batters cannot. Baking powder biscuits and scones are examples of soft dough quick breads.

Quick bread products, such as pancakes and muffins, are made from either a pour batter or drop batter. A **pour batter** will often vary in consistency. Some are so thin they can be poured from the mixing bowl to the cookware just like water. Others are almost as thick as drop batters. A **drop batter** is usually so thick it needs to be scraped or dropped from a portion or ice cream scoop to the cookware.

 **Reading Check** Describe What are two characteristics of quick breads?

The Biscuit Method

Biscuits are a popular baked item in many foodservice operations. They are typically served at breakfast. Biscuits vary in shape, size, and filling, and are simple to make. Proper mixing is the key to producing quality biscuits. Overmixing will produce tough biscuits.

The basic ingredients in biscuits are flour, a leavening agent, shortening, sugar, salt, and milk. Sometimes eggs and butter are used to improve quality and flavor.

Eggs also build structure. They increase the volume of biscuits by acting as a natural leavening agent. If you decide to add eggs to your biscuit mixture, you will need to adjust the amount of other leavening agents.

The biscuit method is used most often when you make dough products such as biscuits and scones. As you have read, the biscuit method involves cutting in the fat with the dry ingredients. This method typically is performed by using a mixer on low speed. Be careful not to overmix.

Use the Biscuit Method

1 Prepare the sheet pan. Grease the sheet pan with a commercial pan grease or line the pan with parchment paper.

2 Scale, or measure, the ingredients. The measurements must be exact if the biscuits are to maintain quality.

3 Sift all the dry ingredients into the mixing bowl.

4 Cut or rub the shortening into the dry ingredients. This will result in a mixture containing small pieces of fat. This step can be performed using the mixer with either the paddle or pastry knife attachments.



5 Whisk the eggs and milk together in a separate stainless steel bowl.

6 Add the combined liquid ingredients to the flour mixture. Mix lightly. Be careful not to overmix. Overmixing will make the biscuits tough.



7 Take the mixed dough to a pre-floured bench and set it down. Flour the top of the dough by dusting it with bread flour.

8 Knead the dough lightly using your fingertips only. Then, fold it in half and rotate it 90 degrees. Continue this process about 5 to 10 times. Do not over knead. Over kneading will make the biscuits tough. The dough should be soft and elastic, but not sticky.



9 Allow the dough to rest 15 minutes before rolling.

Baking Biscuits

As soon as the biscuits are shaped and placed on the sheet pan, allow them to relax for 10 minutes before you bake them. This will allow the gluten to react and help the chemical reaction of the baking powder or baking soda. Place the sheet pans in a hot conventional oven. The oven temperature should be between 400°F (204°C) and 425°F (218°C). Bake the biscuits for approximately 8 to 10 minutes. The tops of the biscuits should be lightly browned.

Remove the sheet pans from the oven and allow the biscuits to cool on wire racks. Serve the biscuits immediately. Butter, jam, preserves, and honey can accompany the biscuits. Biscuits can also be served with gravy.

Quality Biscuits

When checking the quality standards for biscuits, you should first make sure the mixture is thoroughly blended. This must be achieved without overmixing. If the mixture is over-mixed, the baked product will lack quality.

HOW TO

Cut and Form Biscuits

- 1** Roll the prepared dough onto a pre-floured surface. The dough should be rolled out to about ½- to 1-inch in thickness.
- 2** Check the dough's depth. Make sure the dough is uniform in thickness. Biscuits double in height during baking.
- 3** Cut the dough into shapes using a round hand cutter or pastry knife. When using a hand cutter, be sure to cut straight into the dough. Do not twist the cutters. Twisting can prevent the dough from rising correctly.
- 4** Place the raw biscuits on a sheet pan lightly greased with commercial pan grease or lined with parchment paper. The sides of the dough should not be touching. Brush the tops of the raw biscuits with egg wash prior to baking. This will make the crust golden in color.



Small Bites

Cut Biscuits When you cut biscuits into shapes, make your cuts as close together as possible. The goal is to eliminate scrap. Scraps will need to be reworked, rerolled, and cut, and reworked dough is tougher. For this reason, a pastry cutter or knife often is the best tool to use when you cut biscuit dough into shapes.

Rolled and cut biscuits should be light, tender, and flaky. Properly kneading and cutting the dough determines this quality. Over kneading or twisting the hand cutters can **deflate** the dough, or cause the dough to lose volume. Biscuits should have high volume.

There are several quality standards you should meet when you bake biscuits.

- **Appearance** Biscuits should be the same size with flat tops and straight sides.
- **Color** Biscuits should have a golden brown crust. The crumb should be creamy or flaky, depending on the type of biscuit.
- **Texture** Rolled and cut biscuits should be light, tender, and flaky. Flaky biscuits should easily separate into layers when they are broken apart. This **separation**, or dividing, is due to the fat that melts between the layers during baking. The fat separates the layers.
- **Flavor** Biscuits should have a pleasing, delicate flavor. A bitter flavor may indicate too much baking powder or baking soda. You may want to add different flavor ingredients to the mixture for variety. Such ingredients include herbs, chives, cheese, and bacon.



Baked Biscuits Quality biscuits are a favorite accompaniment to many meals. *What characteristics do quality biscuits have?*

Cooling and Serving Biscuits

Biscuits can be cooled on wire racks after baking. However, they are best served when hot. You can serve biscuits throughout the day. Most foodservice operations offer them at all meals.

There are many items that you can serve with biscuits to add flavor and variety for customers, including:

- honey
- butter
- honey butter
- jam
- preserves



Reading Check

Summarize How are biscuits cut and formed?

A TASTE OF HISTORY

1834

Harrod's, known for its afternoon tea, opens in London

1837

Abraham Lincoln receives his license to practice law

Biscuits and Scones

The American biscuit is very similar to what the English call a scone, although it does not taste as rich. It is suggested that when British colonists were unable to get the fresh butter and eggs they needed, they substituted lard and omitted eggs. This was the start of the American biscuit.

History Application

Prepare two recipes: One of biscuits and one of scones. Compare textures, flavors, and appearance. Which is most appealing? Why? Create a chart or spreadsheet to show the results.

NCSS II D Time, Continuity, and Change Employ processes to validate and weigh evidence for claims.

SECTION 28.1

After You Read

Review Key Concepts

1. **Explain** the biscuit method of mixing.
2. **Describe** the quality standards to aim for when making biscuits.

Practice Culinary Academics



English Language Arts

3. Imagine that you are opening a small cafe that will serve coffee and quick breads. First, decide what type of quick breads you will offer, and find recipes for those quick breads. Then, create a menu listing to describe your quick bread offerings.

NCTE 12 Use language to accomplish individual purposes.



Social Studies

4. Quick breads are found in the cuisine of many cultures around the world. For example, in Ireland, soda bread became popular after bicarbonate of soda was introduced, because Irish wheat does not rise well with yeast. What other examples of quick breads from around the world can you find? Create a chart to show their characteristics.

NCSS I A Culture Analyze and explain the ways groups, societies, and cultures address human needs and concerns.



Mathematics

5. Carrie is preparing biscuits that are each $\frac{5}{8}$ -inch tall before baking. If the biscuits double in height during baking, how tall will each finished biscuit be, in centimeters?

Math Concept Converting Length

Measurements The closest metric distance measurement to the inch is the centimeter. One inch = 2.54 centimeters, while one centimeter = 0.3937 inch. To convert inches to centimeters, multiply inches by 2.54.

Starting Hint Multiply $\frac{5}{8}$ by 2 to find the final height of a biscuit. Convert that fraction to a decimal by dividing the numerator by the denominator. Multiply that number by 2.54 to convert to centimeters.

NCTM Measurement Understand measurable attributes of objects and the units, systems, and processes of measurement.



Check your answers at this book's Online Learning Center at glencoe.com.

Making Muffins

Quality muffins must be made carefully.

Reading Guide

Before You Read

Use Diagrams As you read through this section, write down the main idea. Write down any facts, explanations, or examples you find in the text. Start at the main idea and draw arrows to the information that directly supports it. Then, draw arrows from these examples to any information that supports them.

Read to Learn

Key Concepts

- **Explain** the blending and creaming methods of mixing muffins.
- **Describe** how to make quality loaf quick breads.
- **Outline** the steps used to bake quality muffins.

Content Vocabulary

- baking cup
- elastic
- tunnels
- potency
- streusel
- walls
- aftertaste

Academic Vocabulary

- desired
- deteriorate

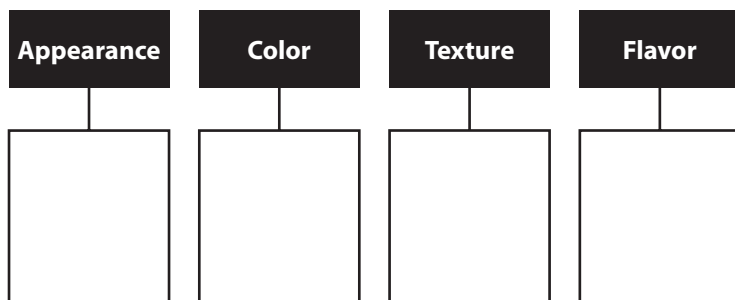
Main Idea

Muffins use the blending or creaming mixing methods. Knowing how to prepare quality muffins is a useful skill for a foodservice employee.

Graphic Organizer

As you read, use a tree diagram like this one to list the quality characteristics of muffins.

Quality Characteristics of Muffins



ACADEMIC STANDARDS

English Language Arts

NCTE 5 Use different writing process elements to communicate.

Mathematics

NCTM Number and Operations Compute fluently and make reasonable estimates.

Science


NSES B Develop an understanding of chemical reactions.

NCTE National Council of Teachers of English

NCTM National Council of Teachers of Mathematics

NSES National Science Education Standards

NCSS National Council for the Social Studies

 **Graphic Organizer** Go to this book's Online Learning Center at glencoe.com for a printable graphic organizer.

Blending Method

Muffins can be bread- or cake-like in texture. This depends on the method that is used to mix the ingredients. Muffins can be different shapes and sizes. Muffins usually have fruit or nuts added to the mixture to add flavor and texture to the baked product.

The blending method is used to produce muffins, loaf breads, pancakes, and waffles. The blending method involves using oil or liquid fat to blend the ingredients. Batters for these baked goods are sometimes interchangeable. For example, bran muffin batter can be poured into a loaf pan instead of a muffin pan. The end result is bran loaf bread instead of bran muffins. You would need only to adjust the baking time.

The basic ingredients in muffins are flour, leavening agent, eggs, oil, sugar, salt, and a liquid. Flour blends may be used to increase the nutritional value of the product.

Muffins are made from a drop batter. They are leavened by a leavening agent, such as baking powder. The structure of the muffin is achieved when the flour, starches, gluten, and egg proteins coagulate during heating.

Small Bites

Use Liners To bake muffins that have a moist, tender exterior, line the muffin pans with paper cups. If you want muffins with a crust, omit the liners. Instead, grease the bottoms and sides of the muffin pans.

HOW TO

Blend Muffins

- 1 Sift the dry ingredients into a separate mixing bowl. Add sifted, dry ingredients to the liquid and sugar mixture.



- 2 Combine and blend the liquid ingredients with the sugar until smooth.



- 3 Mix together until the dry ingredients are just moistened. Do not overmix. This will make the batter tough. The batter should look lumpy.



Creaming Method

When you prepare cake-like muffins made with solid shortening, you will need to use the creaming method of mixing. The creaming method involves combining the sugar and fat first until light and fluffy.

When you cream muffins, use these steps:


1. Scale the ingredients.
2. Sift the dry ingredients into a separate mixing bowl and set aside.
3. Combine the solid fat and the sugar in the mixing bowl until smooth, fluffy, and creamy. Use the paddle attachment on the mixer.
4. Add the eggs one at a time. Blend well after each addition.
5. Add the flour and liquid ingredients alternately in approximately three parts. Continue to mix until the batter is smooth.

Dividing Muffin Batter


Dividing the muffin batter involves transferring the batter from the bench mixing bowl into individual muffin pans. Use a portion scoop to divide, or pan up, the muffins, scraping up the side and upper edge of the mixing bowl to level off the scoop.

It is important to divide the batter evenly. Using a portion scoop can help achieve this. You also can drop the batter into the pan by hand. To do this well requires practice. Fill the pans $\frac{1}{2}$ to $\frac{3}{4}$ full. Leave enough space for the muffins to rise as they bake.

You may want to line each muffin pan with baking cups. A **baking cup** is a paper lining that keeps the muffin from sticking to the muffin pan.

 **Reading Check** **Explain** How should you portion muffin batter?



 **Uniform Sizes** Muffins should be uniform in size when they are baked.
How can you help ensure this?

Loaf Breads

Loaf breads are similar in preparation to muffins. Like other quick bread products, loaf breads are made from flour, leavening agents, eggs, fat, sugar, salt, and a liquid. Baking powder is the chemical leavening agent used in loaf breads.

Loaf breads are made from a drop batter or a very thick pour batter. The baked product should have a uniform texture. The crust should be lightly browned, but not thick. The crumb should be tender and moist, not tough or dry. Loaf breads also should have rounded tops with a split down the center.

The time spent mixing loaf bread batter is crucial. Undermixing will result in a lumpy batter with dry pockets of flour. Overmixing will overdevelop the gluten. The batter will be stringy or elastic. **Elastic** means stretchy and flexible. The end product will be tough and will have **tunnels**, or large, irregular holes, in the crumb. When you mix loaf bread batter, you should mix it lightly. Mix it long enough to only blend all the ingredients. Then scale the batter into the pan.

You can alter the flavor of loaf breads by substituting or adding ingredients. For example, fold in walnuts, cranberries, or zucchini to make walnut bread, cranberry bread, or zucchini bread. You can also use bananas or pumpkin to make banana bread or pumpkin bread.

Quick Breads and Gluten

Unlike yeast breads, very little gluten is developed in quick breads. This is a **desired**, or wanted, result. Quick breads should be tender, not chewy. Too much gluten will result in a less tender product.

Quick breads use chemical leavening agents, such as baking soda or baking powder, instead of yeast and fermentation to rise. They will not turn out as expected if there is too much gluten in the mixture. Too much gluten will make the mixture heavy instead of light. This will create an inferior-quality quick bread.

Science à la Carte

Baking Soda or Baking Powder?

Baking soda is sodium bicarbonate, or NaHCO_3 . Because baking soda is a base, it can be mixed with an acid to produce carbon dioxide, or CO_2 . The CO_2 is what actually leavens the baked good. If you look through formulas that call for baking soda, there also should be an ingredient that is acidic, such as vinegar, fruit juice, or buttermilk. This acid is needed to produce the CO_2 .

If a formula calls for baking powder, an acidic ingredient probably is not used. This is because baking powder is a combination of baking soda, cornstarch, and a powdered acid such as cream of tartar. As the baked good mixture is heated, the acid within the baking powder mixes with the baking soda and produces the CO_2 necessary to leaven the baked good.

Procedure

Try this experiment to see how carbon dioxide is produced with baking soda and baking powder:

1. Add 1 teaspoon of baking powder to one bowl and 1 teaspoon of baking soda to another bowl. Add a tablespoon of water to each bowl. Record your observations.
2. Repeat the experiment, but this time pour 1 tablespoon of vinegar in each bowl instead of water. Record your observations.

Analysis

Examine your observations, and try to determine why there were any differences in the reaction. Write a half-page analysis of why you think there were differences.

NSES B Develop an understanding of chemical reactions.

Leavening Quick Breads

Leavening agents allow quick breads to rise quickly without proofing. A leavening agent is a substance that causes dough or batter to rise. The two most common chemical leavening agents are double-acting baking powder and baking soda.

Purchase Leavening Agents Purchase leavening agents, such as baking powder, in the smallest amount possible that you need. It is true that you may receive better prices when you purchase them in larger quantities.

Prepare a Loaf Bread

- 1 Grease the bottom of deep pans, such as loaf pans.
- 2 Prepare the loaf bread batter using either the creaming or blending method. The choice will depend on the formula.
- 3 Heat a conventional oven to 400°F (204°C).
- 4 Scale the appropriate amount of loaf bread batter into the greased pans. Allow the batter to rest.



- 5 Place the loaf pans in the oven. Place a shallow trough of oil down the center of the top of the loaf bread batter. This will prevent uneven splits.



- 6 Bake at 400°F (204°C) for the length of time specified in the formula. Check for doneness. If the loaf is firm to the touch and springs back, or if a skewer is inserted and comes out clean, it is done.



However, if the leavening agents are not used within a short time, they will **deteriorate**, or go down in quality. This will result in low-quality baked products. The money saved buying bulk quantities is then wasted. Chemical leavening agents must maintain their freshness.

Store Leavening Agents Store leavening agents in air-tight containers. Keep the containers in a cool, dry place. Always keep the lids on the containers, even if you use the leavening agents frequently throughout the day.

This will prevent contamination, moisture absorption, and spillage.

If cared for properly, baking soda and baking powder can have a shelf life of two to four months. Date your containers to note their freshness. They can lose approximately 10% of their **potency**, or strength, each month. This is why it is important to purchase only the amount you need.



Describe How are quick breads leavened?

Baking Muffins

When you bake muffins, dry and liquid ingredients can be mixed ahead of time. Once they are combined, however, you will need to bake the muffins immediately. Otherwise, your muffins could lose volume.

To bake muffins, follow these steps:

1. Set the conventional oven temperature at 385°F to 400°F (196°C to 204°C) and grease the muffin pan with commercial pan grease.
2. Using a portion scoop, lift the batter from the mixing bowl and drop or pour it into the prepared muffin pan. A portion scoop will provide equal-size muffins. Be careful not to mix the batter when scooping it out.
3. Garnish the muffin batter with sugar, cinnamon, nuts, or streusel ('strü-səl) toppings. A **streusel** topping is a sweet crumbly topping for cakes and quick breads generally made of flour, brown sugar, and granulated sugar.
4. Place the muffin pans in the oven. Bake the muffins for the time listed on the formula. Test the muffins for doneness by pressing on the top of one of the muffins.

❖ Nutrition Notes ❖

Nutrients in Quick Breads

Quick breads are an excellent source of nutrients. They contain carbohydrates, protein, B vitamins, and iron. If you add fruits and nuts to your mixture, you can provide additional vitamins and minerals. By using whole-grain flours, you will add fiber to the baked product.

CRITICAL THINKING *What could you add to a quick bread to add vitamin C?*

If it springs back, it is done. If it does not spring back, it needs to bake longer. If you need to leave the muffins in to bake longer, stay close by and watch them carefully to make sure they do not overcook. The tops also should be a golden brown color.

5. Remove the muffin pans from the oven and let the pans cool on wire racks until the muffins are warm.
6. Turn the muffins out of the pan onto the cooling rack. If muffins stick, tap the bottom of the pan to loosen them.



▲ One Scoop per Muffin A portion scoop will help you maintain consistent-size muffins.
Why would you choose to use baking cups in a muffin pan?

Quality Muffins

Muffin tops should be golden brown, and the **walls**, or sides of the muffin, should not be too thick. Muffins should be tender and moist. The crumb should break apart without crumbling. Look for these characteristics:

- **Appearance** Muffins should be round in shape with dome-shaped tops. They should be uniform in size.
- **Color** Muffins should have a golden brown surface.
- **Texture** The grain should be even. The muffin should be tender and moist, not dry or brittle. Muffins should not be filled with tunnels.
- **Flavor** The flavor should be sweet and pleasant with no bitter aftertaste from too much leavening. An **aftertaste** is a secondary flavor that comes after the main flavor has subsided.

Cooling and Serving Muffins

Muffins are cooled in the pans until they are warm. The muffin pans should be placed on top of wire racks to allow air to circulate around the pans.

Muffins are better if they are made daily and served immediately. Muffin batter can be premade and refrigerated for three days prior to baking. The batter also can be frozen for two weeks. You can freeze muffin batter either before or after portioning.

To thaw the frozen batter, place it in the refrigerator. Allow it to thaw overnight. The batter will be ready to bake in the morning.

Muffins are served at breakfast, lunch, and sometimes dinner. They may be accompanied by jams and jellies.

 **Reading Check** **Summarize** How should muffins be cooled?

SECTION 28.2

After You Read

Review Key Concepts

1. **Explain** how to divide muffin batter.
2. **Describe** how to check loaf breads for doneness.
3. **Outline** how to cool and serve muffins.

Practice Culinary Academics



English Language Arts

4. Make a poster to hang in a bakeshop window advertising a muffin or loaf quick bread product. Illustrate the product and write up brief pieces of information to help sell the product. Be sure to list advantages of well-made quick breads. Posters should tempt others to purchase the quick bread. Hang your posters in the classroom.

NCTE 5 Use different writing process elements to communicate effectively.



Mathematics

5. It costs Ray \$5.50 in ingredients and labor to make a loaf of zucchini bread that is $13\frac{3}{4}$ inches long. If Ray sells individual slices that are each $1\frac{1}{4}$ -inch thick, what is his cost per slice?

Math Concept **Dividing Fractions** To divide when a fraction is involved, convert any mixed or whole numbers to improper fractions. Multiply the first fraction by the reciprocal of the second fraction. Reduce to lowest terms.

Starting Hint Determine how many slices are in one loaf by dividing $13\frac{3}{4}$ by $1\frac{1}{4}$, after first converting each mixed number to an improper fraction. Divide \$5.50 by your result to find the cost per slice.

NCTM Number and Operations Compute fluently and make reasonable estimates.



Check your answers at this book's Online Learning Center at glencoe.com.

Chapter Summary

Quick bread characteristics include a bread- or cake-like texture. There are basic ingredients in all quick breads; the proportion of ingredients to each other determines the product being made. Quick breads can be prepared using one of three methods: the biscuit method, the blending method, or the creaming method. The biscuit method is used to make dough products such

as biscuits or scones. To meet the standards of quality, biscuits should be golden brown, flaky, and have a good flavor.

The blending method involves using oil or liquid fat to blend ingredients. The creaming method involves combining solid fat and sugar before adding the remaining ingredients. Muffins are usually made with these methods.

Content and Academic Vocabulary Review

1. Create a fill-in-the-blank sentence for each term, with enough information to determine the missing word.

Content Vocabulary

- biscuit method (p. 731)
- blending method (p. 731)
- creaming method (p. 731)
- pour batter (p. 731)
- drop batter (p. 731)
- deflate (p. 734)

- baking cup (p. 738)
- elastic (p. 739)
- tunnels (p. 739)
- potency (p. 740)
- streusel (p. 741)
- walls (p. 742)
- aftertaste (p. 742)

Academic Vocabulary

- consistency (p. 731)
- separation (p. 734)
- desired (p. 739)
- deteriorate (p. 740)

Review Key Concepts

2. **Compare and contrast** the biscuit, blending, and creaming methods of mixing.
3. **Deconstruct** the steps required to make quality biscuits.
4. **Explain** the blending and creaming methods of mixing muffins.
5. **Describe** how to make quality loaf quick breads.
6. **Outline** the steps used to bake quality muffins.

Critical Thinking

7. **Understand** consequences. While baking biscuits, you accidentally add yeast to the formula in addition to baking powder. What should you do, and why?
8. **Explain** how to portion a batch of muffin batter evenly if you do not have a portion or ice cream scoop.
9. **Imagine** that you have a quick bread formula that is not labeled with the name of the product. How would you determine what the end product will be?
10. **Imagine** that you have a friend who says her grandmother never measures anything, and her muffins turn out great. How would you explain to her the importance of measuring?

Academic Skills

**English Language Arts**

- 11. Broaden Your Knowledge** Find and read a text about quick breads. It could be a magazine article, an informational section of a cookbook, or part of a non-fiction text. Summarize anything new that you have learned that was not covered in this chapter. Cite specific examples.

NCTE 2 Read literature to build an understanding of the human experience.

**Science**

- 12. Quick Bread Leavening** You must choose the right leavening agent in the right amount to make quick bread.

Procedure Choose a muffin recipe and make it according to the directions. Then, make it again with the following substitutions: once with no baking powder, once with half the suggested amount of baking powder, and once with double the suggested amount of baking powder.

Analysis Compare the different batches in terms of height, weight, texture, and flavor. Note your observations in a chart that shows the difference between the batches.

NSES B Develop an understanding of chemical reactions.

**Mathematics**

- 13. Bake Biscuits** For the first time at her restaurant, Angela will serve biscuits with breakfast. She will bake the biscuits on a commercial baking sheet measuring 26 inches by 18 inches. Angela is familiar enough with the biscuit formula to know that the biscuits expand greatly during cooking, and she would like to leave a 2-inch gap on all sides of each biscuit. If each uncooked biscuit is 2 inches in diameter, how many can she fit on one baking sheet?

Math Concept Distributive Property of

Multiplication Multiplying a sum by a number is the equivalent of multiplying each addend by that same number, and then adding the two products. For example, $6(3 + 1)$ is the same as $(6 \times 3) + (6 \times 1)$.

Starting Hint For the length of the sheet, if there are x biscuits, there will be $(x + 1)$ gaps between biscuits (including one at either end of the baking sheet). Thus, $(2 \text{ in.})(x) + (2 \text{ in.})(x + 1) = 26 \text{ in.}$ Solve for x to find how many biscuits will fit across the 26-inch length; then use a similar equation for the 18-inch width. Multiply the two totals together to get the total number of biscuits.

NCTM Algebra Use mathematical models to represent and understand quantitative relationships.

Certification Prep

Directions Read the questions. Then, read the answer choices and choose the best possible answer for each.

- 14.** How long should biscuit or scone dough be allowed to rest before baking?
- 5 minutes
 - 10 minutes
 - 15 minutes
 - 20 minutes
- 15.** What is the ideal temperature for baking muffins?
- 325°F–350°F (163°C–177°C)
 - 350°F–375°F (177°C–191°C)
 - 385°F–400°F (196°C–204°C)
 - 400°F–425°F (204°C–218°C)

Sharpen your test-taking skills to improve your kitchen certification program score.

Test-Taking Tip

Look for multiple choice options that say always, none, or never. They are usually not correct answers.

Real-World Skills and Applications

Critical Thinking Skills

- 16. Stretch Ingredients** You are baking muffins. You have ingredients to make a dozen muffins. Your friend calls you to say that there are more guests coming to the party. How can you make muffins with the ingredients you have and still have enough for everyone? Discuss as a class.

Interpersonal and Collaborative Skills

- 17. Food Safety** Imagine that you are making biscuits to serve at a banquet. As a class, review the process of preparing biscuits. Identify food safety issues that may come up and how you would handle those issues.

Technology Applications

- 18. Make a Video** Create a two- to five-minute video that shows viewers how to check the doneness of biscuits, muffins, and quick bread loaves. In the audio, explain what you are doing and what qualities you look for as you check. Videos should contain examples taken from this chapter.

Financial Literacy

- 19. What to Bake?** You can make two dozen 4-ounce muffins for \$3.60, and one quick bread scaled into a loaf pan at 2½ pounds, with a serving size of 3½ ounces, for \$3.20. Which would you make, and why?

Culinary Lab



Use the culinary skills you have learned in this chapter.

Make Banana Nut Bread

- 20. Work as a Team** Divide into teams at the instruction of your teacher and prepare different variations of the Banana Nut Bread formula below.

A. Choose team assignments. Divide into four teams. Bake the bread, with the following variations:

- Sugar, granulated, 1 lb., 4 oz.
- High-ratio shortening, 6 oz.
- Baking soda, sifted, ½ oz.
- Lemon powder, ½ oz.
- Salt, 1/8 oz.
- Bananas, fresh, or canned, mashed, 8 oz.
- Eggs, whole, 2 oz.
- Water, cold, 1 lb., 8 oz.
- Bread flour, sifted, 1 lb.
- Cake flour, sifted, 1 lb.
- Baking powder, sifted, ½ oz.
- Nuts, finely chopped, 4 oz.
- Banana compound, 2 oz.
- (Bake at 375°F, or 191°C)

- **Team A** will prepare the bread using canned bananas and no nuts.
- **Team B** will prepare the bread using canned bananas with nuts added.
- **Team C** will prepare the bread with fresh bananas and no nuts.
- **Team D** will prepare the bread with fresh bananas and nuts.

B. Evaluate each bread. Sample each team's variation and evaluate them. Rate each variation of the bread for texture, crust, crumb, and appearance.

Create Your Evaluation

After you have evaluated each bread, answer the following questions:

- How does the flavor and texture vary for each version?
- What factors contributed to the differences?
- How did the pre-preparation steps vary?
- How did this impact total preparation time?
- How did the total preparation time vary for each team?