**Bread Ban** Imagine that you have a friend who has decided to stop eating bread in order to help maintain a healthy weight. Write an editorial for the school newspaper in response to this approach to weight loss. An editorial is a newspaper column that gives an author’s opinion or perspective on a topic without using the first person.

**Writing Tips** Follow these steps to write an editorial:
- Analyze and interpret information, and express your perspective.
- Do not write in the first person.
- If possible, strengthen your perspective with data and statistics.

---

**Copyright 2009, Glencoe/McGraw-Hill**

**Print Resources**
- Student Edition
- Teacher Wraparound Edition
- Student Activity Workbook
- Student Activity Workbook Teacher Annotated Edition

**Technology Resources**
- Presentation Plus! provides visual teaching aids for every section.
- Online Learning Center includes resources and activities for students and teachers.
- TeacherWorks Plus is an electronic lesson planner that provides instant access to complete teacher resources in one convenient package.
Before You Read

Preview
Think about the role that bread plays in your diet. Then skim through the chapter and consider what ingredients and methods are used to make it.

Read to Learn

Key Concepts
- Describe methods for making quick breads.
- Describe methods for making yeast breads.

Main Idea
The two major types of breads are yeast breads and quick breads, which are prepared using different methods.

Content Vocabulary
You will find definitions for these words in the glossary at the back of this book.
- quick bread
- muffin method
- biscuit method
- cut in
- rolled biscuit
- knead
- drop biscuit
- yeast bread
- fermentation
- conventional method
- quick-mix method
- score

Academic Vocabulary
You will find these words in your reading and on your tests. Use the glossary to look up their definitions if necessary.
- symmetrical
- pliable

Graphic Organizer
Use a graphic organizer like the one below to note how yeast causes bread to rise, to form more gluten, and to be more flavorful.

<table>
<thead>
<tr>
<th>CAUSE</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>yeast and sugar</td>
<td>fermentation</td>
</tr>
<tr>
<td>protein and water</td>
<td>gluten forms</td>
</tr>
<tr>
<td>dough</td>
<td>flavor develops</td>
</tr>
</tbody>
</table>

Academic Standards

- **English Language Arts**
  NCTE 12 Use language to achieve individual purposes.

- **Mathematics**
  NCTM Number and Operations Compute fluently and make reasonable estimates.

- **Science**
  NSES B Develop an understanding of chemical reactions.

- **Social Studies**
  NCSS VIII B Science, Technology, and Society Make judgments about how science and technology can transform the physical world and human society.

Comparing Quality
Ask students to think about the similarities and differences between the quality of homemade or bakery bread and prepackaged bread that you might find in the supermarket. Ask students: How do the breads compare in terms of smell, feel, texture, and taste? Then ask students: Where would you prefer to get bread and why?

Preteaching Vocabulary
Have students write their own definition for each content and academic vocabulary term.

Graphic Organizer
The graphic organizer is also on the TeacherWorks CD. (The cause cell that explains how bread rises should note that yeast produces alcohol and carbon dioxide gas in a process called fermentation, and that the gas leavens the bread, or causes it to rise. The cause cell that explains how bread forms more gluten should note that gas in the bread moves protein and water molecules, which enables them to form more gluten. The cause cell that explains how bread gets flavor should note that fermentation creates by-products such as alcohols, amino acids, and fatty acids that add flavor.)

Develop Concepts

Main Idea
Discuss the main idea with students. Ask students: Which type of bread do you think is more economical—quick breads or yeast breads? (Students may say that quick breads are more economical because of their method of preparation. Quick breads allow you to create fresh, homemade bread in less time.)
**Discussion Starter**

Is That a Quick Bread? Write the following breads on the board: bagel, coffee cake, powder biscuit, pancake. Ask students: Can you distinguish between quick breads and yeast breads based on appearance alone? Which of these breads is not a quick bread? What factors did you consider in making a decision? (Students may say you cannot distinguish between a quick bread and yeast bread based on appearance. The bagel is not a quick bread, it is a yeast bread. This can be determined by reading the recipe, or knowing how each food is prepared. Students may say that they know that coffee cake, powder biscuits, and pancakes do not need time to rise or require kneading in their preparation because they are not made with yeast.)

**Universal Access Interpersonal Learners**

Comparing Quick Breads
Ask students to work in groups and identify a type of quick bread they wish to research, such as banana nut bread, blueberry muffins, or crepes. Ask groups to use the library or cookbooks to find at least three recipes for the quick bread they selected. Have groups write a brief paragraph comparing the recipes both in terms of ingredients and preparation techniques. Do they differ in preparation or ingredients? Is one more healthful than the others? Which is more appealing and why? (Answers will vary, depending upon students’ recipes. Ask groups to share their paragraphs with the class.)

**Answer**

There are $383 \times 8 = 3,064$ calories and $16.1 \times 8 = 128.8$ fat grams in the entire recipe. Thus, each small muffin will have $3,064 \div 24 = 128$ calories and $128.8 \div 24 = 5.4$ grams of fat.

**Making Quick Breads**

Breads come in two major types: quick breads, such as biscuits and muffins, and yeast breads, such as sandwich breads. A quick bread is a bread leavened by agents that allow speedy baking, such as air, steam, baking soda, and baking powder.

Two basic mixing methods are used for quick bread batter: the muffin method and the biscuit method.

**Muffin Method**

The muffin method is a method of making quick breads in which liquid ingredients are lightly mixed into dry ingredients to create a batter with a slightly coarse yet tender texture. Use the muffin method to make a pour batter or a drop batter for pancakes, muffins, some coffee cakes, fruit and nut loaves, and a soft cornbread casserole called spoon bread.

The challenge with the muffin method is to avoid over mixing. Recipes that use the muffin method contain little fat, so beating the ingredients produces a chewy, heavy texture. Muffins end up with air spaces, or tunnels, on the inside and peaks on top.

To get a tender texture, follow these steps:

1. **Measure ingredients.** Measure all ingredients accurately.
2. **Mix the dry ingredients.** Sift the dry ingredients together in a mixing bowl. If you are using whole-grain flour, blend ingredients thoroughly with a spoon or whisk instead.
3. **Mix the liquid ingredients.** In a small bowl, beat all liquid ingredients—eggs, milk or water, oil or melted fat, and flavorings—until well blended.
4. **Make a well.** Using the back of a spoon, make a well in the center of the dry mixture.
5. **Pour and fold.** Pour the liquid all at once into the well in the dry ingredients. Fold in the dry ingredients just until they are moistened. Use as few strokes as possible. A few floury streaks can remain, and the batter should be lumpy.

**Mini Clip**

Math: Guiding Questions

A teacher uses guiding questions to help students review vocabulary necessary for the lesson she will teach.
Safety Matters

Safe Work Surfaces
To ensure food safety and quality, always clean the work surface on which you will mix baking ingredients. Invisible bacteria and other debris, such as leftover food crumbs, can get on your mixing utensil each time you rest it on the counter, and end up in your mix. A clean work surface is also very important for bakers who mix their liquid and dry ingredients right on a table or countertop, rather than in a bowl. Before baking, use a clean sponge or cloth, hot water, and non toxic cleanser or dish soap to wipe down work surfaces and dry them thoroughly.

What Would You Do? You are about to mix bread ingredients on a countertop in the foods lab. The team that used the lab before you was supposed to have cleaned it, and you see no signs of dirt.

Chapter 43  Quick & Yeast Breads  669

Explore the Photo

Caption Answer  Over mixing produces a chewy, heavy texture.

Discussion  Ask students: What happens to muffins if you over mix the batter? (Muffins end up with air spaces, or tunnels on the inside and peaks on the top.)

Critical Thinking

Analyze Reactions  Read students the following scenario: Omar is preparing a batch of pumpkin chocolate chip muffins for a brunch with friends. After measuring all the ingredients, he mixes the liquid ingredients together in a bowl and then adds each of the dry ingredients separately. Ask students: What does Omar do wrong? What might happen to Omar’s muffins? (Answers will vary. Students should show an understanding of the steps involved in the muffin method. Students might say Omar should have sifted all the dry ingredients together first, and then slowly added the liquids to the dry ingredients. This ensures uniformity and prevents large holes inside the muffins. This is especially important when a recipe calls for baking soda because it reacts with acidic liquids instantly, causing gas to escape before baking which will make Omar’s muffins fall flat.)
Follow these steps when using the biscuit method:

1. **Measure ingredients.** Make sure measurements are accurate.
2. **Combine the dry ingredients.** Sift together the dry ingredients in a large mixing bowl.
3. **Combine the liquids.** Mix the wet ingredients in a separate bowl until well blended.
4. **Cut in the fat.** Cut the fat into the flour until the particles are the size of peas or coarse bread crumbs. Use cold fat, which cuts in more quickly and makes a lighter texture.
5. **Make a well.** Using the back of a spoon, make a well in the center of the dry mixture.
6. **Pour and mix.** Pour the liquid all at once into the well. Using a fork, mix until the dry ingredients are just moistened.

**Rolled Biscuits**

A **rolled biscuit** is a biscuit that is lightly kneaded, rolled out to an even thickness, and cut to biscuit size before baking. To **knead** means to work dough with the hands to combine ingredients and develop gluten. In order to create a light, flaky product, very little kneading is done with rolled biscuits.

**Pre-fermenting**

Rather than simply dissolving yeast and adding it directly to a bread recipe, some bakers use a starter, also known as a pre-ferment or sponge. A starter is a mix of flour, water, and yeast that has already fermented together in a bowl for a period of time.

**Procedure** Conduct research to answer these questions: Why do starter ingredients combined in a container rise to three times their size? How does using a starter affect the flavor of bread? Why is sourdough bread often made with starter rather than conventional yeast?

**Analysis** Using what you know of yeast and fermentation, as well as critical thinking skills, write at least one sentence to answer each of the questions.

**Answer** Starter ingredients are combined in a container three times their size to allow them to grow, because, as the text explains, fermentation causes rising. Using a starter will impart a tangier, sour, or complex flavor to bread because the starter has already fermented for a period, and, since fermentation creates by-products that add more flavor, the longer the starter has fermented, the more flavor it will impart. A starter gives sourdough bread its characteristic tangy, sour flavor.
Drop Biscuits

A drop biscuit is a biscuit made with more liquid in proportion to flour than a rolled biscuit. You can turn a rolled biscuit into a drop biscuit by increasing its liquid content. The sticky dough holds its shape when mounded but does not clean the sides of the bowl. It is not kneaded or rolled. Oil sometimes replaces solid fat, and the muffin method may be used for mixing. These differences make drop biscuits more mealy than flaky.

To form drop biscuits, place large spoonfuls of dough about 1 inch apart on a greased cookie sheet, or use muffin tins for a more symmetrical shape. Bake according to recipe directions. You can also spoon drop biscuits onto a casserole as a topping or onto a fruit filling to make a cobbler.

Testing for Doneness

Both rolled and drop biscuits double in size when they bake. Rolled biscuits have golden brown tops and straight, cream-colored sides. Drop biscuits have golden brown, irregular contours.

Making Yeast Breads

A yeast bread is a bread leavened with yeast. Yeast is used in many kinds of bread, including sandwich bread, pizza crusts, pita bread, rolls, pretzels, pastries, and bagels.

The dough for yeast bread must be well kneaded and allowed to rise before baking. It takes longer to make yeast breads than quick breads, but the process is not difficult. “Hands-on” steps of kneading and shaping dough alternate with “hands-off” stages of letting dough rise. Some recipes can be started one day and finished the next.

How Yeast Works

How does yeast make bread rise? Yeast, and the enzymes in yeast, produce alcohols and carbon dioxide gas by breaking down carbohydrates, a process called fermentation. As the gas leavens the bread, it moves protein and water molecules, enabling them to form more gluten. In addition to causing rising, fermentation creates by-products such as alcohols, amino acids, and fatty acids, that add flavor.

Explore the Photo

Caption Answer

Batter bread has the same ingredients as basic white bread (all-purpose flour, yeast, salt, sugar, fat, and water or milk), but has more liquid. It is beaten rather than kneaded and has a lighter texture.

Discussion

Ask students: What are some examples of yeast breads? (Answers will vary, but may include: loaf breads, Italian or French bread, pizza dough, pita bread, bagels, soft pretzels, and rolls.)
Types of Yeast Breads

Yeast breads fall into five basic categories:

**Basic White Bread** Basic white bread is made with all-purpose flour, yeast, salt, sugar, fat, and water or milk.

**Batter Bread** Additional liquid and beating instead of kneading differentiates batter bread from basic white bread. The result is a lighter texture.

**Sweet White Bread** Basic white bread ingredients plus butter, eggs, extra sugar, and sometimes nuts and fruits, create a sweet white bread. Pecan rolls and coffeecakes are examples.

**Whole-Grain Bread** Whole-grain bread is always made with whole-grain flour, but this may replace part or all of the all-purpose flour in basic white bread. Gluten flour may be added to lighten the loaf. It is possible to substitute whole-grain flour for up to half of the total flour in most recipes.

**Sourdough Bread** Leavened with a well-fermented mixture of yeast, water, and flour, sourdough bread has a tangy flavor and a chewy texture.

Mixing Yeast Dough

Mixing is the first step in making yeast bread. Mixing both combines the ingredients and activates the yeast. When yeast produces carbon dioxide, gluten in the flour stretches and dough rises. Gluten traps carbon dioxide, forming tiny pockets in the dough. Bread flour is an excellent gluten producer, which makes it ideal for making yeast dough. All-purpose flour is a less expensive, satisfying substitute.

You can choose from two methods for mixing yeast dough: the conventional method and the quick-mix method. For both methods, bring all ingredients to room temperature to promote yeast growth.

**Conventional Method**

The **conventional method** is a method of mixing yeast dough in which the yeast is first dissolved in warm water to activate growth. Dissolving yeast is also a method of testing yeast, called proofing. Temperature is critical. Yeast will not grow if the water is too cool. Yeast will die if the water is too hot. Check the water temperature with a candy thermometer if you have one. Otherwise, let a drop fall on the inside of your forearm. It should feel pleasantly warm.

The steps in the conventional method are:

1. **Dissolve the yeast in water.** Use water that is about 105° to 115° and let the mixture stand for 5 to 10 minutes.

2. **Heat the liquid.** Heat the fat, sugar, and liquid until the fat melts. Cool the mixture to lukewarm.

3. **Mix in the yeast.** Add the dissolved yeast to the liquid, along with any eggs in the recipe.

4. **Mix in the flour.** Add enough flour to make a soft or stiff dough, as the recipe indicates. Recipes may give a range for the amount of flour rather than an exact amount. This is because flour varies in how much liquid it can absorb. On humid days, for example, flour absorbs less liquid because it has already taken some moisture from the air. There is enough flour when the dough cleans the sides of the bowl.

**Bread Machines**

 Thanks to bread machines, consumers can have fresh, hot bread without much effort. To use a bread machine, simply put the ingredients in the appropriate compartment, program the machine, and let it handle the rest. These appliances come in a variety of forms and offer several different functions. They can produce round, square, and rectangular loaves, operate at different cycles, and be adjusted to enhance crispness or work with different flours. Some include removable bread pans, a “keep warm” feature, and a delayed start function.

**Challenge** List the pros and cons you perceive in bread machines. What are the positive aspects of using one and what, if any, are the drawbacks?
Quick-Mix Method

The quick-mix method is a method of mixing yeast dough in which dry yeast is combined with the dry ingredients and then with a liquid. The liquids must be warmer than in the conventional method because the dry ingredients absorb some of the heat. You can use a standard electric mixer until the dough thickens and becomes too heavy. Then switch to a sturdy spoon. The mixer develops gluten, cutting down on kneading time later. Some mixers have paddles that allow you to mix the dough fully.

The steps in the quick-mix method are:

1. Mix the dry ingredients. Combine part of the flour with the undissolved yeast, sugar, and salt in a large bowl.
2. Heat the liquid. Heat the liquid and fat to between 120° and 130°.
3. Beat the dough. Add the liquid to the dry ingredients and beat the dough until well blended. Make sure all the flour is incorporated.
4. Add flour. Add just enough of the remaining flour to make the kind of dough specified in the recipe. Pay attention to recipe directions that explain how wet or dry a dough should be.

Kneading Yeast Dough

Except for batter breads, most yeast doughs must be kneaded to develop a strong gluten structure that holds up when the dough rises. You can use your hands or a food processor or heavy-duty mixer with a dough hook, which saves a few minutes and some labor.

Follow these steps to knead yeast dough:

1. Turn out the dough. Sprinkle a clean work surface and your hands with just enough flour to keep the dough from sticking. If the dough absorbs too much extra flour, the bread will be dry and tough. Turn the ball of dough out on the surface and flatten it slightly.
2. Push the dough. With the heels of both hands, press the top of the dough and push away from you.
3. Fold the dough. Pull the far side of the dough toward you, folding the dough in half.
4. Turn the dough. Rotate the dough one quarter turn.
5. Knead the dough until glossy. Continue the push, fold, and turn technique for 8 to 10 minutes, using a steady rhythm. When the rough, sticky mass becomes a smooth, glossy, elastic ball, it is ready to let rise.

Explore the Photo

Caption Answer The dough will turn from a rough, sticky mass to a smooth, glossy, elastic ball.

Discussion Ask students: How is kneading yeast dough different from kneading biscuit dough? (Answers will vary, but may include: With yeast breads, you use the heels of your hands, not your fingers, and it is kneaded much longer than biscuit dough.)
Letting Yeast Dough Rise

The next step after kneading is to let the dough rise. Rising allows yeast colonies to multiply and flavors to develop. Recipes that use quick-rise yeast can be baked after only one rise. Recipes that use regular yeast must rise twice, once after kneading and again after the dough is shaped.

For the first rising, place the ball-shaped dough in a large, lightly greased bowl. The bowl must be large enough to allow the dough to double in size. Turn the dough over so the greased surface is on top, and press plastic wrap lightly onto it. This helps keep the dough from forming a crust or drying out, both of which limit yeast growth. Cover the bowl with a clean, dry dish towel or another sheet of plastic wrap stretched tightly to the edges of the bowl. You can put batter breads directly into the baking pan to rise.

Choose a warm place for the dough to rise. A temperature of 75°F to 85°F is ideal. Avoid drafts, which cool the dough, as well as radiators and furnace vents, which cook it. If you cannot find a suitable spot, make one by filling a large bowl two-thirds full of hot water and setting the dough on a wire rack over the water. Replace water as it cools with hot water. You can also use a microwave oven, but check the owner’s manual for specific instructions. In most microwaves, you warm the oven, leave it off for a time, then warm it again.

Let the dough rise until it doubles in bulk, usually about 1 to 1½ hours. Stiff doughs and doughs made with whole-grain flour or nuts and fruits take longest to rise. Allow extra time for refrigerated dough. If you use quick-rising yeast, check the package to estimate rising time.

To test the dough, gently poke two fingers about ½ inch into the surface. If a dent remains, the dough is ready to shape. If the dent springs back, let the dough rise a little longer and then test it again.

Punching Down Yeast Dough

Once dough has risen, it must be punched down. Punching down lets excess gases escape, making the dough easier to shape. It gives the bread a fine texture by eliminating large air bubbles, which would leave large holes during baking. Punching down also redistributes yeast cells, giving them fresh sugar and starch molecules to feed on as fuel for the second rising.

To punch down, thrust your fist into the center of the dough with one quick punch. Then pull the dough away from the sides of the bowl and press it down toward the center to form a ball. Turn the dough out on a lightly floured surface. To make it more flexible, you can let the dough rest for about 10 minutes after punching down.

After it is punched down, the dough is ready to be shaped. Cover and refrigerate it overnight if needed. The dough will rise slowly.

Batter breads are stirred down rather than punched down. Stir the batter with a sturdy spoon until it is close to its original size. Spread the dough in the baking pan for the second rising.

Mass-Produced Breads

Although there has been a resurgence in the popularity of artisanal breads—which are prepared in small batches using old-fashioned recipes and methods—most Americans also consume mass-produced breads. Technology has made it possible for factories to make a quarter of a million loaves of such breads daily, but some quality is lost in producing such large quantities. Because mass-produced breads are baked at temperatures up to 400°F, many nutrients in the flour are depleted. Most mass-produced breads have a softer texture than their artisanal counterparts. They also contain chemical additives, including preservatives, which allow them to be shipped long distances to supermarkets and remain on shelves without spoiling.

Get Involved

Go to your local supermarket. See if you can find any mass-produced breads that are high in nutrients and free of chemical preservatives. Share your findings with the class.

Activity correlated to Social Studies standards.
Shaping Yeast Dough and the Second Rise

Bread dough is usually shaped into a loaf. Some breads are baked free-form on a baking sheet. Some doughs are cut and rolled into several small balls. Other breads are placed in pans to set their shape. Usually the dough is cut in half before baking. Use kitchen shears, a sharp knife, or a bench scraper to cut the dough. Do not tear the dough, because this stretches, weakens, and damages the strands of gluten.

Follow these steps to shape a loaf for baking:

1. **Flatten the dough.** Flour the work surface lightly. With a rolling pin, roll the dough into an 8 × 10 inch rectangle. Make sure the dough is the same thickness throughout. Roll out the bubbles in the edges.

2. **Roll up the dough.** Starting at one of the short ends, roll up the dough tightly. This helps press out air.

3. **Pinch and seal the roll.** Turn the roll so the seam is on top. With your fingers, pinch the seam edge to the roll so it stays closed. Turn the roll seam-side down. Hold your hands with palms pressed together. With the bottom edge of your hands, press down on both ends of the roll, about ¼ inch inside the edge, to pinch and seal the ends. Tuck the flattened ends under the roll. Then turn the roll upside down and pinch the ends into it. Place the roll seam-side down in a greased loaf pan.

Yeast dough is very **pliable**, or supple, and accepts many different shapes. You can make a braid, a wreath, or a braided wreath. Twist rolls into figure-eights, cloverleaves, sailor’s knots, or crescents. Challah is a traditional Jewish bread made by braiding as many as six strands of dough. Stick smaller balls on larger ones for bunny heads or teddy bears.

Place the shaped dough in the baking pans. Cover it with a dry dish towel and let it rise again until it doubles in size. The second rising usually takes less time than the first rising.
**Critical Thinking**

**Make Predictions** Ask students: What might happen to a loaf of yeast bread if you do not preheat the oven before your bread finishes rising? (Answers will vary, but students should identify that the oven may not be hot enough to cause a final burst of fermentation and rising called oven spring, and that, if the bread sits too long, the loaf could fall and end up tasting yeasty after baking. Have students share their responses with the class.)

---

**Chapter 1**

**The Amazing World of Food**

**Directions**

- Nutrition is the study of nutrients.
- Wellness, good health and positive well-being are necessary for good health.
- Connecting through food and food safety help self-esteem.
- Food provides time for family and friends to strengthen bonds.
- Food provides comfort and makes people feel good.
- Food preparation can help you express creativity.
- Food provides careers for people in science, art, and agriculture.
- It also provides pleasure and improves life skills. Science plays an essential role in the kitchen.

**THE ROLE OF SCIENCE IN FOOD**

Science in the kitchen connects students to the world around them. It develops competency for living and helps them develop scientific thinking and problem-solving skills.

**SKILLS YOU WILL BUILD WHILE LEARNING ABOUT FOOD**

- Improving food preparation skills and building teams may help self-esteem.
- Working in food labs builds communication skills.
- Learning about nutrition may improve leadership skills.
- Budgeting, meal planning, and organization are skill-building and verbal and nonverbal communication.
- Leadership in the field of agriculture, food processing and science in the kitchen.
- Handling resources wisely means to make choices that will last.
- Stress hormones that are released in the body are necessary for good health.
- Food is made of life-sustaining nutrients.
- Agricultural, food processing, and food safety for additional content.

**Food holds a great deal of power in its ability to sustain a healthy life through its chemical properties and nutrition.**

**THE PLEASURES OF FOOD**

Food is fun! It can bring a smile to the face of your skull. Food contains nutrients and ensures the health of our food supply. Food provides time for family and friends to strengthen bonds. Food provides comfort and makes people feel good. Food preparation can help you express creativity. Food provides careers for people in science, art, and agriculture. Food provides time for family and friends to strengthen bonds.

**Bread Exhibit** Display several pictures of quick breads and yeast breads. Ask students if they can identify each bread, name the major ingredients, explain how the dough or batter was mixed and worked, and how the cook knew when the bread was done. Have students share their responses with the class.

---

**Buttermilk Biscuits**

**Ingredients**

- 1 ½ cups All-purpose flour
- ¼ cup Whole wheat flour
- 1 tsp. Salt
- 1 tsp. Baking powder
- ½ tsp Baking soda
- ¼ cup Butter
- ¼ cup Buttermilk

**Directions**

1. Preheat oven to 500°.
2. In a large mixing bowl, combine the two flours with the salt, baking powder and baking soda. Mix well.
3. Cut in the butter. It may be easier to work the butter into the flour with your hands until the butter is reduced to pea-sized bits.
4. Add the buttermilk and mix with your hands just until the dough can be put out on a table.
5. Roll out the dough and with a cutter or a wide glass, cut out circles of dough. When you can not cut out any more circles, push the dough together. Do not roll out again. Cut out more circles.
6. Place the circles on a baking sheet and bake in the oven until golden brown.
7. Biscuits are best when served hot.

**Nutrition Analysis**

- Calories: 171
- Total fat: 6 g
- Saturated fat: 4 g
- Cholesterol: 16 mg
- Sodium: 316 mg
- Carbohydrate: 24 g
- Dietary fiber: 2 g
- Sugars: 1 g
- Protein: 4 g

---

**Recipe Prep Tip**

Remind students to wash their hands and the table they are using before working with the dough. Point out to students that the recipe indicates that after cutting out the first biscuits, they should push the dough together rather than knead and roll it out again. Repeated kneading and rolling out makes dough tough.
CHAPTER 43
Review & Applications

Content and Academic Vocabulary Review
1. Write each of these content and academic vocabulary words on an index card, and the definitions on separate index cards. Work in pairs or small groups to match each term to its definition.

**Content Vocabulary**
- quick bread (p. 668)
- muffin method (p. 668)
- biscuit method (p. 669)
- cut in (p. 669)
- rolled biscuit (p. 670)
- knead (p. 670)
- drop biscuit (p. 671)
- yeast bread (p. 671)
- fermentation (p. 671)
- conventional method (p. 672)
- quick-mix method (p. 673)

**Academic Vocabulary**
- symmetrical (p. 668)
- pliable (p. 675)

Review Key Concepts
2. Describe the two methods for making quick breads.

Critical Thinking
4. Decide what you would do if you were making bread from scratch. Would you prefer to make quick bread or yeast bread? Give three specific reasons for your answer.
5. Predict what would happen if you made muffins by stirring the dry and liquid ingredients together in a bowl until you had a thoroughly wet mix.
6. Evaluate the consequences of over-kneading dough for rolled biscuits.
7. Identify which type of biscuits you would make if you wanted them to have a slightly rustic, imperfect appearance. Explain your reasoning.
8. Explain what you could do if you wanted to make a yeast bread, but wanted to avoid too much kneading.
9. Analyze what would happen to dough that was left to rise near a refrigerator that was repeatedly opened and closed.
10. Describe three original, creative, and realistic possibilities for shaping yeast dough.

After You Read

Chapter Summary
The two major types of breads are quick breads and yeast breads. A quick bread is leavened by agents that allow speedy baking, such as air, steam, baking soda, and baking powder. A yeast bread is leavened by yeast. These two types of bread are prepared using different methods. Two basic methods are used to make quick bread batter, the muffin method and the biscuit method. The biscuit method has variations that result in different appearances and textures. There are five basic categories of yeast breads. Each kind of yeast bread can be made by following a series of steps.

Methods for making yeast breads are the conventional method and the quick-mix method. In the conventional method, the yeast is first dissolved in warm water that is between 105° to 115° to activate its growth. The next steps are as follows: heat the liquid, including the fat and sugar, until the fat melts, and cool the mixture to lukewarm; mix in the dissolved yeast, along with any eggs; mix in enough flour to make a soft or stiff dough. In the quick-mix method, undissolved dry yeast is combined with part of the flour and the other dry ingredients. The liquid and fat are heated to between 120° and 130°. The liquid and dry ingredients are combined and beaten until well blended. Finally, more flour is added to make the desired kind of dough.

Critical Thinking
4. Answers may vary, but should be supported with three specific reasons. For example, a student may prefer to make yeast bread because the preparation process is more hands-on, the bread can be formed into creative shapes such as braids and knots, and the final outcome would be more rewarding due to the time and effort taken.
5. The muffins would have a chewy, heavy texture because of over mixing.
6. Over-kneading the biscuit dough will produce biscuits that are too chewy or hard to eat.
7. You should make drop biscuits. This method will result in imperfect, irregular contours because the biscuit dough is simply dropped from a spoon onto a cookie sheet, rather than rolled out and cut into perfect circles.

8. You might make a yeast bread using the quick-mix method, in which dry yeast is combined with dry ingredients, and a standard electric mixer is used to combine ingredients and create a dough. The mixer develops gluten in the dough, which cuts down on kneading time.

9. The refrigerator would repeatedly release cold air near the rising dough every time it was opened and closed. This could cool the dough, and prevent it from rising.

10. Descriptions will vary, but should demonstrate creativity as well as an awareness of what would be realistic when working with dough. Examples include a spiral loaf, a heart-shaped loaf, or a star-shaped loaf.

11. Both popovers and cream puffs have cavities that are appropriate for fillings. Cream puffs are baked on a tray, while popovers are baked in a container, such as a muffin tin.

12. Ravi should choose the whole grain bread. Because it is made with flour that is created with the whole wheat grain, including the bran and the endosperm, it contains many beneficial nutrients that the other breads do not. The sweet white bread has sugar added. The sourdough and basic white breads lack the extra nutrition offered by the whole grains.

13. Muffin recipes should be varied. Typed grocery lists should include every supply and ingredient cited in the recipes.

14. Greg can use the ingredients he has on hand for basic white bread to make a sweet white bread. He does need to add to them. He must add butter, eggs, extra sugar, and can also add nuts and fruits.

15. The right temperature for water to dissolve yeast is between 105° and 115°. Students who determine that water within this temperature range is suitable for dissolving yeast are correct.

16. Cost differences will vary, but, in general, the fresh loaf of sourdough bread from the bakery will cost more than the mass-produced sourdough bread from the supermarket.
**Academic Skills**

**Food Science**

17. **Quick Breads**

Because these breads have chemical leaveners and do not rely on yeast, they are quick to prepare and bake.

**Procedure**
Mix together 1¼ cup flour, ½ cup of sugar, 2 teaspoons baking powder, and ¼ teaspoon of salt. Make a well in the center. In a separate bowl, mix together 1 beaten egg, ⅛ cup of milk, and ¼ cup vegetable oil. Then pour into the well of the first bowl. Fold together just until moistened. Spoon batter into paper lined muffin cups until ⅔ full. Bake at 400° for 20 minutes.

**Analysis**
Which ingredients provide the leavening in this recipe? What would happen if you substituted baking soda for the powder? What if buttermilk were used instead?

**Mathematics**

18. **Changing Recipe Yield**

Beatrice needs to prepare 30 biscuits for a large upcoming brunch. However, the biscuit recipe she is using has a yield of just 12 biscuits. If the biscuit recipe calls for 2¼ cups of flour, 1 Tbsp. of baking powder, ½ tsp. of salt, 1 Tbsp. of sugar, ½ cup of butter, ¼ cup of milk, and 1 egg, rewrite the recipe to yield 30 biscuits.

**Math Concept**

Multiplying Fractions
To multiply fractions, first convert any mixed or whole numbers to improper fractions. Then multiply all numerators to get the new numerator, and multiply the denominators to get the new denominator. Reduce to lowest terms.

Starting Hint
You will need to multiply each ingredient amount by the ratio of the new yield to the old yield, written as a fraction in lowest terms.

**English Language Arts**

19. **Bread Song**

Write a song to educate children about the two major types of bread. Your song may have an original tune or may be set to a familiar tune. Make your song informative, factual, and fun. Include all the steps involved in baking bread in your lyrics. Include four verses and a chorus that is repeated between them.

**Test-Taking Tip**
Before deciding whether a statement is true or false, read it carefully, and recall what you have learned from reading the text. Does the statement reflect what you know? Pay close attention to individual words. One word can make the difference between a true statement and a false one.

TRUE OR FALSE

Read the statement and determine if it is true or false.

20. To punch down dough, thrust your fist into the center of the dough 3 to 5 times.

a. True
b. False

**Technology Solutions**

Use these technology solutions to streamline chapter assessment!

ExamView Assessment Suite
CD allows you to create and print out customized tests or ready-made unit and chapter tests, complete with answer keys.

TeacherWorks Plus
TeacherWorks Plus is an electronic lesson planner that provides instant access to complete teacher resources in one convenient package.

Online Learning Center
includes resources and activities for students and teachers.