

BREAD BAKING BASICS

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4—Prepare Quick Loaf Breads	Characteristics of quick loaf breads Bread storage	Baking terms Neatness counts (kitchen cleanup reminders) Creamed mixing method How leavening agents work —Air —Steam —Carbon Dioxide (baking soda, baking powder, yeast)	Banana nut loaf Two-corn bread	Experiments to try —Leavening agent activity —Bread storage Baking language word puzzle	Bread baking accomplishments	How do your quick breads measure up? Quick loaf bread troubleshooters

Lesson Unit	Introduction	Meeting Topics	Recipes	Meeting Activities	Check What You Learned	Product Evaluation
5—Explore Steam-Leavened Quick Breads	Use of air and steam as leavening agents Description of popovers	Measurement matchup Guidelines for perfect popovers	Perfect popovers	Food guide pyramid Personal food profile Consumer experiment to try —Bread & cereal labels	Questions on steam-leavened bread preparation	How do your popovers measure up? Popover troubleshooters
6—Stir Up Speedy Convenience Mixes	Introduction to Master Mix	Bread/cereal nutrition Quick bread mix know-how Baking pan know-how	Master mix biscuits Easy-as-a-mix pizza Pancakes	Field trips (described in leader guide only) Consumer experiments to try —Compare master mix with commercial mixes —Compare pancake mixes	Ingredients and nutrients in the quick bread mix	
7—Learn about Yeast Breads	Introduction to yeast breads Explanation of what yeast is	Safety check (electricity, danger of burns, danger of falls, danger of cuts, danger of fire, other) Baking yeast breads	No-knead yeast bread and rolls	Function of ingredients matching Experiment to try —Effects of the leavening power of yeast	Yeast word search	How do your yeast breads measure up? Yeast bread troubleshooters
8—Share and Eat	Activities to share what you've learned	Try a buffet! Serving others		Project exhibits Planning for the fair Bread baking basics wrap-up Record book completion Learning more about bread		

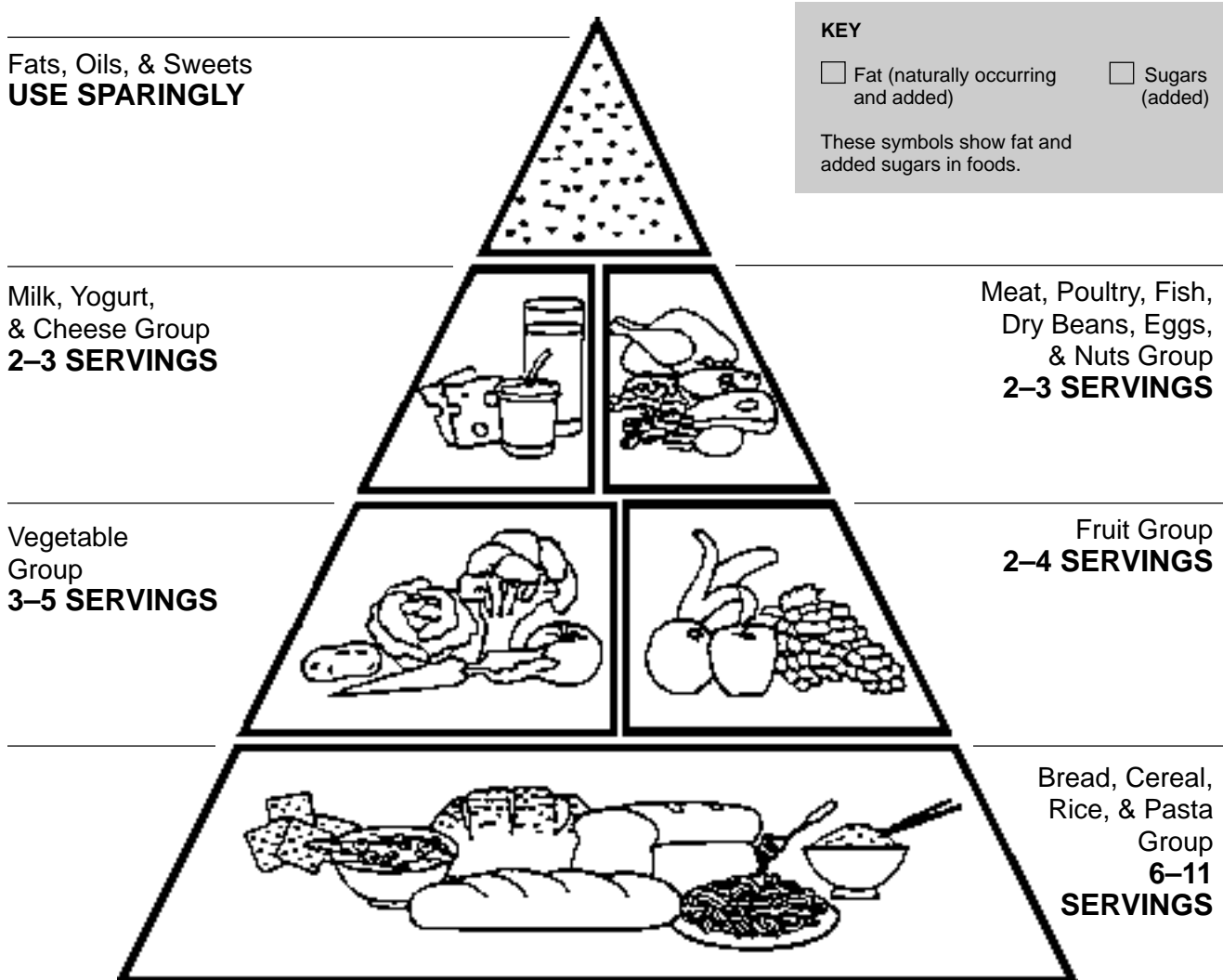
Add Variety To Your Meals

Nutrients
are found
in all foods.

No one food gives you all the nutrients you need to stay healthy. So it is best to eat a variety of different foods every day.

Use the Food Guide Pyramid to help you eat better every day. . .the Dietary Guidelines way. Start with plenty of Breads, Cereals, Rice, Pasta, Vegetables, and Fruits. Add two to three servings from the Milk group and two to three servings from the Meat group. Go easy on fats, oils, and sweets—the foods in the small tip of the Pyramid.

Food Guide Pyramid A Guide to Daily Food Choices



UNIT 1—GET ORGANIZED

In this project you can learn to make muffins, biscuits, quickbreads, popovers, cream puffs, and yeastbreads from "scratch." That means making breads using basic ingredients. You also can learn to make bread products using a convenience mix. And you'll learn the secrets of measuring, mixing, and baking for perfect products.

Breads are an important food. Breads and other grain products make up one of the food groups in the Food Guide Pyramid. Other groups are fruits, vegetables, meat and protein foods, and milk and dairy products. Another group, which you should eat in limited amounts, is fats and sweets. Breads are a part of almost every meal and, along with other foods, provide the vitamins and minerals for growth and healthy bodies.

GRAIN—AN OLD AND IMPORTANT FOOD

Grain was the basic food grown by the first farmers more than 10,000 years ago. Grains are still the most basic crop. Wheat is grown in the largest amount. If you put all the wheat in a freight train, the train would go around the world more than 2 times. Rice is the second largest crop.

Other important grains people use are corn (also called maize), oats, rice, and barley. When grain plants grow, they produce a stalk and seeds. When the plants are harvested, the seeds are saved for use by people. The stalks can be used for animal feed and bedding.

The seeds from grain plants are milled, meaning they are processed so people can use them. For example, most flour is made from milled wheat; corn is ground into cornmeal.

Grain was important to early farmers because it can be stored a long time without spoiling. It can also be used for many different kinds of food.

MEETING TOPICS

Food Safety Techniques

Read over these safety points and check if you:

_____ Wash your hands before you begin to cook.

_____ Keep the kitchen as neat and orderly as you can while you are working.

_____ Keep your hands away from your hair and face when you are cooking.

_____ Don't use your mixing spoon for tasting foods. Use a separate spoon.

_____ To avoid spreading germs, wash your tasting spoon with soap and water carefully. Or, use another spoon if you must taste again.

_____ Leave the kitchen spic and span!

_____ Do you understand WHY each of these is important? Be prepared to talk about the WHYs at your meeting.

Abbreviations To Know

See if you can correctly match the abbreviation in the left column with the word in the right column.

_____ c.	teaspoon
_____ t. or tsp.	ounce
_____ T. or tbsp.	pint
_____ oz.	cup
_____ lb.	quart
_____ pt.	tablespoon
_____ qt.	pound

Measuring Skills

Measure dry ingredients with metal or plastic cups. They usually come in a set of 1 cup, $\frac{1}{2}$ cup, $\frac{1}{3}$ cup, and $\frac{1}{4}$ cup.

A set of measuring spoons usually has a tablespoon, teaspoon, $\frac{1}{2}$ teaspoon, and $\frac{1}{4}$ teaspoon.

To measure flour, sugar, baking powder, or spices, mound the ingredients in the cup or spoon. Then level off with the straight edge of knife blade or spatula.

When a recipe calls for sifted flour, scoop the flour into the sifter, sift onto a sheet of waxed paper. Spoon lightly into a measuring cup. Unsifted

flour has 1 to 2 tablespoons of flour more than a sifted cup of flour. Flour may also be purchased "pre-sifted." Spoon pre-sifted flour lightly into a dry measuring cup, and level it with a straight-edged knife or spatula.

Brown sugar is measured by packing it firmly into a dry measuring cup. Then level it off. Brown sugar should hold the shape of the cup when emptied from a cup.

To measure milk or other liquids, pour them into a liquid measuring cup. Set the cup on a level surface. Check at eye level for accuracy.

To measure shortening, pack it firmly into a measuring cup so there are no air spaces. Then level it off. Or measure shortening by weight— $\frac{1}{2}$ pound equals 1 cup.

Two sticks of butter or margarine equal 1 cup. One stick is $\frac{1}{2}$ cup. Most butter or margarine show the number of tablespoons and parts of a cup on the wrapper.

MEETING ACTIVITIES

Measuring Practice

1. Bring a set of dry measuring cups, a liquid measuring cup, and a set of measuring spoons to the meeting.
2. Be prepared to practice different measuring techniques.

Experiments To Try

Flour Weight

Spoon flour into a measuring cup and level off. Weigh flour on a diet scale. How much does it

weigh? Next, sift flour onto a piece of waxed paper. Spoon into a measuring cup, level off, and weigh. Record the amount here _____ . Which one has less flour?

Sifting

Try this to see how leavening agents mix with flour.

1. Add 1 tablespoon cocoa to 1 cup flour. Stir lightly. How does it look? You can see that the cocoa is mixed unevenly. This would affect the quality of your biscuits if the cocoa were baking powder.
2. Sift mixture once. How did the cocoa mix?
3. Sift again. Observe.
4. Sift again. Observe.

Kitchen Utensil Know-How

You also need to know about kitchen utensils and equipment when you are cooking. Look at the utensils in your kitchen.

- Do you know what each is?
- Can you use each correctly and safely?
- Do you know what cooking or baking procedures each is used for?
- Do you know the correct name for each?

CHECK WHAT YOU LEARNED

Kitchen Utensil Identification

Your project leader will give you an activity for identifying commonly used kitchen utensils.

UNIT 2—MAKE MUFFINS

Muffins are a quick-to-make quick bread. Like most breads, muffins have six basic ingredients:

- *Flour*—for structure.
- *Sugar*—for tenderness, flavor, and browning.
- *Fat*—for tenderness and moistness.
- *Liquid*—like water or milk, to help mix ingredients together and for moistness.
- *Eggs*—to hold the mix together and give flavor, golden color, and moistness.
- *Leavening*—like baking powder, baking soda or yeast to make it rise and become airy and light.

While the basic ingredients are the same, selecting different types of flour, sugar, or liquid and mixing them differently can make the bread taste different. For example, instead of white all-purpose flour, a recipe might call for whole wheat, rye, or cornmeal. Instead of white sugar, one might use brown sugar, honey, or molasses. The fat ingredient could be shortening, oil, butter, or margarine.

THE STORY OF THE BAKER'S DOZEN

One day, a long time ago, a stingy baker sold a dozen cookies to an old woman. After she paid for them she asked him for one more. The baker refused. For the next year, he had bad luck. His bread would either rise to the ceiling or fall flat. From then on, he always put an extra cookie, bun, or muffin into his dozen!

MEETING TOPICS

Baking Safety Tips

Do you practice safety when using the oven? Use this list to check your baking safety.

- _____ The first time you use the oven, have one of your parents or leader show you how to turn it on, set the right temperature, and set the timer.
- _____ Arrange the racks to the correct position in the oven before you preheat the oven.
- _____ Arrange baking pans properly in the oven.

- _____ Watch the clock and set the timer when you have something baking.
- _____ Keep several thick potholders near the stove.
- _____ When you take hot pans out of the oven, use a potholder in each hand.
- _____ Pull the oven rack out a little way to make it easier to lift hot pans out of the oven.
- _____ Check to make sure you have turned off the oven when you have finished.

Kinds of Quick Breads

There are many quick breads. Each looks and tastes different. Quick breads are usually leavened with baking powder or baking soda so that the bread may be baked as soon as the batter or dough is mixed. All rise quickly to become tender and light. All have the same basic ingredients but in different amounts. Quick breads can be divided into three groups by the thickness of the batter.

Three kinds of quick breads

Kind of Batter	Description	Examples	Typical Ingredients Amounts
Pour batter	Pours easily from a spoon, or a pitcher.	Pancakes Waffles Popovers	1 cup liquid 1 cup flour
Drop batter	Drops in soft, moist mounds from spoon.	Muffins Nut Breads Coffeecakes Dumplings Drop Biscuits	1 cup liquid 2 cups flour
Soft dough	Can be rolled and shaped by hand, but will be slightly sticky.	Biscuits Shortcake Scones	1 cup liquid 3 cups flour

MUFFIN MIXING METHOD

One way to mix a quick bread is the muffin method. In the muffin method dry ingredients are mixed together in a bowl. All liquid ingredients are mixed together in another bowl. Then, the

liquid ingredients are poured into a hole in the dry ingredients and stirred only until the flour is moistened. The batter looks very lumpy.

The muffin method may also be used for loaves of quick bread.

Hints for Perfect Muffins

- Measure ingredients carefully.
- Stir the batter just until moist and lumpy.

RECIPES

Basic Muffins

Ingredients

- 1 egg
- ³/₄ cup milk
- ¹/₃ cup cooking oil
- 1³/₄ cups all-purpose flour
- ¹/₄ cup sugar
- 2¹/₂ teaspoons baking powder
- ³/₄ teaspoon salt

Procedure

1. Preheat oven to 400°F.
2. Grease 12 muffin cups with a paper towel or waxed paper dipped in shortening, brush with shortening, or coat with a cooking oil spray. If you prefer, line with paper baking cups.
3. In a small mixing bowl, slightly beat egg with fork; mix in milk and cooking oil. Set aside.
4. In large mixing bowl, stir together the flour, sugar, baking powder, and salt. Make a well in the center.
5. Add egg mixture all at once.
6. Stir just until moistened, about 20–25 strokes (batter should be lumpy).
7. Spoon into prepared muffin cups, filling each about ²/₃ full. Bake for 20–25 minutes or until golden brown.
8. Remove from pan; serve warm.

Makes 12 muffins.

Self-Rise Muffins

Prepare muffins as previous, except use 1³/₄ cups self-rising, all-purpose flour instead of all-purpose flour; omit the baking powder and salt.

Special Muffins

Muffins can be made special by any one of these additions. Prepare before you start mixing the muffins. Stir into the muffins so the TOTAL mixing time is no more than 20–25 strokes in the basic recipe.

Ingredient Options

- ¹/₄ cup nuts
- ¹/₄ cup dried apricots
- ¹/₄ cup chopped dates
- ¹/₂ cup mashed ripe bananas
- ¹/₂ cup fresh or frozen blueberries (well-drained)
- ¹/₂ cup chopped apples
- ¹/₂ cup very well-drained crushed pineapple
- ¹/₂ cup grated cheese

Nutrition Facts

Serving Size 1 muffin
Servings per Recipe 12

Amount per Serving

Calories	120	Calories from Fat	45
		% Daily Value*	
Total Fat	5g		8%
Total Carbohydrate	17g		6%
Dietary Fiber	.1g		0%
Protein	3g		6%
Calcium	60mg		6%
Iron	1mg		6%

*Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat. Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 Carbohydrate 4 Protein 4

MEETING ACTIVITIES

Experiments To Try

Effects of Too Much Mixing

Materials Needed: Ingredients and supplies for making a batch of basic muffins.

Procedure and Purpose: Follow these steps, and watch for a difference in results.

1. Prepare a batch of muffins according to the basic recipe.
2. Divide batch into three parts.
 - a. (Part 1)—Put into muffin tins after correct mixing time.
 - b. (Part 2)—Mix 4 more strokes. Fill an additional 4 muffin tins.
 - c. (Part 3)—Mix remaining muffin batter 4 more strokes and fill muffin tins.
3. Bake as directed, and remove muffins from tins.

Basic Ingredients

Ingredient category	Reason ingredient is added to quick bread	Example of ingredient in this category
Flour		
Sweetener		
Fat		
Liquid		
Eggs		
Leavening		

4. Line up muffins from least to most mixing time.
5. Slice muffins in half vertically.
6. Look for differences in muffins. What did extra mixing do to the muffins? Why?
7. Evaluate the muffins using the "How Do Your Muffins Measure Up?" and "Muffin Troubleshooters" in the product evaluation section.

Adding Extra Ingredients

Your project leader may want to conduct this extra experiment.

CHECK WHAT YOU LEARNED

Complete the chart below. In the spaces provided, list: (1) a purpose or reason for including the ingredient in quick breads; (2) an example of an ingredient which falls into each category.

PRODUCT EVALUATION

How Do Your Muffins Measure Up?

Appearance

Uniform in size and shape
Golden brown exterior
Interior-creamy white, or distinctive of its kind
Rough top surface
Slightly rounded top

Flavor

Delicate, mild
Distinctive of kind

Texture

Tender, thin crust
Light in proportion to size
Crumb—medium, fairly uniform
Moist

Muffin Troubleshooters

Muffin Problem	Probable Cause
Lop-sided peak	Oven heat too low
Tough or hard	Oven heat too low
Hard on outside; soggy on inside	Oven heat too high
Cracked on top	Oven heat too high
Wobbly, peaked, or not even	Oven heat too high
Too dark a color	Oven heat too high
Tunnels	Overmixed
High peaks	Overmixed
Lumps of flour, etc.	Undermixed
Can taste one ingredient or off-flavor	Undermixed

UNIT 3—BAKE BISCUITS

Biscuits are another popular quick bread. They have only five basic ingredients:

- Enriched all-purpose flour.
- Leavening agent such as baking powder.
- Liquid to start the biscuits rising.
- Fat, like solid shortening, which is “cut in” to biscuits to make them tender and flaky.
- Salt for flavoring.

What ingredients do muffins have that biscuits don’t?

BISCUITS THROUGH THE CENTURIES

Centuries ago, biscuits were hard and lasted a long time. They packed and traveled well and were popular with explorers like Marco Polo.

Today’s biscuits are flaky and tender. They’re best served fresh and hot from the oven! Biscuits can be plain or fancy. They can be served as scones, dumplings with stew, or strawberry shortcake.

MEETING TOPICS

Understanding Baking Information

Look for baking information in recipes *before* you start.

- _____ 1. *Oven directions*—preheat temperature, baking time.
- _____ 2. *Pan size*.
- _____ 3. *Pan preparation*.
- _____ 4. *Test for doneness*—different baked products look and act differently when done.
- _____ 5. *Cooling time in pan*—most baked products are removed from the baking pan while still warm.
- _____ 6. *De-panning instructions*—this means directions for removing the baked product from the pan.
- _____ 7. *Cooling*.
- _____ 8. *Storage*—after your bread product is thoroughly cool, wrap it for storage in airtight packaging.

Successful Baking

Your success in baking depends on how you handle the ingredients. You should:

1. Measure ingredients accurately.
2. Read recipes carefully.
3. Use the same equipment as described in the recipe.
4. Combine ingredients as directed in recipe.
5. Bake as directed.

Biscuit Mixing Method

In the Biscuit Method, dry ingredients are sifted and stirred together. The shortening is cut into the dry ingredients until mixture resembles coarse crumbs. All the liquid is added and stirred to make a soft dough. How does this method differ from the Muffin Method?

Hints for Successful Biscuits

- Use a pastry blender or two knives to cut in shortening until mixture looks like corn meal. This divides shortening particles throughout mixture and makes biscuits flaky.
- Mix biscuits just until dough leaves the side of the bowl and forms a ball. Knead gently a few times on a lightly floured surface, to prevent sticking. Kneading is working dough with your hands by repeating a folding-back, pressing forward, and turning motion.
- Undermixed biscuits will be coarse with dark spots on the crust because the baking powder hasn’t been mixed enough.
- Overmixed biscuits will be tough, heavy, and small.
- To roll biscuits, lightly flour surface and rolling pin. Start with dough shaped into flat circle with smooth edges. Roll from center. Use short, light strokes. Lift rolling pin just before you get to the edge. Patch dough if it splits by pressing dough together. Reroll dough if you need to. Be careful because rerolling will toughen your biscuits. To get an even thickness, roll dough between a set of sticks, $\frac{1}{2}$ -inch thick and 10–14 inches long.

- Don't overhandle dough—it's like overmixing. Tough, heavy, small biscuits will result.
- Flour the biscuit cutter by dipping it into a small bowl of flour. Cut straight down; do not twist your biscuit cutter. Cut biscuits close together; then you'll have less dough to reroll.
- For soft-sided biscuits, place biscuits close to each other so they touch while baking.
- For crusty-sided biscuits, place biscuits 1/2 to 3/4 inch apart before baking.
- Choose a light-colored baking sheet for a light-colored crust on your biscuits.
- Check the size of your baking sheet. Allow at least 2 inches between the baking sheet and oven walls. This allows oven heat to circulate around the sheet.

Recipes

Standard Biscuits

2 cups flour
1 tablespoon baking powder
1 teaspoon salt
1/4 cup shortening
3/4 cup milk

Buttermilk Biscuits

2 cups flour
2 teaspoons baking powder
1 teaspoon salt
1/4 teaspoon baking soda
1/4 cup shortening
3/4 cup buttermilk

Procedure

1. Preheat oven to 450°F.
2. Measure and mix dry ingredients into a mixing bowl. Cut shortening into flour mixture with pastry blender until mixture looks like corn meal.
3. Make a "well" in mixture and add liquid all at once. Stir vigorously with fork just until mixture rounds up in a ball and no dry ingredients remain in bowl.
4. Turn dough onto lightly floured board. For ease in handling, roll the ball of dough around 3 or 4 times. Knead 20–25 times, working quickly.
5. Roll dough or pat out with floured hand to 1/2-inch thickness.
6. Cut biscuits close together with floured biscuit cutter. Push leftover dough together lightly and roll out. Avoid working in more flour, and do not knead.
7. Place biscuits on an ungreased baking sheet. Bake at 450°F for 10–12 minutes.

Makes 12 biscuits

Nutrition Facts

Serving Size 1 biscuit
Servings per Recipe 12

Amount per Serving

Amount per Serving		% Daily Value*	
Calories	100	Calories from Fat	45
Total Fat	5g		8%
Total Carbohydrate	13g		4%
Dietary Fiber	.1g		0%
Protein	2g		4%
Calcium	47mg		6%
Iron	.7mg		4%

*Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	300mg	25g
Cholesterol	Less than	2,400mg	300mg
Sodium		300g	2,400mg
Total Carbohydrate		25g	375g
Dietary Fiber			30g

Calories per gram:

Fat 9 Carbohydrate 4 Protein 4

Drop Biscuits

Drop biscuits are simply dropped onto a baking sheet. Use the recipe for regular or buttermilk biscuits—except increase the milk to 1 cup. Combine ingredients as directed but do not knead. Use a knife or narrow spatula to drop dough from tablespoon onto ungreased baking sheet. Makes 12.

Flavored Biscuits

Stir one of these ingredients into the dry ingredients:

1/2 cup crumbled crisply fried bacon

1/2 cup shredded cheese

1 1/4 teaspoons caraway seed

1/2 teaspoon crumbled sage

1/4 teaspoon dry mustard

Fancy Biscuits

Biscuits don't have to be round! Roll dough and cut into squares, triangles, diamonds, or other shapes with a knife or simple cookie cutter.

MEETING ACTIVITIES

Experiment To Try

Effect of Kneading

1. Prepare one recipe of standard biscuits. Stop after step 3. Divide dough into three parts:

Part 1—Handle just enough to shape into biscuits.

Part 2—Knead 20 times according to directions.

Part 3—Knead 40 times. Shape into biscuits.

2. Place each group on the baking sheet so you can tell them apart.
3. Bake as directed.
4. Describe what happens: Which biscuits were largest? Which most tender? Which did you like best? Why?

CHECK WHAT YOU LEARNED

Preparation Techniques

Can you describe the following?

1. What “cut in” shortening should look like?

2. How to knead biscuits?
3. How long to knead biscuits?

PRODUCT EVALUATION

How Do Your Biscuits Measure Up?

Appearance

Double in size during baking

Slightly crisp top

Tops are level and smooth

Even size and shape

Color

Light brown or golden brown top

Lighter color on sides

Texture and Inside

Inside creamy white

Light, fluffy, and moist with a crisp and tender crust

Flakiness

Be able to peel off in layers

Flavor

Taste is pleasing

Biscuit Troubleshooters

Biscuit Problem

Probable Cause

Uneven or irregular shape

Careless cutting; overmixed

Dark brown

Overbaked; oven too hot

Dark bottom

Dark pan used for baking,(absorbs heat more quickly);
poor heat circulation

Pale

Underbaked; oven too cool

Flour streaks

Undermixed; excess flour used in rolling

Brown and black freckles on top

Undermixed

Off-Flavors

Rancid fat (fat that is too old)

Thick crust

Oven heat too low

Tough, bready crumb

Inaccurate measuring: too much flour

UNIT 4—PREPARE QUICK LOAF BREADS

Quick loaf breads mix quickly but take about 1 hour to bake. You might even want to make a quick loaf bread the day before you plan to serve it. Often they are easier to slice the day after baking.

Quick loaf breads are usually a drop batter, just like muffins, but contain more sugar, fat, and eggs. Don't worry when the top cracks during baking. This is a sign of a good quick loaf bread.

BREAD STORAGE

- Cool bread thoroughly before storing it.
- Wrap and store in a clean, dry, ventilated place.
- Storing bread in the refrigerator helps prevent molding, but the bread will dry out and become stale more quickly.
- When stored in the freezer, bread will keep its freshness for 8 months at 0°F. Wrap in moisture-proof heavy-duty plastic wrap, airtight plastic bags, or aluminum foil.
- Mold growth on bread can be slowed by:
 1. Refrigerating or freezing bread.
 2. Buying bread that contains either calcium propionate or sodium propionate. These food additives slow mold growth. They are found in commercial bread products but are not available for home baking.

MEETING TOPICS

Baking Terms

Check the baking procedures you have done so far:

- _____ *Bake*—Cook in oven.
- _____ *Beat*—Mix two or more ingredients well.
- _____ *Beating* takes a little muscle or an electric mixer.
- _____ *Blend*—Mix ingredients until smooth.
- _____ *Combine*—Mix ingredients together.
- _____ *Cut in*—Mix shortening and flour with a pastry blender or with a cutting motion with table knives.
- _____ *Fold*—Combine gently, bringing rubber scraper down through mixture, across bottom, up and over top until blended.
- _____ *Grease*—Lightly coat bottom and sides of pan with shortening.
- _____ *Knead*—Work dough with your hands in folding-back and pressing-forward motions.

- _____ *Roll out*—Place on board and spread evenly with a rolling pin.
- _____ *Sift*—Put through a flour sifter or fine sieve.
- _____ *Stir*—Mix with a spoon, round and round.

Neatness Counts

Check yourself to see how you rate with the following:

- _____ Do you wash hands and keep hair back before you start?
- _____ Do you avoid wearing long, baggy sleeves when cooking?
- _____ Do you keep your work area organized and neat?
- _____ Do you clean up as you go?
- _____ Do you leave the kitchen as clean and neat as it was before you started?

Creamed Mixing Method

Quick loaf breads may be prepared using the *creamed method* of mixing. That means (1) the sugar and shortening are creamed together; (2) the eggs are beaten into that mixture; and (3) the flour and liquid are added alternately to the mixture. This method is also used to make coffeecakes.

How Leavening Agents Work

Leavening agents help make bread rise and become light and fluffy. There are three types of leavening agents: air, steam, and gas.

1. *Air* is added to a batter or dough. When air gets warm it expands. What are some ways of adding air into a batter or dough?
2. *Steam* develops when the liquid ingredients get hot and give off steam. Pour batters have a high proportion of liquids. What are some pour batter quick breads that use steam as a leavening agent?
3. *Gas* is made when some ingredient gives off carbon dioxide. We exhale carbon dioxide when breathing. Baking powder or baking soda causes a chemical reaction that gives off carbon dioxide. Yeast gives off carbon dioxide, too.

Ask your leader to explain the difference between baking soda and baking powder. Write an explanation of the difference in your own words here:

Recipes

Banana-Nut Loaf

(a creamed method quick loaf bread)

Ingredients

- 2 cups all-purpose flour
- 2 teaspoons baking powder
- ³/₄ teaspoon salt
- ¹/₄ teaspoon baking soda
- ¹/₂ cup shortening
- ¹/₂ cup sugar
- 2 eggs
- 1 teaspoon finely shredded orange peel
- 2 ripe medium bananas, cut up
- 2 tablespoons milk
- ¹/₂ cup chopped pecans or walnuts

Procedure:

1. Preheat oven to 350°F.
2. Lightly grease a 9x5x3-inch loaf pan; set aside.
3. In mixing bowl thoroughly stir together the flour, baking powder, salt, and soda; set aside.
4. In small mixer bowl cream the shortening, sugar until light and fluffy.
5. Add eggs and orange peel; beat well.
6. In small bowl, mash bananas with fork (should have about 1 cup); stir in milk.
7. Add flour mixture and banana mixture alternately to creamed mixture.
8. Beat until smooth after each addition.
9. Fold in nuts.
10. Pour batter into prepared pan.
11. Bake in 350°F oven for 45–50 minutes or until wooden pick inserted near center comes out clean.
12. Turn out and cool on wire rack.

Makes 1 loaf; serves 12.

Nutrition Facts

Serving Size 1 slice
Servings per Recipe 12

Amount per Serving

Calories 227	Calories from Fat 81
% Daily Value*	
Total Fat 9g	14%
Total Carbohydrate 34g	11%
Dietary Fiber .3g	1%
Protein 3g	6%
Calcium 18mg	2%
Iron 1.0mg	6%

Two-Corn Bread

(a muffin method quick bread)

Ingredients

- 3 eggs
- 1 cup cream-style cottage cheese
- 1 8-ounce can cream-style corn
- 1 cup all-purpose flour
- 1 cup yellow cornmeal
- 2 tablespoons sugar
- 1 tablespoon baking powder
- ¹/₄ teaspoon salt

Procedure

1. Preheat oven to 375°F.
2. Lightly grease a 9x9x2-inch baking pan; set aside.
3. In small bowl, beat eggs and cottage cheese till smooth; stir in corn. Set aside.
4. In large bowl, stir together flour, cornmeal, sugar, baking powder, and salt.
5. Add egg mixture to dry ingredients all at once. Stir just till blended.
6. Turn into prepared pan.
7. Bake 30–35 minutes. Serve warm.

Serves 9

Nutrition Facts

Serving Size 1/9 of pan
Servings per Recipe 9

Amount per Serving

Calories 184	Calories from Fat 28
% Daily Value*	
Total Fat 3g	4%
Total Carbohydrate 30g	10%
Dietary Fiber .1g	0%
Protein 8g	16%
Calcium 27mg	3%
Iron 1.6mg	6%

*Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:

Fat 9 Carbohydrate 4 Protein 4

MEETING ACTIVITIES

Experiments To Try

Leavening Agent Activity

Materials needed: Baking powder, baking soda, vinegar, water, 2 glasses, small saucepan, and a teaspoon.

Describe what happens in each step of the experiment.

Step 1	Step 2	Step 3
Add $\frac{1}{2}$ cup cool water	Pour into a saucepan and heat	Add 1 tablespoon vinegar

Glass 1

1 tablespoon
baking
powder

Glass 2

1 tablespoon
baking soda

Conclusions: What leavening agent should be used if there is no acid in the product? _____

What is necessary in a product to make baking soda work? _____

Bread Storage

Purpose: To compare differences in bread quality with different storage techniques.

Materials needed: Ingredients and supplies for making a quick loaf bread—any type you prefer.

Procedure:

1. Prepare and bake a loaf of bread as directed in the recipe.
2. After bread is cool, divide into 3 parts.

3. Wrap each part of the loaf separately.
4. Store part 1 in the refrigerator, part 2 at room temperature, and part 3 in the freezer.
5. Compare 1 to 2 weeks later. What is the best storage method for 2 weeks?

Baking Language Word Puzzle

Directions

In the numbered spaces, write the word from the word list that best fits each description.

When you are finished, the boxed-in letters will vertically spell out a phrase. Although you are a beginning baker, this tells you what meals you can help with by preparing a bread product.

Descriptions

1. To cook by dry heat in an oven.
2. Ingredients in a recipe which are dry, such as baking powder, flour, salt.
3. When a recipe gives this preparation direction, do this: add $\frac{1}{3}$ of the dry ingredient, then $\frac{1}{2}$ of the milk, another $\frac{1}{3}$ of the dry ingredient, the rest of the milk, and the rest of the dry ingredient. Mix after each portion is added.
4. To combine ingredients until evenly distributed. Not as vigorous as beating.
5. Substances of which food is made; functions in growth, repair, energy supply, etc., for individuals.
6. To beat shortening or a mixture of a fat ingredient and sugar until light and fluffy.
7. To mix two or more ingredients thoroughly.
8. Gently combine two or more ingredients.
9. Pass flour or a dry mixture through a sieve or sifter to add air and break up lumps.
10. To distribute solid fat in dry ingredients by a cutting motion with knives or a pastry blender until finely divided.
11. Bread product which can be rolled or shaped by hand. Examples: biscuits, shortcakes, scones.
12. To mix very well with a mixer, egg beater, or spoon until smooth. Makes mixture smooth and puts air into it.
13. Bread product which drops in soft, moist mounds from a spoon. Examples include: muffins, nut breads, and drop biscuits.
14. Examples of this category of ingredients include shortening, margarine, butter, and oil.
15. Features or characteristics of a baked product we check to determine how well it measures up to the standards we establish.

CHECK WHAT YOU LEARNED

Take a look back, now, at your bread baking accomplishments.

- Have you kept track of your baking progress?
- Have you been recording your new skills and the date you accomplished them on your Bread Baking Add Sheet in your 4-H Record Book? Turn to that page and see if you are current in recording your baking progress.

PRODUCT EVALUATION

How Do Your Quick Loaf Breads Measure Up?

Appearance

Golden brown

Rough top surface—slight sheen to top surface

Slightly rounded top

Interior—distinctive of kind

Flavor

Delicate

Mild

Distinctive of kind

Texture

Moist

Tender, thin crust

Crumb—medium size, fairly uniform

Aroma

Appropriate to kind

Quick Loaf Bread Troubleshooters

Quick Loaf Bread Problem	Probable Cause
Pale exterior	Underbaked; oven too cool; poor heat circulation
Dark exterior	Overbaked; oven too hot; poor heat circulation
Peaked top	Inaccurate measuring, too much flour; too much batter in pan or pan too small
Smooth, dull surface	Overmixing
Off-flavor	Rancid fat; inaccurate measuring; stale ingredients
Heavy, compact texture	Underbaked
Sticky, sugary surface	Inaccurate measuring; improper cooling
Coarse tough texture	Overmixing; inaccurate measuring
Tunnels	Overmixing; batter too deep

UNIT 5—EXPLORE STEAM-LEAVENED QUICK BREADS

By now, you're becoming an accomplished baker! You've prepared a wide variety of bakery products—all of them using baking powder or baking soda as the leavening agent. Now, you'll have a chance to use air and steam as leavening agents.

You'll make popovers and be amazed as the popovers pop! If your oven has a glass door, watch how steam suddenly causes the popping. Popovers are made from a thin, pour batter.

THE STORY OF ROYAL BUN HOUSES

Many years ago, in London, there were two official "Royal Bun Houses." They had freshly baked breads, buns, and rolls for sale every day. The people gathered at six in the morning to get the baked goodies right after the treats came out of the huge ovens. Today we call bun houses neighborhood bakeries.

MEETING TOPICS

Measurement Matchup

What is the best way to measure the following ingredients? Match each ingredient amount with the best measuring equipment to use. Then match these with the best measuring method. The first one is done for you.

Ingredient Amount

- b,f 1. $\frac{3}{4}$ cup milk
- _____ 2. 1 cup brown sugar
- _____ 3. $\frac{1}{2}$ cup oatmeal
- _____ 4. 1 heaping tablespoon baking powder
- _____ 5. 1 cup flour
- _____ 6. 2 teaspoons baking soda
- _____ 7. 1 cup shortening
- _____ 8. 1 cup granulated sugar
- _____ 9. 2 cups water
- _____ 10. 1 teaspoon brown sugar

Measuring Equipment

- a. Dry measuring cup
- b. Liquid measuring cup
- c. Measuring spoons

Measuring Method

- d. Spoon lightly or sift; level off.
- e. Pour in; level off.
- f. Pour in; read at eye level.
- g. Pack down firmly.
- h. Pour in, forming mound.

Guidelines for Perfect Popovers

- Preheat the oven.
- Have all ingredients at room temperature before using.
- For the best popovers, use deep muffin tins or custard cups, rather than shallow ones.
- The oven must be HOT. High temperatures turn the liquid in the batter to steam.
- DON'T OPEN OVEN DOOR before popovers are set! The heat will escape and your popovers won't "pop."
- If not cooked long enough, the popovers will collapse.
- A popover is done when it is brown and the sides are firm.
- After baking, insert a sharp knife gently into the popovers so steam can escape.

REMINDER TIP: It's steam that makes popovers pop, but if the oven is too hot they brown before popping; when it's too cold, they start and then flop! The oven temperature must be just right.

Recipe

Perfect Popovers

Ingredients

- 1 cup milk
- 1 tablespoon melted margarine or cooking oil
- 1 cup all-purpose flour
- $\frac{1}{4}$ teaspoon salt
- 2 eggs

Procedure

1. Preheat oven to 450°F.
2. Combine milk, melted margarine or oil, flour, and salt in mixing bowl.
3. Beat just until smooth.
4. Add eggs, one at a time, but do not overbeat. Batter should be smooth and slightly thickened. Fill greased muffin tins or custard cups $\frac{3}{4}$ full.
5. Bake at once.
6. After 15 minutes lower heat to 350°F, and bake 20 minutes longer. Don't open oven to peek!
7. Check to make sure side walls are firm before removing from oven.

Makes 5–9 popovers

Nutrition Facts	
Serving Size 1 popover	
Servings per Recipe 7	
Amount per Serving	
Calories 87	Calories from Fat 27
% Daily Value*	
Total Fat 3g	5%
Total Carbohydrate 11g	4%
Dietary Fiber 0	0%
Protein 5g	1%
Calcium 38mg	4%
Iron .8mg	4%
*Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4

Categorize these foods (both your favorites and least favorites) into the food groups by completing the following chart:

Milk/Dairy

Meat/ Protein

Fruit/Vegetables

Bread/Cereals

Fats and Sweets

Now think about the foods you usually eat each day. Which food groups do you need more of in your diet? How can you make that change?

MEETING ACTIVITIES

Food Guide Pyramid

Use the food guide pyramid to plan meals. In addition to breads and cereals, there are: fruits, vegetables, meat and protein foods, milk and dairy foods, and fats and sweets.

Personal Food Profile

On a sheet of paper list 15 of your most favorite foods.

List 10 of your least favorite foods.

How many servings do you need each day?

	Children, teen girls, active women, most men	Teen boys & active men
Bread group	9	11
Vegetable group	4	5
Fruit group	3	4
Milk group	2-3	2-3
Meat group	2	3

Consumer Experiment to Try

Bread and Cereal Labels

What you can learn from bread labels? Collect empty bread product wrappers and cereal boxes. Bring them to your meeting. Compare two bread or cereal products. Share information with your leader and 4-H friends.

Compare:

Name of product

Brand

Appearance of package

Package appeals to....

Weight

Price

Number of servings

Product is made from what grain?

Ingredients in product

Serving size

Cost per serving

Food Labels List:

- A description of the item including brand
- Size (including weight)
- Number of servings
- A list of the ingredients in order of their concentration in the food with the ingredient of largest amount listed first
- Sometimes special storage instructions
- Nutritional value
- Cost

You have probably noticed the terms “enriched” or “fortified” on these labels. These two terms mean that some nutrients have been added to processed foods. “Enrich” and “fortify” are slightly different.

- Enriched means that nutrients lost during processing are added.
- Fortified means that more nutrients than were in the product naturally are added.

Read labels on sweetened cereals. Many are heavily fortified. This means lots of nutrients have been added—probably more than that food product originally had.

CHECK WHAT YOU LEARNED

1. What is the leavening agent used in popovers?
2. How does it work?
3. What is your description of the consistency of popover batter?
4. Look up the recipe for Yorkshire pudding to see what it has in common with popovers.

PRODUCT EVALUATION

How Do Popovers Measure Up?

Appearance

- Double in size
- Irregular
- Puffed

Texture

- Hollow inside
- Few thin partitions
- Crust tender, crisp, and crunchy

Flavor

- Mild, pleasing

Popover Troubleshooters

Popover Problem	Probable Cause
Flat small popover	Oven too cold; cold eggs; too much fat; inaccurate measuring of liquids (too much or too little).
Shell not crisp	Too much liquid, not baked long enough.
Inside doughy	Not beaten well enough; not done; too much fat.

UNIT 6—STIR UP SPEEDY CONVENIENCE MIXES

Now that you know about making breads from scratch, try a speedier method—a Quick Bread Master Mix. It is mixed and ready to be used to make pancakes, pizza dough, biscuits, muffins, and cake.

THE FIRST BISCUIT MIX

Bisquick®, the first commercial baking mix, was introduced over 50 years ago. While riding a train to San Francisco, a young General Mills executive ordered a late dinner and was surprised to receive fresh hot biscuits in record time. The chef said the secret was that the dough was mixed earlier and stored in the refrigerator. The young executive was so impressed with the premixed biscuit dough he asked the chief chemist at General Mills to develop a mix for bakers at home!

Several problems were overcome in making Bisquick®, such as keeping the shortening and baking powder from going bad, and blending ingredients that would make biscuits as good as homemade.

MEETING TOPICS

Bread/Cereal Nutrition

The bread/cereal group provides us with important nutrients needed for good health. How much do you know about these nutrients? Match the functions of nutrients on the right side with the nutrients provided by the bread/cereal group on the left.

<i>Key Nutrients</i>	<i>Function</i>
1. ____ B Vitamins	a. Carries oxygen in the blood
2. ____ Iron	b. Found in wholewheat breads and cereals; prevents constipation
3. ____ Fiber	c. Provides energy
4. ____ Starch	d. Helps the body use other nutrients

- Depending on a person's age and sex, 6–11 servings daily are recommended from the bread and cereal group.
- Each biscuit or muffin counts as a serving of bread.

QUICK BREAD MIX KNOW-HOW

Measuring Suggestions

- It is not necessary to sift the mix—just stir before measuring.
- Spoon mix lightly into measuring cup and level.

Storing the Mix

- Keep the mix in a jar or can with a tight-fitting lid. A 3-lb. coffee can works nicely.
- Put the date on the container. The mix keeps about 1 month.
- When made with vegetable shortening, the mix can be stored on the shelf. If made with butter, margarine, or lard, refrigerate it.

Baking Pan Know-How

- The size, shape, weight, and material of a baking pan affects baking results. Most recipes suggest the pan size to use.
- For pans that are not marked, measure the size from top inside edges.
- Generally, pans should not be filled to more than half their depth.
- Round pans give more even browning than those with square corners.
- If an oversized pan is used, the baked product will be too thin and may dry out or burn. Pans that are too small may cause peaks or overflows.
- Use cookie sheets or very shallow baking pans for biscuits, yeast rolls, cream puffs, or cookies.
- Pancakes bake more evenly on a heavy griddle or skillet due to even heat distribution.

You may use paper liners for baking muffins and cupcakes. Liners prevent sticking and simplify pan washing. However, paper is a poor conductor of heat. It causes poor browning of the bottom and side crusts.

Recipes

Master Mix

Ingredients

- 8 cups sifted all-purpose flour
- $\frac{1}{4}$ cup double-acting baking powder
- $1\frac{1}{3}$ nonfat milk solids
- 4 teaspoons salt
- $1\frac{1}{2}$ cups vegetable shortening

Procedure

1. Stir baking powder, dry milk, and salt into the sifted flour. Sift all dry ingredients together until well mixed.
2. Cut or mix fat into flour mixture until all particles of fat are thoroughly coated and mixture resembles coarse oatmeal.

NOTE: 4 cups whole-wheat flour can be substituted for part of the all-purpose flour. Also, enriched cornmeal or rolled oats can be substituted for part of the all-purpose flour.

Biscuits

Ingredients

2 cups Master Mix
1/2 cup water

Procedure

1. Preheat oven to 425°F.
2. Add the water to Master Mix. Stir 20–25 times.
3. Turn onto a lightly floured board and knead about 15 times.
4. Roll to 1/2-inch thickness.
5. Cut with a floured biscuit cutter. Place on an ungreased cookie sheet or baking pan.
6. Bake about 10 minutes.

Nutrition Facts

Serving Size 1 biscuit
Servings per Recipe 12

Amount per Serving

Calories 100	Calories from Fat 45	
		% Daily Value*
Total Fat 5g		8%
Total Carbohydrate 13g		4%
Dietary Fiber .1g		0%
Protein 2g		4%
Calcium 47mg		6%
Iron .7mg		4%

Pizza

Ingredients

2 cups Master Mix
1/2 cup water
1 8-ounce can tomato sauce
2–3 tablespoons minced onion
1/4 pound lean ground beef
8 ounces shredded mozzarella cheese

Procedure

1. Preheat oven to 425°F.

2. Measure mix into a bowl, add water, stir to form soft dough.
3. Knead 5–6 times.
4. Spread dough on a baking sheet. Turn edges up.
5. Brown ground beef in a small skillet; drain away excess fat.
6. Spread tomato sauce over dough. Sprinkle with onion, browned meat, and cheese.
7. Bake for about 20 minutes or until edges are brown and cheese melts.

Makes 3–4 servings

Nutrition Facts

Serving Size 1/4 of pizza
Servings per Recipe 4

Amount per Serving

Calories 564	Calories from Fat 279	
		% Daily Value*
Total Fat 31g		48%
Total Carbohydrate 40g		13%
Dietary Fiber		0%
Protein 25g		50%
Calcium 523mg		52%
Iron 2.6mg		14%

*Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:

		Calories:	2,000	2,500
Total Fat	Less than		65g	80g
Sat Fat	Less than		20g	25g
Cholesterol	Less than		300mg	300mg
Sodium	Less than		2,400mg	2,400mg
Total Carbohydrate			300g	375g
Dietary Fiber			25g	30g

Calories per gram:

Fat 9 Carbohydrate 4 Protein 4

Pancakes

Ingredients

2 cups Master Mix
1 cup water
2 eggs, beaten

Procedure

1. Put all the ingredients into a bowl.
2. Stir just enough to moisten dry ingredients.
3. Drop by tablespoons onto a hot greased skillet. A skillet is hot when water dances on it.
4. Cook slowly until the surface is covered with bubbles.
5. Turn and cook until second side is well-browned.

Makes about 12 medium-sized pancakes

Nutrition Facts

Serving Size 1 pancake
Servings per Recipe 12

Amount per Serving

Calories 55 **Calories from Fat** 21

	% Daily Value*
Total Fat 2g	3%
Total Carbohydrate 6g	2%
Dietary Fiber	0%
Protein 2g	4%
Calcium 22mg	2%
Iron .38mg	2%

MEETING ACTIVITIES

Field Trips

Your project leader will have information on field trip ideas.

Consumer Experiments to Try

1. Compare Master Mix with commercial mixes. Check at least two commercial baking mixes at the grocery store. Complete the following chart:

Product	Contains Enriched Flour (yes/no)	Kinds of Milk Used	Leavening Agent Used
Homemade Quick-Bread Mix			

2. Compare pancake mixes to learn their differences. Use criteria from the first experiment.

Materials

2 or 3 different pancake mixes, and ingredients and supplies for making pancakes.

Procedure

1. Prepare pancakes according to directions for two different commercial pancake mixes. Use the Master Mix for 1 batch of pancakes.
2. Cook pancakes as directed.
3. After they are done, compare the products:

Type of Pancake	Appearance	Texture	Taste	Ease of Preparation	Amount Recipe Makes
Master Mix Pancakes					

Comments and Conclusions:

CHECK WHAT YOU LEARNED

1. Look at the list of ingredients of two different packaged quick bread mixes. What are the basic ingredients in packaged quick bread mixes? What ingredients need to be added to the mix to make biscuits? Muffins?
 - a. What are the common ingredients in all quick breads?
 - b. Why are they labeled "quick?"
2. a. What are the basic ingredients contained in the Master Mix?
 - b. What ingredients do you need to add when preparing bread products from the Master Mix?
3. List the key nutrients provided by bread and cereal products:

Do you know why each is important for good health?

UNIT 7—LEARN ABOUT YEAST BREADS

Does making homemade yeast breads seem hard? It can be easy and fun! Many bakers find it relaxing to knead dough, and fun to shape it into attractive breads.

Yeast is the ingredient that makes bread rise. It is a leavening agent. It is available in wet or dry forms, but active dry yeast is easiest to use.

Yeast is a living organism. It requires warmth, water, and sugar to grow and produce carbon dioxide gas which makes the bread rise. If the water used to dissolve yeast is too hot, it kills the yeast. If the water is too cold, the yeast grows slowly and very little carbon dioxide gas will be produced. The bread will not rise much.

MEETING TOPICS

Safety Check

Your kitchen is the most dangerous room in your house. There are more recorded accidents in the kitchen than any other room.

This is a list of hazards. Check things you need to change in your home before serious accidents happen.

- _____ Plugging several appliances into the same circuit.
- _____ Using frayed or cracked extension cords.
- _____ Disconnecting appliances by yanking on the cord.
- _____ Using electrical appliances near water or with wet hands.
- _____ Using utensils with loose handles or knobs.
- _____ Cooking while wearing baggy sleeves.
- _____ Not turning handles of pans to center of stove when cooking.
- _____ Not using thick, dry potholders.
- _____ Not wiping up spills.
- _____ Cutting toward hands with knife, rather than away.
- _____ Filling pans near the brim with liquid fat.
- _____ Having flammable material (such as paper towels) near a hot surface.
- _____ Having oven crusted with fat and drippings that have spilled over.
- _____ Not being able to find fire extinguisher materials (including baking soda).
- _____ Not watching food closely while cooking.

Baking Yeast Breads

- Dissolve yeast in warm (not hot) water. It should be 105°–115°F.
- Measure salt carefully. Salt controls the growth of yeast. Too little salt and the yeast will grow out of control, producing lots of carbon dioxide and a large loaf of bread with coarse texture and big air pockets. Too much salt and the yeast will not grow; the bread will be small and heavy.
- Add sugar, honey, corn syrup, or molasses for the yeast to use as food.
- Measure the full amount of flour called for in your recipe. Less may be needed on a dry sunny day; more on a wet rainy day.
- Use a warm place free of drafts for rising dough. An oven with a bowl of hot water in it works well. Or turn the oven on to warm for just a few seconds to heat the oven to 80°–85°F. Don't forget to turn the oven OFF before you put the bread in to rise.
- Test to see if bread is "doubled in bulk" by pressing the tips of two fingers lightly and quickly about $1/2$ inch into the top of the dough. If dent stays, dough is light enough to be called "doubled in bulk." If dent fills immediately, let dough rise about 15 minutes longer, and test again.
- After putting dough in pans, allow breads to rise again until doubled. Test again for "doubled in bulk."
- To test for doneness, tap the top of the loaf. It sounds hollow when done.
- Remove bread from pans as soon as it comes from the oven and cool on a wire rack. After it's cool, store in plastic bag.

Recipes

No-Knead Yeast Bread

Ingredients

- 2 cups all-purpose flour
 - 1 package active dry yeast
 - $1\frac{1}{4}$ cups milk
 - $\frac{1}{2}$ cup butter or margarine
 - $\frac{1}{4}$ cup sugar
 - 1 teaspoon salt
 - 1 egg
 - $1\frac{1}{4}$ cups all-purpose or whole-wheat flour
- Shortening

Procedure

1. In large mixing bowl, mix the 2 cups flour and yeast with a wooden spoon.

2. Put milk, butter, sugar, and salt into a saucepan. Cook and stir on medium heat until the butter melts and mixture is warm (115°F).
3. Pour warm mixture over flour mixture. Add egg. Beat at low speed with mixer for 30 seconds. Scrape bowl with a rubber spatula. Beat at high speed for 3 minutes.
4. Gradually stir in the 1¹/₄ cups all-purpose or whole-wheat flour. Beat with wooden spoon till smooth.
5. Grease waxed paper with some shortening. Cover dough in bowl with the waxed paper. Put in a warm place to rise for 1 hour or until dough is twice as big.
6. Beat dough with a wooden spoon. Let rest 5 minutes. Grease baking pan.
7. Pour batter into greased 9x5x3-inch greased loaf pan. Cover with lightly greased waxed paper and let rise 30 minutes or until twice as big.
8. About 10 minutes before time is up, turn oven to 375°F.
9. Remove waxed paper. Bake 45 minutes or until golden and bread sounds hollow when lightly tapped on top.
10. Cool before slicing.

Makes 1 loaf (approximately 18 slices)

Nutrition Facts		
Serving Size 1 slice		
Servings per Recipe 18		
Amount per Serving		
Calories	140	Calories from Fat 27
% Daily Value*		
Total Fat 3g		5%
Total Carbohydrate 21g		7%
Dietary Fiber 0		0%
Protein 5g		10%
Calcium 44mg		4%
Iron 1.4mg		8%
*Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories:	2,000 2,500
Total Fat	Less than	65g 80g
Sat Fat	Less than	20g 25g
Cholesterol	Less than	300mg 300mg
Sodium	Less than	2,400mg 2,400mg
Total Carbohydrate		300g 375g
Dietary Fiber		25g 30g
Calories per gram:		
Fat 9	Carbohydrate 4	Protein 4

Yeast Rolls

Drop batter with a spoon into lightly greased muffin tins, filling them about halfway. Let rise 20–30 minutes. Preheat oven to 400°F and bake 12–15 minutes. Serve warm. Makes 12 yeast rolls.

Variation: Use 1/2 whole wheat flour and 1/2 all-purpose flour.

MEETING ACTIVITIES

Function of Ingredients Matching

Column A lists ingredients used in yeast breads and Column B lists functions of ingredients. In the space to the left of Column A, place the letter of the function in Column B that is best served by the ingredient.

Column A

1. _____ Flour
2. _____ Yeast
3. _____ Liquid
4. _____ Salt
5. _____ Sugar
6. _____ Shortening

Column B

- a. Makes the bread tender
- b. Controls rate of yeast growth
- c. Helps to brown the crust
- d. Gives structure and body to the loaf
- e. Is needed to develop the gluten
- f. Speeds up yeast activity
- g. Gives flavor
- h. Forms carbon dioxide gas

Experiment to Try

Effects of Leavening Power of Yeast

Before beginning the experiment you'll need these items: dry yeast, all-purpose flour, salt, warm water, sugar, measuring spoons, mixing spoon, and 3 large glasses.

To conduct the experiment, follow these steps:

1. In a glass, mix 1 teaspoon dry yeast, 1 tablespoon warm water, and 2 tablespoons flour. Label it #1.
2. Repeat the mixture in another glass and add 1 tablespoon sugar. Label it #2.
3. Repeat the mixture in a third glass and add 1 tablespoon sugar and 1 teaspoon salt. Label it #3.

4. Stir each mixture and set aside for 20 minutes at room temperature.
5. Record your observations and conclusions.

CHECK WHAT YOU LEARNED

Yeast Word Search

Fill in the blanks with words related to yeast bread making. Review the information from "Baking Yeast Bread" earlier in this unit for ideas.

1. _____ is a one-cell organism used as a leavening agent.
2. _____ is a gas given off when yeast reacts.
3. The _____ will be coarse if you forget the salt in your bread recipe.
4. You need to _____ sugar or a sweetener with the yeast mixture to provide food for the yeast to grow.
5. As dough _____, the yeast changes it from a firm, heavy ball into a big, light puffy one.
6. Yeast dough rises best in a _____ place.
7. Put dough in a lightly _____ bowl and then cover when rising.

8. Dough is _____ when ball of dough is twice as big as at first.
9. Tap the top of bread and listen for a _____ sound to test for doneness.
10. When _____, place loaf of bread in plastic bag and seal for storage.

PRODUCT EVALUATION

How Do Your Yeast Breads Measure Up?

Appearance

Golden brown top, sides pale golden brown
Evenly rounded, smooth top

Interior—creamy white, or distinctive of ingredients

Flavor

Sweet, nutty

Aroma

Mild, slightly yeasty

Texture

Uniform medium-cells; thin cell walls; moist;
springy to touch

Upper crust— $\frac{1}{8}$ -inch thick

Crisp, tender, light in proportion to size

Yeast Bread Troubleshooters

Yeast Bread Problem

Probable Cause

Misshapen loaf

Inaccurate measure (too much or too little flour)
Overrisen before baking
Oven too hot

Split crust

Oven too hot at first
Loaf too large for pan

Top crust wrinkled

Cooled too quickly, or in draft

Off flavors

Old yeast
Too warm temperature during rising
Oven too cool
Underbaked
Bread wrapped while still warm

Coarse texture

Too little kneading
Too much rising
Oven too cool
Too much flour

Tough

Too much flour

Heavy, compact

Insufficient or too much rising before baking
Too much flour
Poor yeast
Yeast killed—liquid too warm or temperature too warm while rising

Doughy

Underbaked
Allowed to “steam” in pan—remove as soon as it is taken from oven

UNIT 8—SHARE AND EAT

By now, you've tried a wide variety of bread products. You've explored baking quick breads and tried your hand at yeast breads.

Why not share what you've learned with others? You and other members of your group need to talk with your leader to decide what kind of a sharing activity you want to have at this last meeting—getting ready for the fair, completing your record books, sharing new recipes, a game or activity to share your bread baking knowledge, or inviting parents, family, and/or friends to sample some of the delicious bread products you and your 4-H friends have mastered.

Whatever activity your group decides to focus on for this activity, remember to allow time to plan ahead. In your planning, be sure to consider all the details so this last get-together of the 4-H year will be a great success!

MEETING TOPICS

Try A Buffet!

If you plan to invite parents, family, or friends to sample your *best* bread recipes, you might find it easier to serve the food buffet style. At a buffet, people take their food from a central table. Then they sit elsewhere to eat.

Buffets can be fun! You can serve many dishes. People can sample many tastes.

To set a good buffet, here are some suggestions:

- Make sure the table is large enough to hold all the food.
- Put the table within easy reach of the kitchen and guests. Be sure guests have room to walk away from the buffet table without getting in "traffic jams" with guests waiting in line.
- Stack plates at the beginning of the buffet line. Place flatware (silverware) and napkins at the end of the line. It is handy to wrap the flatware inside the napkin.

- Put serving utensils with each food.
- Serve foods that are easy to eat when holding a plate.
- Plan your buffet so that it includes a variety of foods in different colors, shapes, textures, and flavors. You may want to include food dishes from other food groups. If so:
 - Avoid greasy foods and items that are difficult to serve.
 - Choose foods that can stand at room temperature without too much loss of quality. Immediately after service is completed, put perishable foods in the refrigerator to prevent spoilage.
- Beverages slow up a buffet line. If possible, place them on a small table away from the main one.
- Have someone keep an eye on the serving dishes so that they can be refilled when necessary.

Decide what you will use for dishes. Regular plates? Paper plates? Glasses? Paper cups? Napkins? What kind of beverage? Will you have decorations? Where will people put their dishes after eating? Who will clean up?

Break into small groups to work on the planning of these details. Share ideas so everyone is aware of what is happening.

Serving Others

Review correct procedures for making introductions. Make sure you feel comfortable introducing guests. Also, you and other members each have a responsibility to keep the conversation going.

Between introductions and conversations, you and other members need to find time to take care of the buffet—to fill and refill the serving dishes, take care of small spills, keep the buffet organized and neat. There should be someone to serve the punch, and, if you have coffee, someone to pour the coffee.

MEETING ACTIVITIES

Share What You Learned—Project Exhibits

Many special 4-H events come up throughout the 4-H year. These provide you and other members in your club an opportunity to share information you've learned about your project with others. Have a brainstorming session to make a list of ideas for exhibits or demonstrations. Your leader has several exhibit ideas which could help you get ideas started.

Where can you share what you've learned? An exhibit or display could be set up at special 4-H events, including Super Saturdays, 4-H Fun Days, county get-togethers, food bowls, presentations to community organizations, county contest days (demonstration, judging, and activity contests), county fairs, or other 4-H program days.

Make sure your display or exhibit gets all members involved! You might work in teams or small groups in planning and preparing your exhibits or displays. This is a good opportunity for you to practice the leadership skills you have been learning in 4-H, as well as sharing responsibilities.

Planning for the Fair

Ask your leader for information about what you can exhibit at fairs. This is a great way to share your accomplishments with others!

Bread Baking Basics Wrap-Up

Ask your leader about the "Bread Baking Basics Wrap-Up" activity in the leader manual. This is an opportunity for you to review what you've learned this year. You can do a personal check on the skills and knowledge you've accomplished.

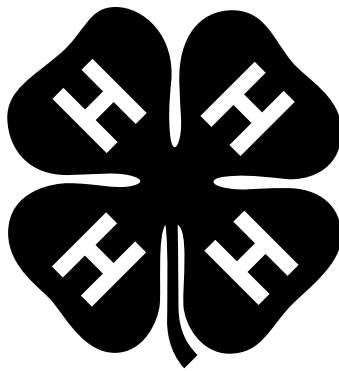
Also, you and other club members can help each other on bread baking facts you're not sure of.

Record Book Completion

Look over your record book. See what you need to fill in so that it is complete. If you have any questions ask your leader.

Learning More About Bread

Are you interested in learning more about bread baking? Make plans to enroll in the next project in the bread baking series, Exploring the World of Bread Baking. This project focuses on different methods of preparing yeast breads, roll shaping, and specialty yeast bread products.



More boys and girls belong to 4-H than any other youth group.

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