

UNIT 1

Cornmeal

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Introduction

Did you know that corn is the second largest crop in the world? And did you know that the United States grows more corn than any other country? It grows almost half of the corn grown in the entire world.

In Kentucky and in many countries of the world, boys and girls enjoy eating breads and snacks made with cornmeal. Cornmeal is made by grinding corn and is used in making many breads and cereals. Kentucky leads all other states in corn produced for making cornmeal. You have probably seen fields of lush green corn as you drive in the country. You may have grown corn in your own garden!

You are now starting your first 4-H bread project! Read on to see what you will learn and do.

You will learn:

- Why cornmeal is important to you as a food.
- How to make and serve several kinds of breads made with cornmeal.
- How to measure with standard spoons and cups.
- How to be clean and sanitary when you prepare food.
- How to rate your breads made with cornmeal.

You will also:

- Visit the grocery store and look at the different kinds of cornmeal.
- Keep a record of all the breads you make.
- Give a demonstration on making cornmeal bread.

Cornmeal... an Important Food

There are five groups of foods you need to eat every day. Fats, Oils, and Sweets Group is set aside for foods that have a lot of calories but little nutritional value. Added together, these groups are called the Food Guide Pyramid—a guide to daily food choices.

The Pyramid includes:

1. Bread, Cereal, Rice, and Pasta
2. Fruits and Vegetables
3. Milk, Yogurt, and Cheese
4. Meat, Poultry, Fish, Dry Beans, Eggs and Nuts
5. Fats, Oils, and Sweets

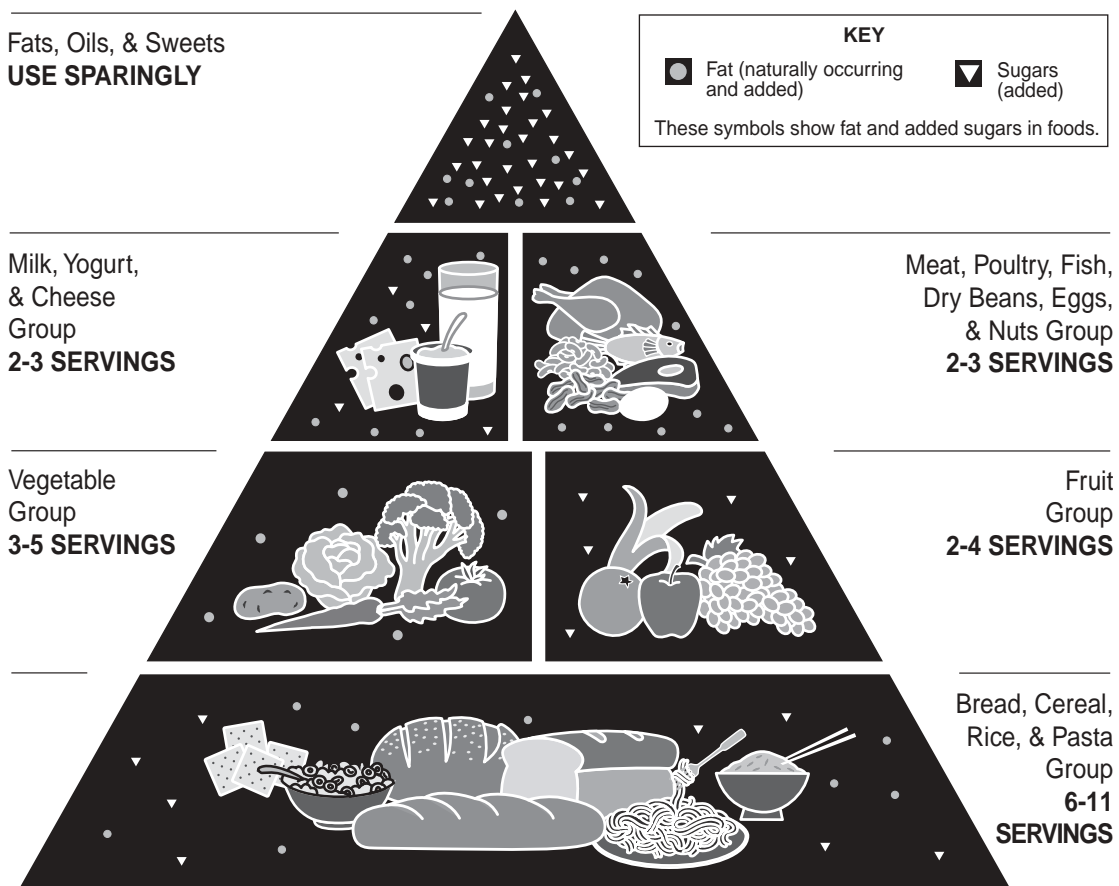
Foods from the Bread, Cereal, Rice, and Pasta Group give your body energy. They also give you fiber, along

with certain vitamins and minerals to help keep you healthy. This group also gives you an incomplete source of protein. Cornmeal is one way to get food from this group.

At a mill, corn is ground into meal. The person who grinds the corn is called a miller. When the corn is ground, it loses some of its vitamins and minerals. The miller must put back some of these nutrients into the meal. The miller will put back some vitamins—thiamin, riboflavin, and niacin—and one mineral, iron. This process of replacing these nutrients is called enrichment. Cornmeal from Kentucky is enriched. Look on the label to find the word *enriched*.

You should eat six to 11 servings of this group each day. One or more of these servings could be a cornmeal muffin or a cornmeal cake. What foods do you eat that have cornmeal in them? Do you like tacos? The shells are made from cornmeal. What other foods do you eat that are made from cornmeal?

Food Guide Pyramid A Guide to Daily Food Choices



Source: U.S. Department of Agriculture/U.S. Department of Health and Human Services

Activity

When you go to the grocery store, look for products made with cornmeal. But before you go to the store, look up the word *ingredient* in the dictionary. You will find this word on the packages of cornmeal products. While you are at the store:

1. Read the label on the package of plain cornmeal. What ingredients are listed?

Does the package say *enriched*? _____

2. Now read the ingredients on a package of cornmeal mix. What ingredients does it have that plain cornmeal does not have?

Does the package say *enriched*? _____

Ingredients for Making Cornmeal Bread

Remember the word *ingredient*. You will see it often. Ingredients are the individual food components that are used in the recipe to make a final food product.

CORNMEAL—made from the grain corn. The corn is ground until it is fine and grainy like coarse sand.

LEAVENING—The ingredient that makes the bread rise so that it is light and airy, not heavy and hard. There are two ingredients you can use to leaven. One is baking soda, and the other is baking powder. These are sometimes called leavening agents. A recipe that calls for baking soda also calls for an acid, such as buttermilk. Baking powder is used in recipes that have sweet milk or water. Together the leavening agent and the milk or other liquid help make the bread rise.

What kind of cornmeal do you have at home? Do you see the words *self-rising* or *plain* on the label? Self-rising cornmeal has the leavening already added. In plain cornmeal, you must add the leavening. Self-rising cornmeal is labeled as cornmeal mix because it has flour added. In times past, it was labeled *self-rising cornmeal*.

LIQUID—The milk, water, or other liquid needed to moisten the cornmeal and dissolve the salt. Milk adds to the food value of the bread and helps it to brown when it is baking.

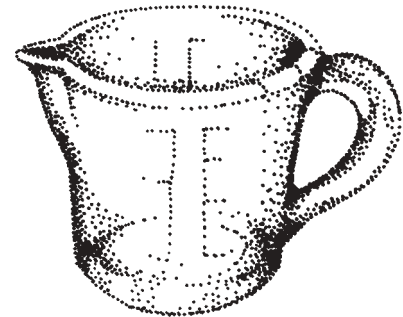
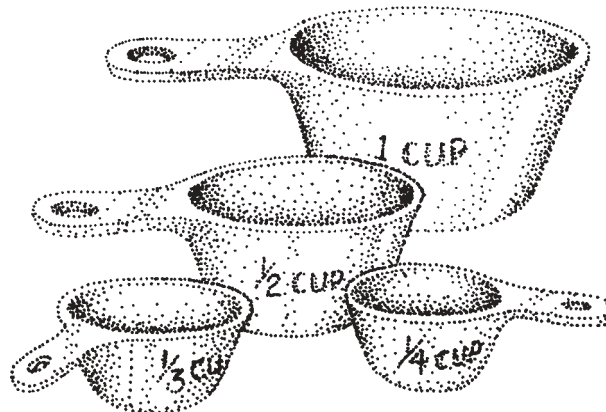
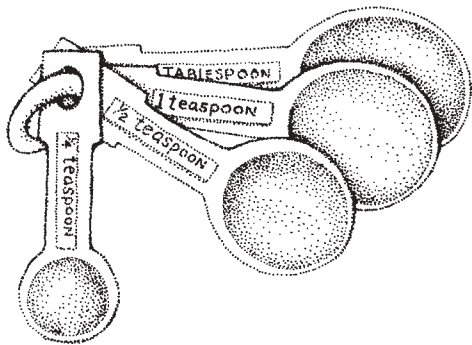
FAT or **OIL**—The ingredient, in either liquid or solid form, that helps to make the bread tender. Fat or oil is also called shortening.

Before You Start

1. Ask your parent or an older brother or sister to help you with this project.
2. Wash your hands and clean your fingernails. Always wash your hands after using the bathroom.
3. Wear a clean apron or pin a clean towel around your waist.
4. Be sure that your hair is held in place.
5. Keep the place where you are going to work neat and clean.
6. Read your recipe carefully before you begin. It tells you all the ingredients and utensils you will need.
7. Be sure you understand the terms used in the recipe.

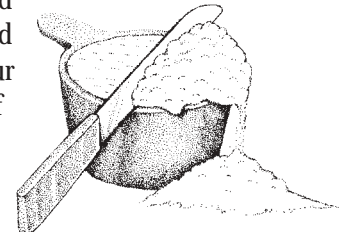
Measurement Abbreviations:

- **c** means a standard measuring cup.
- **t** or **tsp** means a standard measuring teaspoon.
- **T** or **tbsp** means a standard measuring tablespoon.



Tips for Baking

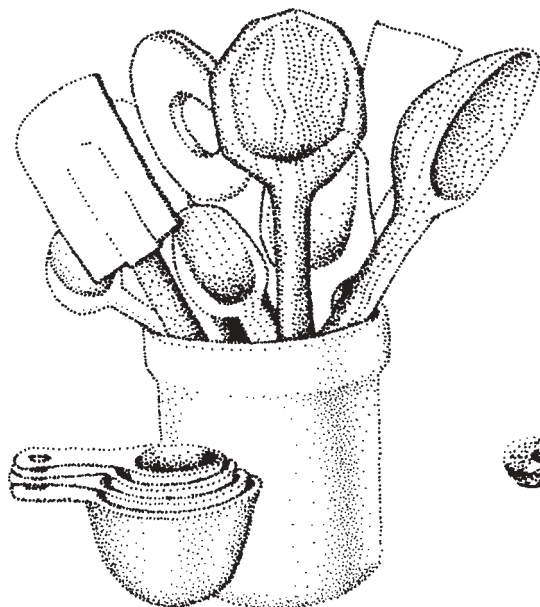
1. Follow your recipe carefully. Assemble utensils and ingredients before you begin mixing.
2. Measure cornmeal and flour as directed. Recipes call for sifted flour. Sift the flour first and then measure it. One cup of unsifted flour contains more flour than 1 cup of sifted flour. The difference could change the result of your bread. Be sure to level off the cornmeal and flour when measuring.
3. Mix the dry ingredients together so they will be mixed evenly. Also level off baking powder, soda, or any other dry ingredient.
4. Combine the ingredients in the order the recipe lists them for you.
5. Mix cornmeal batter just enough to blend the ingredients. Overmixing causes tunnels or large air holes. It also causes the bread to have a heavy texture and peaks on the top.
6. Bake the bread only until it is a golden brown. If you overbake the bread, it will be dry with a hard crust.
7. Use the pan size called for in the recipe if at all possible.
8. Bake at the exact temperature given in the recipe.
9. If the bread is not eaten right away, cool it before you wrap it.
10. A greased pan may be heated before filling with cornmeal mixture. This makes a browner crust and prevents sticking. Do not do this unless you have an older person to remove the hot pan from the oven.





Making Breads for Others

You will discover that your family and friends will enjoy the bread you make in this project. You may want to make bread for a friend or neighbor who cannot make bread because of an illness or disability. Or you may make bread for a new neighbor. Cornbread is usually best served hot, so you might make the bread at that person's house. Select the kind of bread you would like and check to be sure which ingredients and utensils you need to bring with you. You will need to allow time for cleaning up after you prepare the bread.



Cleaning Up

If you are neat when you cook, then clean-up is easy. Your family will be much more willing to let you cook if you leave the kitchen clean and put away all leftover ingredients, utensils, and equipment. Here's what you need to do:

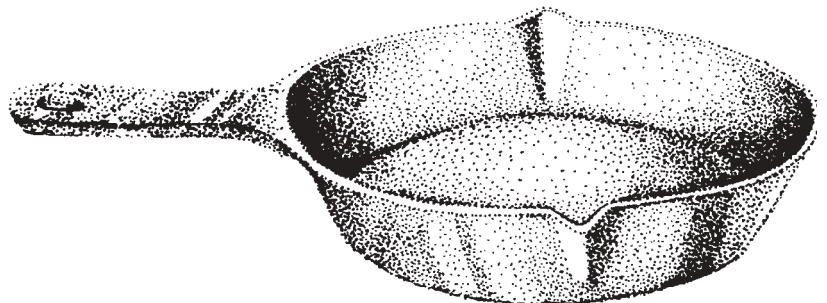
- Use hot, soapy water to wash utensils and then rinse with hot water.
- Wipe off small electrical appliances, if any were used. Remember, do not submerge appliances in the water.
- Wash off the counter, the top of the range, and any other kitchen area you have used.
- After drying utensils, store them where they belong in the kitchen.
- If you have spilled any ingredients on the floor, sweep, wipe, or mop the floor.

Be sure to leave the kitchen area neat!

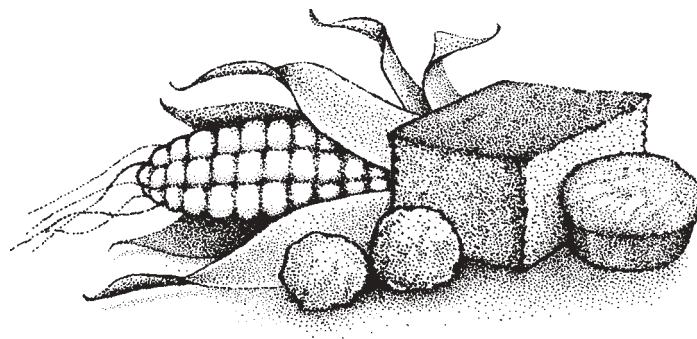
Cornmeal Demonstrations

You can share what you have learned in this project by giving a demonstration. You can show and tell others about making breads using cornmeal. Demonstrate one of the following or a topic you are especially interested in.

- How Leavening Works for Cornbreads
- Measuring Ingredients for Cornbread or Muffins
- Making Spoon Bread
- Making Cornmeal Muffins and Bread
- Cornmeal Labeling—Nutrition and Ingredients



Recipes



Making Cornmeal Breads

You can make cornmeal muffins for lunch or dinner. In Kentucky people like to eat cornmeal breads with bean soup, chili, fish, and many other meals. They often make cornmeal dressing at Thanksgiving to go with chicken or turkey. Below are some basic recipes for you to start with.

CORNMEAL MUFFINS

2 cups enriched cornmeal mix (self-rising cornmeal)
1 egg, beaten
1¹/₄ cups milk
1/4 cup melted shortening or vegetable oil

Preheat oven to 450°F.

Grease a muffin pan.

Measure the self-rising cornmeal into a mixing bowl.

In a small bowl, beat the egg slightly, then stir the milk into the beaten egg. Pour the milk and egg mixture into the cornmeal mix and stir to mix. Add the vegetable oil or melted shortening and mix. You now have what is called batter.

Fill the greased muffin cups two-thirds full of batter.

Bake at 450°F for about 20 to 25 minutes or until golden brown. When the bread is done, use a heavy pot holder and carefully pull out the oven rack. Turn off the oven. Remove the muffin pan and place on top of the range with a heavy mitt or potholder. Take the muffins out of the pan and place them on a serving dish. Makes 12 muffins.

Nutrition Facts

Per serving:

140 calories

6 gm fat

3 gm protein

19 gm carbohydrate

330 mg sodium

20 mg cholesterol

1 gm dietary fiber

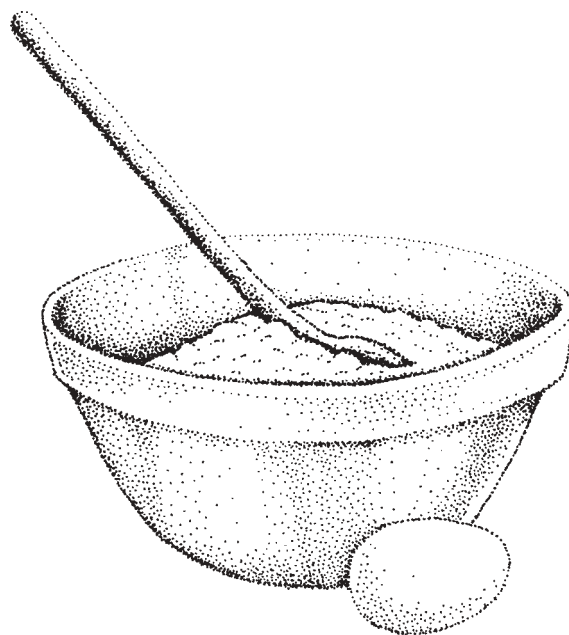
Food Guide Pyramid

1 serving Bread, Rice, Cereal, and Pasta Group

1/2 serving Fat, Oils, and Sweets Group

Variations: You can make a variety of cornmeal muffins by adding different ingredients to the dry cornmeal mix before adding the wet ingredients.

- 1/4 cup grated cheese, such as cheddar or Swiss
- 1/2 cup whole kernel corn, drained
- 1/4 cup diced peppers, such as green, red, yellow
- 1/4 teaspoon plus 1/8 teaspoon cumin
- 1/4 cup chopped frozen spinach, drained
- 2 tablespoons chopped chives
- 2 tablespoons chopped green onion or regular onion
- 1 tablespoon white sugar



CORN BREAD

1¹/₄ cups plain cornmeal
3/4 cup all-purpose flour
3 teaspoons baking powder
3/4 teaspoon salt
1 egg, beaten
1¹/₄ cups milk
1/4 cup melted shortening or vegetable oil

Preheat oven to 450°F.

In a mixing bowl, combine meal, flour, baking powder, and salt. Beat the egg slightly and gradually stir milk into the egg. Pour the milk and egg mixture into the dry ingredients and stir to mix.

Add the melted shortening. Also add the remaining milk if needed to make a medium-thick batter. Pour the batter into a greased 8-inch pan and bake at 450°F until crust is golden brown, about 30 minutes.

Nutrition Facts

Per serving:
200 calories
8 gm fat
5 gm protein
26 gm carbohydrate
430 mg sodium
30 mg cholesterol
2 gm dietary fiber

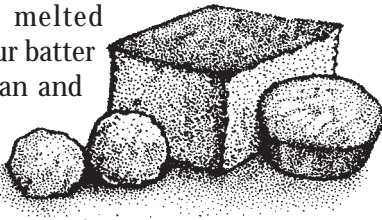
Food Guide Pyramid

1 serving Bread, Rice, Cereal, and Pasta Group
1/2 serving Fat, Oils, and Sweets Group

BUTTERMILK CORN BREAD

1/2 cup all-purpose flour
1/2 teaspoon soda
2 teaspoons baking powder
1¹/₂ cups plain cornmeal
3/4 teaspoon salt
1 egg, beaten
1¹/₄ cups buttermilk
3 tablespoons butter or margarine, melted

In a mixing bowl, combine all dry ingredients. Beat egg slightly and stir buttermilk into egg. Pour buttermilk and egg mixture into dry ingredients and stir to mix. Add melted shortening and mix. Pour batter into a greased 8-inch pan and bake at 450°F until crust is golden brown, about 30 minutes.



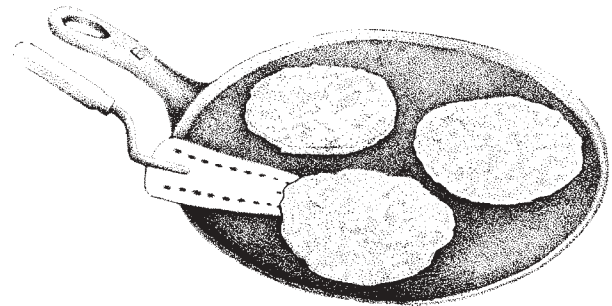
Variation: If you use cornmeal mix, increase to 2 cups and leave out flour, baking powder, and salt. Makes 8-inch pan or fills a medium-sized skillet.

Nutrition Facts

Per serving:
130 calories
3.5 gm fat
3 gm protein
21 gm carbohydrate
340 mg sodium
20 mg cholesterol
0.5 gm dietary fiber

Food Guide Pyramid

1 serving Bread, Rice, Cereal, and Pasta Group



CORNMEAL CAKES

Cornmeal cakes are cornbread cooked on top of the range. To make this kind of cornbread, combine the ingredients for making corn bread. Use more liquid if needed to make a slightly thinner batter. This should take about 2 tablespoons of liquid.

Preheat a heavy saucepan or skillet.

Lightly grease hot skillet. Pour about 1/4 cup of batter on hot skillet for each cake. Cook until golden brown on one side.

Using a spatula, turn the cake and brown on the other side. For a light, fluffy cake, do not press or mash with spatula.

Remove cornmeal cakes one at a time and stack on a platter. Serve hot. This recipe makes about 12 corncakes. To keep the first of the cornmeal cakes warm while others are cooking, hold them in an oven at about 150° to 200°F.

Corncakes or cornbread may be served with bean soup or chili con carne, topped with stew or hash, or served with other meals.

SPOON BREAD

Spoon bread is an old southern dish that is served at a dinner meal. You may have eaten or heard of spoon bread. It is a different type of bread because it is cooked in a casserole and eaten with a fork. To make spoon bread, use the recipe below.

- 1½ cups boiling water
- 1 cup plain cornmeal
- 1 teaspoon salt
- 3 tablespoons butter or margarine
- 1½ cups milk
- 2 eggs
- 3 teaspoons baking powder

Preheat oven to 425°F.

In a heavy saucepan, heat water to boiling. While stirring constantly, add cornmeal to water. Continue stirring and cook until mixture is mushy.

Remove from heat; add salt and butter or margarine.

Stir milk into beaten eggs and combine with cornmeal mixture. Add baking powder; mix well.

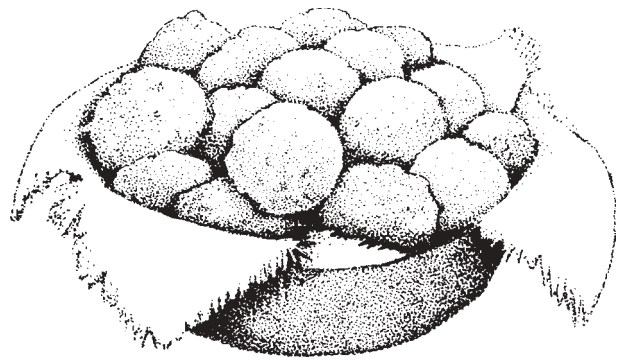
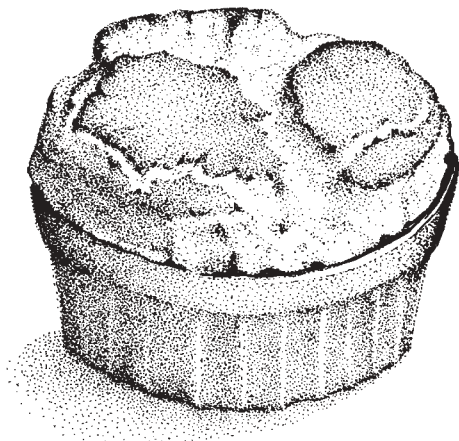
Pour into a greased 1½-quart baking dish. Bake until top is lightly browned, about 45 minutes.

Nutrition Facts

Per serving:
140 calories
7 gm fat
5 gm protein
16 gm carbohydrate
560 mg sodium
55 mg cholesterol
1 gm dietary fiber

Food Guide Pyramid

1 serving Bread, Rice, Cereal, and Pasta Group
½ serving Fat, Oils, and Sweets Group



HUSHPUPIES

Another bread made from cornmeal is called hushpuppies. This bread is fried in deep fat and is often served with fried fish. *Be sure you have help before you try this one.*

- 2¼ cups cornmeal mix
- 3 tablespoons self-rising flour
- 1 tablespoon finely chopped onion
- 1 egg
- 1 cup milk or water

Combine cornmeal, flour, and onion; add egg and gradually beat in milk or water. Drop from a spoon into hot fat where fish was fried. Fry until golden brown. Drain on absorbent paper and serve hot. Makes 16 small hushpuppies.

Nutrition Facts

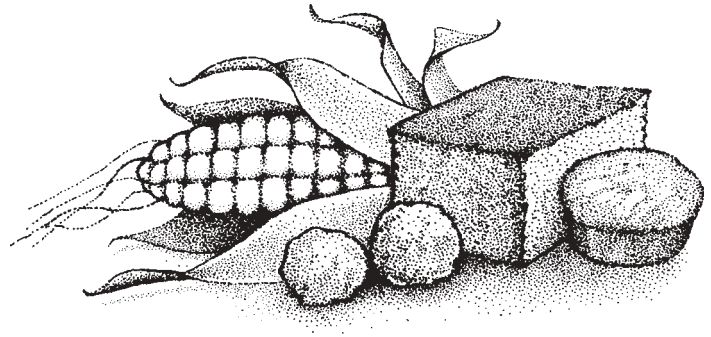
Per serving:
100 calories
2.5 gm fat
3 gm protein
17 gm carbohydrate
310 mg sodium
15 mg cholesterol
1 gm dietary fiber

Food Guide Pyramid

1 serving Bread, Rice, Cereal, and Pasta Group
1 serving Fat, Oils, and Sweets Group

Judging Your Bread

How do you know when you have baked the best cornbread possible? Each time you bake bread from cornmeal, use the score sheet below to judge your bread.



Cornmeal Score Sheet

	Excellent	Good	Needs to Improve
Appearance - outside			
Slightly rounded top			
Even, brown color			
Slightly cracked and medium rough			
Each the same size (for muffins)			
Crumb			
Round, even grain			
Free from tunnels			
Slightly moist			
Flavor and Aroma			
Well-blended ingredients			
Pleasing aroma			
Not bitter or off-flavor			

Keeping a Record of Your Project Work

One of the things you learn in 4-H is to keep a record of your project activities. This helps you to see what you have learned and what things you need to work on in your project. Fill out the record sheets on pages 11 and 12. Ask your leader if you need help.



Cornmeal

Project Record Form

Name _____ School _____ Grade _____

County _____ Birth Date _____

A. Under each section, list all the breads you prepared for this project. This is called the size and scope of the project.

Type of Food	Date Prepared	Number of Servings	What You Remember Most about This Preparation
Cornmeal muffins			
Cornbread			
Cornmeal cakes			
Spoon bread			
Other breads (list)			

B. List any other activities you did for this bread project. List things such as exhibits, demonstrations, and tours.

C. List some skills you learned in the project (for example, to measure, to compare prices in the grocery store, or to read ingredient labels from foods).

D. List the awards and recognition you have received in this project. Tell the level of recognition (for example, county, area, or statewide).

E. How many times did you attend group meetings to work on your project?

F. If you helped others with their food-nutrition project, give the number of people you helped and what you did to help them.

G. Write a project story telling what you did and learned in the project. Include items such as how the project helped your family, who helped you with the project, and why bread is important to good nutrition.

Appreciation is expressed to Martha White Foods, Inc. for support of the development of this literature.