

NAME _____
CLUB _____

4 - H 262



Florida Cooperative Extension Service
Institute of Food and Agricultural Sciences
University of Florida, Gainesville

THE 4-H CLUB PLEDGE

I pledge:

my Head to clearer thinking,
my Heart to greater loyalty,
my Hands to larger service,
my Health to better living,
for my club, my community,
my country, and my world.

THE 4-H CLUB MOTTO

To Make the Best Better

THE 4-H CLUB EMBLEM

The 4-H Club emblem is a four-leaf clover with the letter "H" on each leaf. The four "H's" stand for Head, Heart, Hands, and Health.

THE 4-H CLUB COLORS

GREEN: Nature's most common color is emblematic of springtime, life, and youth.

WHITE: Symbolizes purity and high ideals.



WINNING WAYS WITH YEAST BREADS

NAME _____

CLUB _____

BIRTHDATE _____

YEARS IN PROJECT _____ YEARS IN 4-H _____

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Adapted for use in Florida by Mrs. Beth Walsh, Extension Food Specialist, Miss Lora Kiser, Extension Home Economist, and Miss Ruth Milton, Associate, Extension 4-H Youth Specialist.

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INTRODUCTION

You're a winner when you bake yeast breads and rolls. One of your rewards will be the wonderful aroma that fills the house. You will also win praise because bread tastes so good and goes so well with other foods. Few people will turn down a chance to eat a piece of good home baked bread or a hot buttered roll.

As a senior 4-H Club member you will study the fascinating science of bread leavened by yeast. You have already discovered that flour mixtures are classified as batters and doughs. Batters are beaten during their preparation and are of a consistency to be dropped or poured; whereas, doughs require handling and kneading because they are too thick to be beaten.

The understanding of the science of bread making, combined with art and skill, can help you prepare and serve tastier yeast products. Making yeast breads is an age-old art worth learning. You will be working with the science of living matter - Yeast. How well you control the growth will influence the quality of the bread you make.

Experienced cooks who usually bake good products, or just beginning cooks will get more enjoyment from baking if they know what they are doing and why they are doing it. Baking is fun when you are sure of a success.

This project will help you develop:

- A better understanding of the nutritive value of bread and cereals.
- An understanding of the hows and whys of making yeast breads.
- Skills in preparing yeast products by using good standards of workmanship.
- Ability to judge bread objectively and to recognize desirable standards for yeast bread and rolls.
- An interest in contributing to home and family living through the preparation and serving of food at home.
- Ability to use time and energy efficiently.

What you must do:

1. Study "Winning Ways with Yeast Breads."
2. Complete at least six of the suggested experiments and record your findings.
3. Prepare and score one or more varieties of bread.
4. Prepare and score two or more varieties of rolls.
5. Give two or more demonstrations. Record title, date, and place these were given.
6. Enter the county 4-H Baking Contest.
7. Prepare an exhibit or display for club or county event.

8. Participate in the county 4-H Event Day.
9. Complete the record on pages 32 and 33.

REFERENCES

These will help you carry out this project.

United States Department of Agriculture

Nutrition-Food At Work For You GS-1
Cereals and Pasta in Family Meals G-150
Breads, Cakes, and Pies in Family Meals G-186

National Dairy Council

Animal Feeding Demonstration Instructions
The Great Vitamin Mystery
Choose Your Calories By the Company They Keep
Food Science and How It Began
Search and Research

Other

From:

1. Martha White Kitchens
P. O. Box 58
Nashville, Tennessee 37203
- Quick Bread, Hot Breads
- The Bread Basket
- 'Cotton Pickin' Cornbread
2. National 4-H Service Committee
150 North Wacker Drive
Chicago, Illinois 60606
- Bread Making
- Fleischman's Bake It Easy Yeast Book
- Young Cook's Bake-A-Bread Book
- Young Cook's Bake-A-Bun Book

Contact your local leader or Extension Home Economics Agent for these publications.

Check your high school Home Economics Department for books which will help you.

GET READY TO BAKE

Take time to get ready to bake.

1. Be spotlessly clean - hair combed, dress or apron clean, hands and nails scrubbed clean.
2. Read all directions completely and carefully.
3. Assemble all the necessary ingredients.
4. Assemble all utensils needed. A good plan is to keep mixing spoons, measuring cups, scraper and all other small utensils on a tray, a cookie sheet or set them on a sheet of waxed paper. This makes cleaning up easy.
5. Learn to regulate the oven for best results.
6. Measure accurately. All measurements must be level.

UTENSILS FOR MAKING BREADS & ROLLS



1. A large bowl that holds at least two quarts. A glass bowl or a crockery bowl is especially good. When warmed, it holds the dough at an even temperature. It protects the dough and keeps it cozy and warm like a heavy coat keeps you warm.



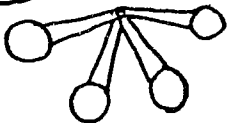
2. A flour sifter. One that holds 5 or 6 cups of flour is most useful. Sifting the flour before measuring assures accurate measurements.



3. A set of measuring cups to measure dry ingredients. A set has cups to measure 1 cup, 1/2 cup, 1/3 cup, 1/4 cup. A measuring cup that has these measures marked on the side may also be used.



4. A measuring cup to measure liquid ingredients. This may be 1-cup, 2-cup or 4-cup size.



5. A set of measuring spoons. A set has spoons to measure 1 tablespoon, 1 teaspoon, 1/2 teaspoon, 1/4 teaspoon.



6. A small saucepan, about 1-pint size. This is useful for scalding milk and for melting shortening.



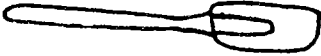
7. A large metal spoon, flour scoop or short broad spatula for scooping up flour.



8. A large wooden or other mixing spoon.



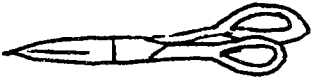
9. A bread board. A pastry cloth or a coarse clean cloth or towel stretched over the board makes handling dough easier.



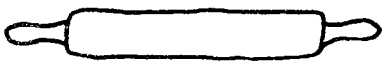
10. A bowl scraper. This may be rubber or plastic.



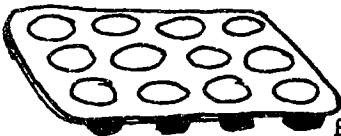
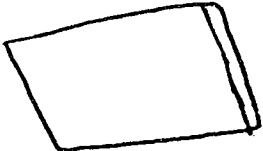
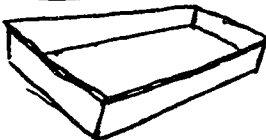
11. Clean dish towels and a clean hand towel.



12. A sharp knife or kitchen scissors to cut dough.



13. Rolling pin.



14. Correct baking pans. The correct size pan is important for high, well-shaped loaves. Measure inside dimensions at top of pans. You can make excellent bread with pans slightly larger than the size called for in the recipe; but for perfect loaves, use the suggested size. For Clover-leaf Rolls, you need muffin pans. Pans with cups 2 1/2 inches across the top are a good size. For Butter-horns and Bowknots, use cookie sheets or large shallow pans. For Cinnamon Rolls, use muffin pans or an 8x8x2-inch pan.

Bread bakers find these extra tools useful, but not required:



1. Pastry brush. Nylon brushes are easy to keep clean and are long wearing.



2. Wire, cooling racks.



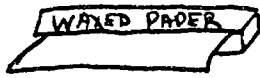
3. Pastry cloth.



4. Stockinette cover for rolling pin.

5. Oven thermometer if the oven does not have a temperature control.





6. Waxed paper.

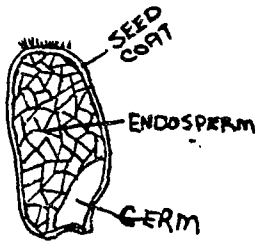


7. Electric mixer.

PART I

THE WHAT AND WHY OF INGREDIENTS

Baked products are made with four essential ingredients - flour, liquid, yeast, and salt. Other ingredients used frequently are sugar, milk, and shortening. A wide variety of other ingredients can be used for specialty breads. To know the secrets of good baking you must know about the different ingredients and the specific function each ingredient has in the baked product.



FLOUR is the main ingredient. Enriched white flour and whole wheat flour make the most nutritious rolls and breads. Most of our flour is milled from wheat. Wheat is classified as hard or soft, based on the texture of its endosperm (inner part of the grain) and as winter or spring wheat.

The clean wheat is milled by a complex process that separates the endosperm from the bran and grain that surround it. The steps of grinding, sifting, and regrinding are repeated until the endosperm reaches the desired fineness and no more flour can be removed from the bran coat.

Instant blending flour, or as sometimes called agglomerated flour, is a free-flowing flour that does not pack. It is prepared by a process in which regular flour is subjected to heat, moisture, and pressure. Flour processed in this manner will mix instantly without lumps in cold liquids, pours easily, and does not pack down or need to be sifted before measuring. An equal measure of such flour can be substituted for regular flour that must be sifted before measuring, however, research has shown that adjustments in volume of flour are needed to assure a good quality baked product. Yeast rolls were not satisfactory although adjustments in flour were made.

The baking quality of flour depends on the amount and quality of the gluten-forming proteins it contains. Flours of high protein content are best for yeast bread, those of medium protein content for general purpose uses and those of low protein content for cakes.

Bread flours milled from blends of hard wheat yield a large quantity of strong gluten. They are used chiefly by commercial bakers for making yeast breads and rolls.

Whole-wheat flours and rye flour can be used alone in making yeast breads, but they are more often combined with white flour. Flour or meal from other grains are good for quick breads which don't need as strong gluten as yeast breads.

Whole-wheat flours are a little less rich in gluten content than patent white flour because of the portion of the total that is bran. One hundred per cent whole-wheat breads are heavy. Lightweight wheat breads are made with about half white flour.

Whole grain breads are made from the entire crushed kernel. The food value is restored in white flour by a process called enrichment. Specified amounts of three of the B vitamins, thiamine, riboflavin and niacin are added along with iron in the enrichment process. Florida laws, beginning January 1, 1975, require that flour and bread must be enriched.

YEAST

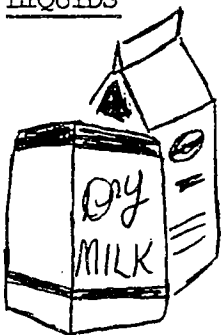
Breads and rolls are leavened by the biological action of yeast, with the exception of salt-rising bread for which bacteria are used. Yeast is a tiny plant that grows and produces carbon dioxide under favorable conditions of temperature, food and moisture. It begins to work at about 50° and is at its best between 78° and 82°.



Yeast is marketed as active dry yeast and compressed yeast cakes. Active dry yeast is a mixture of yeast and filler that has been dried and packaged in granular form. It requires no refrigeration but will retain its activity for longer periods if stored in a refrigerator rather than at room temperature. Packages of active dry yeast are dated to insure best results in its use. Compressed yeast is a moist mixture of yeast and starch. The moisture makes it perishable; it must be refrigerated and used within 2 or 3 weeks. Compressed yeast that crumbles easily is still good, even though drying has turned the edges slightly brown.

Yeast can be grown at home in the form of a starter or liquid yeast. This is done for sourdough products.

LIQUIDS



Milk or water is the liquid most frequently used with yeast doughs. Yeast requires moisture before it can grow. Liquids are also needed to moisten the gluten-forming proteins and starch and dissolve certain ingredients such as salt and sugar.

All types of milk, sweet or sour cream, fruit juices, water, potato water, and coffee may be used as liquids in doughs. Milk adds food value. Rolls made with milk have a velvety crumb and creamy color. They keep well and toast well, too.

SALT

Salt brings out the flavor. It also controls the action of the yeast. Salt strengthens the gluten and helps control the rate of fermentation. With no salt, the dough rises rapidly and the bread will be coarse. Too much salt slows fermentation, and the bread will be too firm and compact. On hot summer days a little extra salt can be used to slow the fermentation and thus improve the quality and flavor of the yeast breads. Salt should not be added to the liquid in which the yeast is softened because it may retard the yeast action too much.



SUGAR



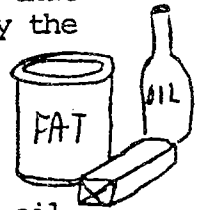
Sugar furnishes food for the yeast. Refrigerator doughs use more sugar and more fat to keep the yeast potent during the storage period. The amount of sugar may affect the texture, grain, tenderness, moistness and browning of the crust. Sugar helps the crust of rolls and bread to brown as they bake.

You may use white or brown sugar, corn syrup, honey, sorghum or molasses. These products add distinctive flavors and tend to stay moist longer than those made with granulated sugar.

FAT

The fat used in doughs is called shortening. The gluten strands that form when fat is used are usually short and tender. This is caused by the fats and oils forming an oily coating on the flour particles, or by forming layers which actually separate different parts of the mixture and keeps them from coming together.

The choice of shortening depends on what is available and your personal taste. You may use lard, hydrogenated shortening, vegetable oil, margarine or butter. If a recipe calls for melted fat, you can substitute an equal amount of oil, however, you will not have a quality product if you use oil in a recipe that calls for solid fat.



EGGS



Eggs often are used in yeast breads for more "richness." Eggs add food value, color and rich flavor. Some specialty bread recipes call for yolks or slightly beaten whites. Yolks give tender, flaky crusts, and whites help to give thick crisp crusts. They also help make a fine crumb.

OTHER INGREDIENTS

Many different flavoring extracts and spices can be added to doughs without any other change in the recipe. Small amounts of chopped nuts, raisins, poppy seeds, and other ingredients also can be added for flavor and increased nutritional value. These items are not added to the dough until it is ready to set for the last rising. Unless gluten flour is substituted for some of the regular flour, the added flavoring ingredients are never used in greater quantity - up to about 1/4 the weight of the flour called for in the recipe. If large amounts of materials are added a special recipe should be used.



WHY BREAD AND CEREALS IN THE DIET?

Food supplies your body with energy and materials needed for growth and body building. Food is made up of many substances necessary for life which are called nutrients. There is no one food that contains all the nutrients we need. To get a balanced diet, a variety of foods is necessary. Use the Basic Four Food Chart as your guide to good nutrition.

All cereal grains are important sources of energy because of their high starch content. The energy value of bread varies from about 240-390 calories per 100 grams (25 grams per slice). The protein in cereal grain is of the incomplete type. That means that certain essential amino acids are low or lacking. Generally, flour is deficient in lysine, threonine, methionine, and tryptophan. By using together products of the bread and cereal group with milk and/or egg proteins, essential amino acids are supplied in quantities large enough to meet the daily need. Thus the importance of serving milk with bread or adding dry milk and eggs. Even though the protein in bread is of the incomplete type, breads supply far more protein than is generally recognized (2-4 grams per slice).

A wide variation exists in the amount of minerals in cereal grains. The amounts are influenced by type of grain, where it is grown, storage conditions and processing methods.

Cereal grains are an important source of B vitamins, thiamine, riboflavin, and niacin. They are deficient in vitamins A, D and ascorbic acid.

The enrichment of flour and cereal products helps to make up for deficiencies in iron, thiamine and niacin.

Much of the flour and many commercial breads contain nutrition information on the labels. The samples below show the nutritive value of one brand of wheat flour and all purpose flour. Nutrition information from one kind of bread is also shown. Read the labels before you buy.

ENRICHED FLOUR

Nutrition Information Per Portion

Portion size	1 cup (4 oz.)
Calories	400
Protein, (grams)	11
Carbohydrate, (grams)	87
Fat, (grams)	1

Percentage of U.S. Recommended Daily Allowances (U.S. RDA)

Protein	15
Vitamin A	*
Vitamin C	*
Thiamine	35
Riboflavin	20
Niacin	20
Calcium	2
Iron	20

* Contains less than 2 percent of the U.S. RDA of these nutrients.

WHOLE WHEAT FLOUR

Nutrition Information

Portion Size: 1 Cup (4 oz.)

Calories	400
Protein, (grams)	16
Carbohydrate, (grams)	80
Fat, (grams)	2
Sodium, (milligrams)	5 (5 mgs/100 gms)

Percentage of U.S. Recommended Daily Allowances (U.S. RDA) per portion:

Protein	25
Vitamin A	*
Vitamin C	*
Thiamine	40
Riboflavin	8
Niacin	25
Calcium	4
Iron	20
Phosphorus	40

* Contains less than 2 percent of the U.S. RDA of these nutrients.

EXAMPLE OF ONE KIND OF BREAD

Nutrition Information

Approx. 2 slices per 2 oz. serving. Contains 10 servings per container.

Per Serving Contribution

Calories	150
Protein	5 grams
Carbohydrates	28 grams
Fat	2 grams

Percent of U.S. Recommended Daily Allowance (U.S. RDA)

Protein	8
Vitamin A	*
Vitamin C	*
Thiamine	15
Riboflavin	8
Niacin	10
Calcium	4
Iron	8

* Less than 2 percent of U.S. RDA

Each day we should include four servings of enriched breads or cereals. You should count as 1 serving of whole grain enriched bread or cereal:

- 1 slice of bread or 1 biscuit
- 1 ounce of ready-to-eat cereal
- or 1/2 to 3/4 cup cooked cereal, cornmeal, grits, macaroni, rice, or spaghetti.

EXPERIMENTS FOR YOU TO DO:

1. Development of gluten.

Prepare three gluten balls to demonstrate difference in gluten content of bread (hard wheat) flour, all-purpose flour and cake (soft wheat) flour. Obtain hard wheat flour from your local bakery if they have it. Otherwise use all purpose and cake flour. Measure two cups of each type of flour. Add enough water to each flour to make a stiff dough. Knead the dough until it is smooth and satiny, about ten minutes. Wash the dough under a stream of cool water, kneading it constantly. Kneading develops the gluten and washing removes the starch. The balls can be washed in bowls of cool water. Change the water often. After thorough washing, the dough will be clear and the water will not show any white, milky starch content. The

ball remaining is pure gluten. Shape the gluten into a smooth ball, place on a greased baking sheet and bake in a hot oven (450°F.) for one hour. The heat and moisture produce steam so the gluten will expand, then become firm.

What difference did you observe in the three balls before baking?

After baking? _____

Why were they different? _____

Wheat flour is classed according to the wheat from which it is milled. Hard wheat flour with a high gluten content is generally used for bread while soft wheat flour, low in gluten, is used for pastry or cake flour. When we stir and knead flour with liquid, the bands, fibers and sheets of the elastic gluten form the supporting tissue of the loaf. These stretch to hold the bubbles of gas produced by yeast. The heat of the oven sets the gluten so that the loaf retains its shape. Without gluten you cannot make satisfactory yeast raised breads.

2. Measure one cup all-purpose flour and one cup of cake flour into separate bowls. Measure water in two separate containers. Slowly mix water into each cup of flour. Which flour absorbed the most water before becoming mushy?

The all-purpose flour contains some hard wheat flour. The framework or structure of a dough is formed when the starch particles become moistened and swell and the gluten develops. Hard wheat with more gluten will only be a sticky ball when soft wheat flour becomes mushy.

SUGGESTED ACTIVITIES FOR YOU TO DO:

1. Visit the local library and read the history of leavened bread.

What was one of the most interesting facts you found?

2. Tour the local bakery to see the behind-the-scenes operations.
3. Visit the grocery store. See what types of breads are available. What kinds of mixes or convenience products are available for preparing yeast bread?

List some items you found.

4. From reliable references study the nutritive value of breads and cereals.

SUGGESTED DEMONSTRATIONS FOR YOU TO DO:

1. The difference in gluten contents of flours.
2. Show and tell the value of bread and cereals in the diet.
3. Show and tell the part each basic ingredient plays in bread preparation.

Each time you give a demonstration record it on the report form in the back of the book.

PART II

BASIC YEAST BREAD

Yeast bread recipes usually follow one of three basic formulas - the straight dough method, the sponge dough method, and the batter or "no-knead" method. The finished products will vary especially in texture.

In the Straight Dough Method all ingredients are combined, the dough is kneaded and set to rise. The Cool-Rise Method is basically the same as the straight dough, except these recipes usually call for additional yeast and salt. The dough is mixed, kneaded and allowed to rest a few minutes before refrigerating. The dough is allowed to rise in the refrigerator for baking within 24 hours.

The yeast is combined with part of the liquid, flour, and sugar for the Sponge Dough Method. This batter is then set aside in a warm place to form a "sponge." The remaining sugar, salt, along with the shortening, and additional flour are added to make a stiff dough.

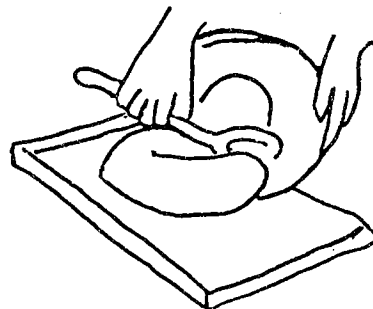
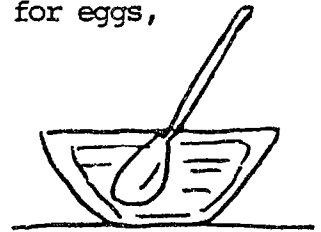
The Batter or "No-Knead" Method eliminates kneading and shaping. Mixing is easier and faster and results in an uneven shape and texture.

General directions for each of these mixing methods are included. The following points are important to remember:

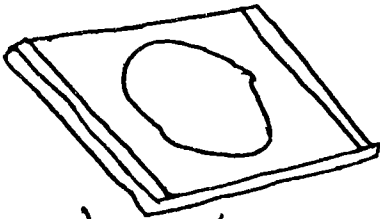
1. Review the pointers listed under "Get Ready to Bake."
2. There are four temperatures you will need to watch carefully.
 - a. The temperature of the water in which the yeast is softened. High temperature will kill the yeast cells. To test, put a drop of water on the inner side of the wrist. The water should feel cool. Your body temperature is 98.6 degrees. The best temperature for yeast is 80° to 85°F.
 - b. The temperature of the liquid and flour mixture when the yeast is added should be about this same temperature.
 - c. The fermenting dough should also be kept at a temperature of between 80° and 85°F.
 - d. The right baking temperature is important for quality bread. Preheat the oven before the bread is put into the oven.

THE STRAIGHT DOUGH METHOD

1. Scald milk.
2. Add sugar, salt, fat, and cool to lukewarm.
3. Sprinkle or crumble yeast in lukewarm water; stir to dissolve.
4. Combine milk mixture with yeast. If recipe calls for eggs, stir them in.
5. Stir in half of the flour called for; beat until smooth.
6. Add remaining flour.
7. Stir until most of the dough comes away from the sides of the bowl.
8. Turn the dough out on a lightly floured board to knead.



TO KNEAD



1. Shape the dough into a ball. Use the least amount of flour possible on the board or cloth. A soft dough makes a better bread. A stiff dough rises slowly and makes bread or rolls coarse in texture with thick cell walls.



2. Push the ball of dough away from you using the heel of your hand.



3. Turn the ball of dough one fourth of the way around with each outward push. Kneading helps to blend the ingredients thoroughly. It stretches the gluten to develop the elastic framework which holds the gas that is formed by the yeast.

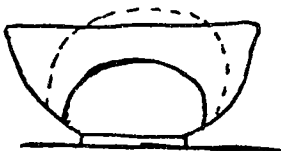


4. Keep your fingers curved above the dough. Let the push come from your shoulders. Use the fingers just to turn the dough over. Avoid pushing the dough so that you tear the surface of the dough. Develop a rhythm as you do the kneading. Knead in a warm place and avoid drafts.

WHEN IS THE BREAD SUFFICIENTLY KNEADED?

1. Generally dough is kneaded 8-10 minutes.
2. The dough should be springy and elastic. The dough should not stick to the cloth or hands. The surface of the dough looks tightly stretched and is smooth and satiny with little blisters just under the surface.
3. Place the dough in a greased bowl. Turn the dough in the bowl to grease the surface of the dough.
4. Cover with a clean cloth or waxed paper and set aside in a warm place (80°) to rise.

WHEN TO PUNCH THE BREAD DOWN



1. Let the dough double in bulk. Do not let the dough get too light before you punch down. If the cell walls are permitted to stretch too far, they will break.



2. To test the dough press two fingers deeply into the dough. If the dents remain in the dough, it is ready to punch down.

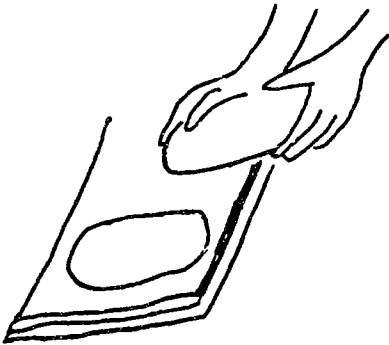


3. Punch the dough down by pushing your fist into the center of the dough. Then pull the edges in and fold them over into the center. Punch the dough, all around, a few times with the hand, then turn it over with the smooth side up. This punching down breaks up the large gas pockets and bubbles and brings in a fresh supply of oxygen for the yeast cells to live upon.

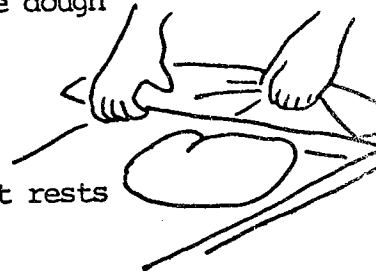
4. If there is time and you want a loaf with fine cell walls, after the dough has been punched down, cover it again and let it rise about 40 minutes.

5. Turn the dough out on a lightly floured board.

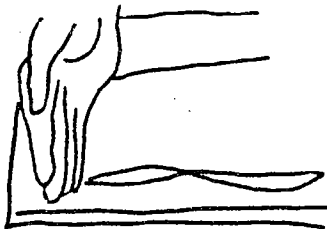
TO SHAPE BREAD



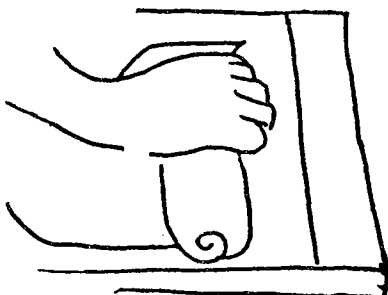
1. It takes practice to do a good job of shaping a loaf of bread. Do not add more flour. Do not put fat on your hands before molding or you will have streaks of fat where the dough seals together.



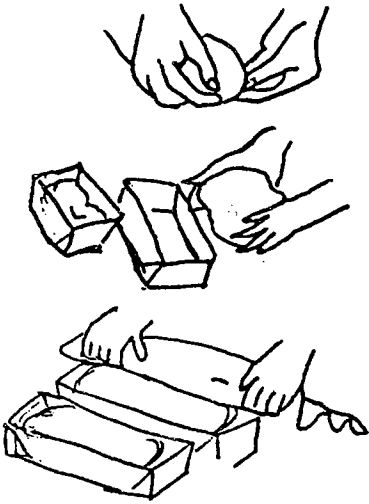
2. Roll it into a ball and cover while it rests 10 minutes.



3. Roll or pound the ball of dough into an oblong shape with palms of your hands. Keep the corners square. Round the gas bubbles out of the dough. Have the dough about 10" long and 6" wide.



4. Fold or roll the dough lengthwise. Press out the air by pushing from the folded side. Seal the open edges of the dough by pressing firmly with the edge of your palm.



5. Using both hands pull the dough slightly lengthwise. Fold the ends under slightly.
6. Place in greased pans. Lightly grease the top of the loaf.
7. Cover with a thin damp cloth and let rise.

BAKING THE LOAF OF BREAD

1. When the dough is almost double in bulk, it is ready for baking. To test the dough for baking, press lightly with your finger. If the dent remains, it is ready to bake. If it does not, the dough needs more time. If the dough collapses around the dent it has gone beyond the point of being just right.
2. Preheat the oven before placing bread in to bake.



WHITE BREAD (2 loaves)

1/2 cup milk	3 tbsp. fat	1 package or cake yeast
2 tsp. salt	1 1/2 cups warm water	5 1/2 cups flour (about)
3 tbsp. sugar		

Scald milk; stir in sugar, salt and fat. Cool to lukewarm. Measure lukewarm water into a large bowl; sprinkle or crumble in yeast; stir to dissolve. Add milk mixture and about 3 cups of flour; beat until smooth. Add enough of the remaining flour to make a soft dough. Turn out on lightly floured board; knead until smooth and elastic (about 8-10 minutes). Form into smooth ball; place in a greased bowl, turning to grease top. Cover and let rise in a warm place until double in bulk. Punch down, let rest 15 minutes; divide dough in half; shape each half into a loaf. Place each into greased loaf pan, cover and let rise until double in bulk (about 1 hour). Bake in 400°F. oven for about 30 minutes.

THE COOL-RISE METHOD (A Variation of the Straight Dough Method)

The Cool-Rise method of mixing bread is similar to the method used for most basic yeast breads. The dough is mixed, kneaded and after a 20-minute "rest" is shaped and put in the refrigerator to rise.

The shaped rolls and bread rise in the refrigerator and can be baked after 2-24 hours and up to 48 hours. However, the volume decreases slightly after 24 hours.

COOL-RISE LOAF BREAD (2 loaves)

5 1/2 to 6 1/2 cups sifted flour	2 tablespoons sugar
2 packages or cakes of yeast	1 tablespoon salt
1/2 cup warm water	3 tablespoons margarine or shortening
1 3/4 cups warm milk	Cooking Oil

Measure flour. Sprinkle or crumble yeast into water in large warm bowl. Stir until dissolved. Add milk, sugar, salt, and margarine. Add 2 cups flour and beat with rotary beater. Then add 1 cup and beat vigorously for 150 strokes. Gradually add remaining flour - enough to make soft dough which leaves sides of bowl. Turn out onto floured board. Shape dough into ball and knead 5 to 10 minutes - until smooth and springy. Cover with plastic wrap and towel. Let rest 20 minutes. Punch dough down, divide in half and shape. Place loaves, seam side down, in center of greased pans. Brush with oil. Cover loosely with waxed paper or plastic wrap. Refrigerate 2 to 24 hours. Remove. Uncover. Let stand at room temperature 10 minutes. Prick any gas bubbles with oiled toothpick. Bake at 400°F. 30 to 40 minutes. Remove from pans immediately. Brush with margarine. Cool.

THE SPONGE DOUGH METHOD

In this method the yeast is combined with a portion of the liquid, flour, and sugar to make a batter. This batter is then covered and set aside in a warm (80°) place until it becomes bubbly or a sponge. The time can vary from a few hours to overnight without damaging the bread. To make a dough, more sugar, salt and the shortening is added to the sponge along with enough flour to make a stiff dough. Then the method is handled in the same manner as in the straight dough method.

WHITE BREAD (Sponge Method - 2 loaves)

1 package yeast (cake or dry)	1 cup milk
1 cup warm water	2 tablespoons sugar
1 teaspoon sugar	1 tablespoon shortening
2 cups flour	2 teaspoons salt
	4 cups flour (about)

In large mixing bowl, dissolve yeast in warm water. Stir in 1 teaspoon sugar and 2 cups flour. Beat until smooth. Cover with clean cloth. Let rise in warm place until bubbly, about 1 hour. While sponge is rising, scald milk, add 2 tablespoons sugar, shortening, and salt. Stir until sugar dissolves and shortening melts. Cool to lukewarm. Stir down sponge and beat in milk mixture. Stir in enough flour to make a moderately stiff dough. Turn out onto lightly floured board. Knead and continue as the straight dough method.

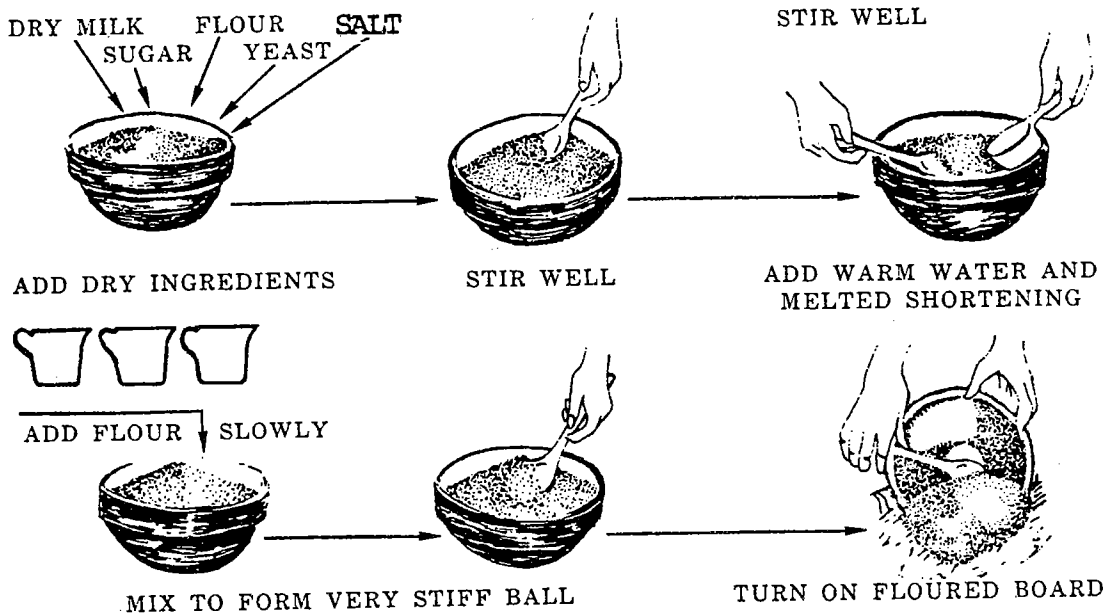
RAPID MIX YEAST BREAD

4 tablespoons shortening	5 1/2 to 6 cups flour
2 1/2 cups lukewarm water	1 tablespoon salt
4 tablespoons dry milk	2 packages active dry yeast
2 tablespoons sugar	

1. Melt shortening. Add to lukewarm water.
2. Combine dry milk, sugar, 3 cups flour, salt and yeast. Mix dry ingredients. Beat well.
3. Add warm water and melted fat to dry ingredients. Beat well.
4. Add about 3 cups of flour gradually. Mix to form a very stiff ball. Turn on floured board. Knead until smooth - about 1 minute.
5. Place in greased bowl. Grease top. Cover. Let rise 1 hour or until double in bulk.

6. Punch down. Turn on board and let rest 15 minutes. Divide in half and shape two loaves. Place loaves in greased bread pans. If one pound coffee cans are used, divide dough in thirds and shape into three round loaves. Place loaves in greased coffee cans.
7. Cover. Let rise about one hour or until double in bulk.
8. Bake at 400°F. about 30 minutes.
9. Grease tops, remove from pans and cool on rack.

MIXING BREAD DOUGH



SOURDOUGH STARTER

2 cups flour
2 cups warm water

1 package dry yeast
or 1 yeast cake

Mix well. Place in a warm place or closed cupboard overnight. Starter should be left at room temperature until the mixture bubbles. When starter is used in bread preparation, save 1/2 cup for future use. Place this starter in a jar with a tight cover and store in the refrigerator or a cool place.

Feed the starter with 1 cup flour and 1 cup water for every cup of mixture you take out. If the temperature goes above 85°F., store the starter in the refrigerator. If the starter is not used at least every 2 or 3 days, it should be stored in the refrigerator. If the starter is not used in 1 to 2 weeks, discard half of it and add 1 cup flour and 1 cup of warm water.

For best results, use glass or pottery containers. Never use a metal container or leave a metal spoon in the starter. A good starter contains only flour, water, and yeast. It has a clean sour milk odor. The liquid will separate from the batter when it stands several days, but this does not matter. If replenished every few days with flour and more water, the starter keeps fresh. If starter is not to be used for several weeks, freeze or dry it to keep it from spoiling.

SOURDOUGH BREAD

2 cups starter	1 teaspoon salt
4 cups sifted flour	2 tablespoons fat
2 tablespoons sugar	

Sift dry ingredients in a bowl, making a well in the center. Add fat to the sponge and mix well. Pour into the well of flour. Add enough flour to make a soft dough. Knead on floured bread board for 10 to 15 minutes.

The dough can now be shaped and placed in the pans, or it can be allowed another rising period before shaping. The extra rising period gives a more even texture.

For the extra rising period, transfer the dough to a greased bowl, brush with oil or melted shortening, cover and let rise until light. Divide into 3 equal portions, shape into loaves, place in greased pans and allow to double in bulk in a warm place. Bake in 350°F. oven for 45 to 50 minutes.

THE BATTER METHOD

This is the fastest, quickest, and easiest method of making yeast breads, however, they do not have the same texture as breads made by the straight dough method. The texture is coarser and air cells larger. In this method, breads are made from a batter - that is, a yeast mixture, too soft to be kneaded. The mixing is very similar to the straight dough method.

Steps in mixing batter breads:

- a. Scald milk and cool to lukewarm.
- b. Add salt, sugar, shortening, and stir to dissolve.
- c. Sprinkle or crumble yeast in lukewarm water, stir to dissolve. To check temperature of water and milk, drop a few drops on the inside of your wrist. It should feel comfortably warm, not hot.
- d. Combine milk and yeast mixtures.
- e. Add flour to the liquids. Beat by hand or with a mixer until batter looks smooth and shiny and tends to leave the sides of the bowl and follow the spoon or beaters.
- f. Cover the bowl of batter, and set aside in a warm place (80 - 85°F), free from drafts, to rise.

