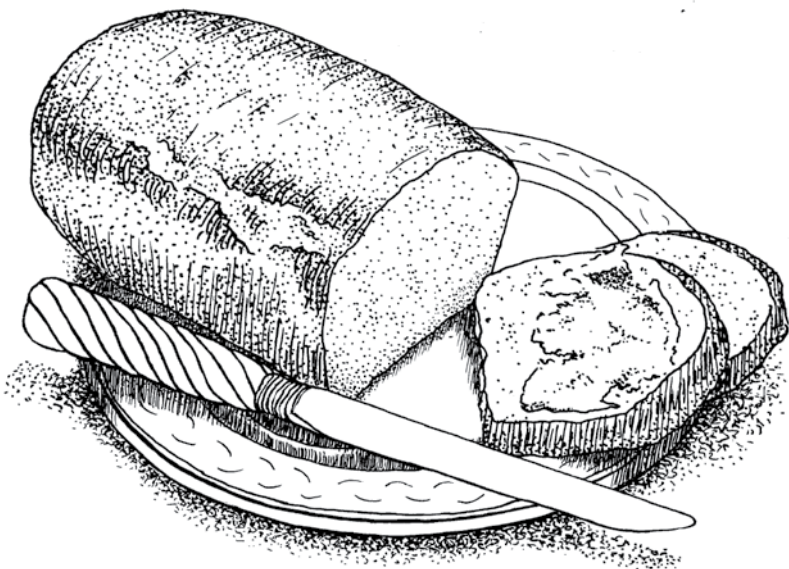


Making Yeast Bread

4-H Bread Project Advanced Unit



Throughout the years, energetic home bakers have learned many ways to create delightful and fancy masterpieces using yeast dough. The aroma and flavor of freshly baked bread remains as appealing today as it was in days gone by.

Things to Learn

- The contribution of each ingredient to the final yeast bread product.
- The skills needed in combining and manipulating the dough.
- How to make a variety of yeast breads and rolls.
- Knowledge in the scientific principles of yeast bread making.
- The nutritional value of breads and cereals as one of the four food groups.
- How to purchase yeast breads.
- How to purchase ingredients for home preparation of yeast breads.
- How to compare costs of purchased and prepared yeast breads.

Project Requirements

Complete the following activities:

1. Yeast bread recipes
 - Make at least six of the yeast bread recipes using each of the three methods outlined in this guide.
 - Score each of the six breads and record the score on the record form provided in the back of this guide.
2. Experiments
 - Conduct the three experiments as outlined in this guide and record your results on the record sheet.
3. Prepare cost analysis of homemade yeast bread versus comparable yeast bread when purchased at a grocery store.
4. Exhibits and demonstrations
 - Prepare and exhibit a sample of bread at a local or county event or demonstrate your yeast bread skills before a group.

Awards

Ask your 4-H leader or Extension agent about the bread awards program in your county. It is possible for members to earn medals, cash, trips, and scholarships in the 4-H Bread Awards Program.

Purpose of Ingredients

Flour—Flour, the main ingredient for bread-making, helps to determine quality of the finished product. Flour made from hard wheat is higher in protein and better for making bread than flour from soft wheat.

All-purpose flours are usually blends of hard and soft wheat in proportions to give satisfactory results for most home baking needs. These flours differ in percentages of



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soft and hard wheat they contain. In areas where hard wheat is grown, all-purpose flour may have a higher percentage of hard wheat, while in areas where soft wheat is grown, all-purpose flour generally contains more soft wheat.

Since the kinds of flour used in making all-purpose flour vary, the content and quality of the protein also vary. Flour with a high-protein content absorbs more liquid than one containing a smaller amount. For this reason, and because the moisture content of flours varies, most yeast bread recipes call for an approximate measure of flour rather than an exact amount.

An important step in making yeast bread is combining the flour and liquid in just the correct proportion to yield a good dough. Too much liquid in proportion to flour weakens the gluten, and too little makes the gluten strong so that it does not stretch sufficiently. Gluten is formed by combining liquid with flour. Proteins in flour react with liquid to form gluten. Beating and kneading dough helps to develop gluten, which is important for increasing volume in bread.

Liquid—Liquid used in making yeast bread may be milk, water, a combination of milk and water, or potato water. Bread made with water has a crusty top, while bread made with milk has a softer and browner crust. Potato water produces a coarser bread and a slightly larger loaf.

Fat—Fat may be butter, margarine, lard, or vegetable shortening. Fat helps to give bread a soft, tender crumb. Generally, solid fats make a better crumb than do oils.

Yeast—Yeast is a living plant that feeds on sugar and produces carbon dioxide, causing the bread to rise. Yeast is available in dry form (which needs no refrigeration) or in compressed yeast cakes (which must be refrigerated).

Sugar—Sugar furnishes food for the yeast. If sugar is not added, the yeast can obtain food by breaking down the carbohydrate in the flour to provide sugar, but this takes longer. The addition of sugar speeds up the rising action since it is an easily available food for the yeast. Sugar also adds flavor and tenderness, and helps to brown the crust of the bread.

Salt—Salt adds flavor and helps to control the action of the yeast.

Eggs—Eggs are not a basic ingredient of bread but often are used to add color, flavor, and food value.

The Nutritive Value of Bread

Bread is an inexpensive source of energy since it is high in carbohydrates, but it is also a good source of protein, B vitamins, and minerals. Whole wheat or enriched bread has more vitamins and minerals than unenriched white bread. Always look for the term “enriched” on the wrapper of white bread.

Products sold as enriched in interstate commerce must meet the standard of identity established by the US Food and Drug Administration. This means specified amounts of thiamin, riboflavin, niacin, and iron are added to the flour during the milling process to compensate for partial loss of these nutrients when bran is removed. Enrichment raises the levels of iron, niacin, and thiamin approximately to that of whole wheat flour. Riboflavin is raised until it exceeds the amount found in whole wheat flour. Calcium and vitamin D are optional nutrients but also may be added if desired.

Mixing Methods

In making yeast bread, there are several ways ingredients may be combined to achieve the desired product. Usually it is better to add flour to liquid since most recipes call for a measured amount of liquid and an approximate amount of flour. Flour is added to liquid until the right consistency is reached.

Each of the ways for mixing includes steps for preserving the action of yeast. When added directly to liquids higher in temperature than lukewarm (105–115 °F), yeast plants may be killed. Yeast must be alive to grow and produce the carbon dioxide gas necessary for bread dough to rise. Therefore, compressed yeast cakes are generally dissolved in lukewarm liquids, while yeast granules may either be dissolved in liquid or distributed through dry ingredients before adding hot liquid. The distribution among dry ingredients prevents the yeast from getting too hot.

The most common methods of mixing are conventional, batter, and sponge.

conventional—All ingredients are added before the dough is kneaded and allowed to rise. Basic yeast bread is an example of this method.

batter—Ingredients are beaten as they are added. Beating helps to develop gluten and eliminates the need for kneading. Bran rolls are an example of batter bread.

sponge—Dissolved yeast, part of the flour, liquid, and sometimes sugar are combined to form a soft batter (sponge). The sponge is allowed to rise until it is full of bubbles (3–12 hours), then remaining ingredients are added to form the dough. Usually dough is kneaded and allowed to rise as in the conventional method. Sourdough bread illustrates the sponge method.

Terms

Batter—A pourable mixture of flour and liquid; other ingredients may be added.

Carbon dioxide—A gas (leavening substance) that causes bread to rise.

Conventional—In this publication, conventional refers to the most common method used in making yeast bread.

Cool—Let stand at room temperature until cool (no longer warm).

Gluten—Gluten develops when batter or dough is beaten or kneaded. Gluten is capable of retaining gas and by so doing, makes a light product. Gluten forms the framework of the finished loaf of bread.

Knead—Manipulating dough to form gluten. To knead, shape dough into a ball. Curve fingers over the dough. Pull dough up and over, then press down and forward with heel of hand. Give dough a quarter turn and repeat, give dough another quarter of turn and repeat. Continue in this way (kneading) until dough is light, elastic, and nonsticky.

Lukewarm—Temperature between 105 and 115 °F; 41–64 °C.

Dough—A mixture of flour and liquid thick enough to knead, roll, or drop in chunks from a spoon. Other ingredients may be added.

Leavening—An ingredient in baked products to make them light. For quick breads, the leavening agents are generally baking powder or baking soda plus an acid. In each case, carbon dioxide is formed. For yeast breads, active yeast feed on some form of sugar and produce carbon dioxide.

Sponge (dough)—A soft batter that is allowed to rest until it is full of bubbles, about 3–12 hours.

Yeast (active, dry)—Dry yeast granules are low in moisture content and may be kept for some time without refrigeration. Check the expiration date on the package before purchasing, and use it by the date indicated.

Yeast (compressed)—A mass of yeast combined with cornstarch to form a moist cake; sometimes called cake of yeast. Compressed yeast keeps about 2 weeks in the refrigerator or for several months in a freezer.

Bread-Baking Hints

Dough, Kneading

Begin with a small amount of flour on a board or kneading surface and add flour in small amounts as necessary to prevent sticking. Too much flour kneaded into the dough produces a dry, heavy loaf of bread.

Dough, Shaping Loaf

For easy shaping, roll dough into an oblong, almost rectangular shape about ¼ to ½ inch thick. Begin at one end and roll tightly as for a jelly roll. Place lengthwise in a greased loaf pan, pushing dough against side and bottom of pan. Tuck ends under. Brush top lightly with butter, margarine, or oil. Cover and allow to rise.

Dough, Surface Drying

To prevent the dough surface from drying, place the dough in a greased bowl, turn once, cover, and let rise. Usually surface drying is not a problem if the container is covered tightly with a damp towel or plastic wrap.

Milk, Dry or Liquid

Either dry or liquid milk may be used in most recipes. To use liquid milk when the recipe specifies dry milk, omit the dry milk and use liquid milk in place of the water or other liquid in the recipe. To use dry milk when the recipe specifies liquid milk, replace liquid milk with an equal amount of water and add ⅓ cup dry milk for each cup of liquid.

Oven Rising

Bread dough rises best in a warm, humid area. Such an area is easily devised by placing a pan of very hot water on the floor of an unheated oven. Put bread pans on the rack above the water and close the oven door. Allow the bread to rise until it doubles in size. Carefully remove the bread; also remove the pan of water. Preheat the oven to the desired temperature and return the bread to the oven and bake.

Bread Pans, Greased

Grease the bottom of pans and half an inch up on the sides. The loaf will usually rise higher if the sides of pans are not greased any higher than a half-inch.

Texture

To develop small cells (holes) in bread, knead thoroughly and press air out of the dough before shaping. A rolling pin or similar tool is useful for this purpose. However, much air may be patted out by hand.

Yeast Starter

If replenished once every 2 or 3 weeks with flour and more water, the starter stays fresh. A sourdough bread recipe has a built-in starter. Each time bread is made, 1¼ cup of the mixture is removed and added to an old starter. If the starter is to be held for several weeks, freeze or dry it to prevent spoilage. Allow frozen starter to thaw until it reaches room temperature before using it. Products from thawed frozen starter may be lower in volume than if made with a new starter.

Basic Yeast Bread

Yield: 2 loaves

2 packages or cakes of yeast
½ cup lukewarm water*
2 cups hot water
3 tablespoons sugar
1 tablespoon salt**
¼ cup shortening
⅓ cup nonfat dry milk
5½ to 7 cups flour (about)

***Lukewarm water is about 100–105 °F. If a thermometer is not available, test water by dropping a few drops on wrist. Water should feel barely warm.**

****If self-rising flour is used, omit salt from this recipe.**

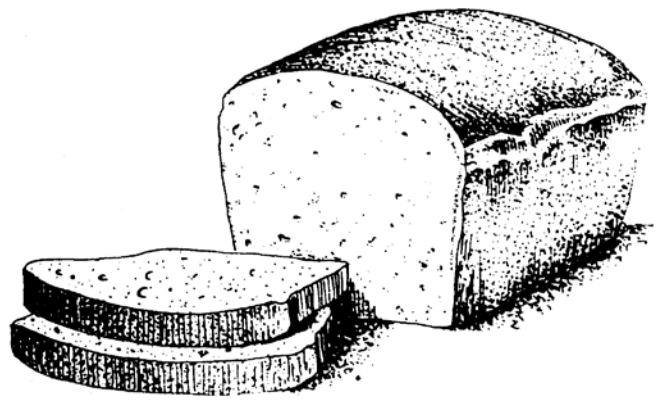
Dissolve yeast in the ½ cup lukewarm water. In a separate bowl, pour 2 cups hot water over sugar, salt, and shortening.

Combine nonfat dry milk with 2½ cups of the flour and stir into hot water mixture, beating vigorously. Add yeast water and enough of remaining flour to form a soft dough. When mixture begins to pull away from sides of pan, turn out on lightly floured surface and knead until smooth and elastic (about 200 strokes). Form dough into a ball; let rest on kneading surface or in a greased bowl. Cover with wax paper or a damp cloth.

Let dough rise until it doubles in size, about 50–60 minutes. Punch down and divide into two portions. Shape each portion into a loaf. To shape, place dough on lightly floured board and roll out to an 8x8-inch square. Fold one side to middle of square and then fold opposite side to middle. Pinch edges together to make a seam. Pinch together edges at each end of dough. Place in greased 8½x4½x2-inch bread pan. Turn seam-side down and tuck ends slightly under.

Brush top surface of dough with oil or melted butter. Cover loosely.***

Let dough rise in a warm, draft-free place until double in size. Bake at 400 °F about 30–35 minutes. If top crust browns too quickly, cover loosely with a piece of aluminum foil or reduce oven temperature to



375 °F during the last 15 minutes of baking. Remove from pans immediately, cool, and store.

*****To bake the bread at a later time, following this step, refrigerate. For best results, bake within 2–3 days.**

Variations

- Replace 2½ cups of white flour with 2 ½ cups of whole wheat, rye, or other desired flour.
- For bread-type rolls, shape and bake. These rolls are less sweet than standard roll dough.
- To make pull-apart loaves, after dividing dough in half, roll to an 8x12-inch rectangle. Brush with melted butter or margarine; cut into four equal 12-inch strips. Stack strips and cut into four equal stacks. Stand each stack on edge in a greased loaf pan with each stack following in order to form one row in the pan. Brush with melted butter or oil. Cover and let rise until double in size. Bake at 400 °F about 30 minutes.

Basic Sweet Dough Rolls

Yield: 30 to 40 rolls

2 packages yeast, dry granular or compressed
½ cup sugar
1½ teaspoon salt
1¾ cup water
¼ cup shortening
⅓ cup nonfat dry milk
5½ to 6 cups all-purpose flour
2 eggs

Cream sugar and shortening; add eggs and salt. Heat water to lukewarm. Sprinkle yeast into lukewarm water and stir to dissolve. Gradually add yeast water to sugar-shortening mixture. Add nonfat dry milk and two cups of flour. Beat mixture vigorously. Stir additional flour into batter until mixture pulls away from sides of pan. Pile dough on a lightly floured surface

Some Common Faults in Yeast Breads

Characteristics	Defect	Cause
OUTSIDE APPEARANCE		
Shape	Uneven shape	Improper shaping of loaf. Oven too cool at first. Uneven heat. Insufficient or too much rising time. Too much dough in pan.
Crust	Cracked	Crusting of dough during rising. Too rapid cooking.
	Bulges and cracks	Oven too hot at first. Uneven heat. Too stiff dough.
	Tough	Too short rising time. Not enough shortening. Overbaking.
	Thick	Crusting during rising. Too low oven temperature.
	Too pale	Too cool an oven. Not enough sugar. Too much salt. Temperature of dough during mixing too warm. Rising too high.
	Too dark	Too much sugar. Insufficient rising time. Oven temperature too high.
	Uneven color	Uneven heat in oven. Incorrect placement in oven.
Volume	Heavy or soggy	Too much liquid. Insufficient rising. Insufficient baking. Insufficient kneading.
	Too small	Insufficient rising. Not enough yeast. Too much salt. Too hot an oven.
	Too large	Rising time too long. Too much yeast. Not enough salt. Oven temperature too low.
INTERNAL APPEARANCE		
Texture	Crumbly	Too much flour. Wheat flour substitutes. Overlight when put in oven.
Grain	Coarse	Dough too soft. Rising time too long. Insufficient kneading. Too cool an oven. Temperature too high during mixing and rising.
Color	Dark	Kind of liquid used. Kind of flour used. Too much yeast. Temperature too high during mixing and rising.
	Off color	Too much yeast. Oven temperature too low.
	Streaks	Uneven mixing. Uneven kneading. Too much flour during kneading and shaping. Starting with oven too hot.
Flavor	Sour or poor Mustiness	Old yeast. Temperature too high during mixing and rising. Bacteria on unclean utensils. Old ingredients. Baked too slowly. Incomplete baking. Wrapped while warm. Mold that thrive in warm, moist air.

Scorecard for Judging Yeast Bread

	Possible score 100	Excellent	Good	Fair	Needs Improvement
OUTSIDE APPEARANCE					
Shape—Characteristic for product. Slightly rounded top.	15				
Crust—Evenly brown, thin, tender, smooth crust.	15				
Volume—Light in weight in proportion to size. Almost double in volume of uncooked product before rising.	20				
INSIDE APPEARANCE					
Texture—Elastic, soft, and fine; not doughy. Grain small, fairly uniform; thin-walled cells with no large holes. Batter breads may have slightly less uniform cells.	20				
Color—Uniform and characteristic of ingredients used (kinds of flour, liquid, sweetening, amount of eggs).	10				
FLAVOR					
Loaf bread and rolls—Sweet, nutty flavor.					
Variety breads and rolls—Pleasing, well blended.					
Even distribution of such added ingredients as fruit and nuts.	20				

and knead (about 200 strokes). Form into a ball, cover with a towel, and let rest 40–50 minutes. Punch down dough with fist, reshape into a ball, and divide into two portions. Shape rolls, place on a greased pan or baking sheet, and brush with melted butter or oil. Cover; let rise until double in size. Bake at 375 °F until golden brown, about 20–25 minutes. Shaped rolls may also be refrigerated and baked later.

Ideas for Shaping Rolls

Cloverleaf Rolls: Form pieces of dough into small balls. Place 3 balls in each cup of a muffin pan; brush with melted butter or margarine.

Crescent rolls: Roll dough into a circle, about 10 inches in diameter. Cut circle into pie-sized wedges (triangles). Beginning with broad edge, roll each wedge toward point of triangle. At this point, pinch dough together. Place roll on greased baking sheet, point side down; brush with melted butter.

Bow Knot: Cut strips of dough 5½ inches long and make one loose tie. Brush with melted fat.

Plain rolls: Form dough into balls about 1 inch in diameter. Place close together in greased 9-inch pan; brush with melted butter.

Pecan Rolls

Yield: 4 pans of rolls—12 rolls per pan

Prepare recipe for Basic Sweet Dough rolls. Allow dough to rise, and punch down. Divide dough into four equal portions; roll each portion into a rectangle. Spread each with ¼ of Pecan Filling (below). Roll in 14-inch rolls, as a jelly roll. Press long edge to secure dough, leaving ends open. With a sharp knife, cut 12 rounds. Place each round, cut side down, in a greased 9-inch baking pan with 9 rounds in outer ring and 3 rounds in center. Brush with melted fat.

Set in warm, draft-free place and let rise until double in size. Bake at 375 °F until golden brown. Drizzle with Confectioners Sugar Frosting (recipe below).

Pecan Filling: Melt 1 cup butter or margarine in saucepan. Add 1½ cup brown sugar, packed. Stir in 1 tablespoon syrup. When well blended, remove from heat and add 1 cup finely chopped pecans.

Confectioners Sugar Frosting

Confectioners sugar
Milk

Add milk to sugar until of desired spreading consistency. Drizzle over warm bread.

Apricot Rolls

Yield: Two 16-inch rolls

One-half Basic Sweet Dough Roll recipe

Filling: 1½ cup apricot preserves
¾ cup finely chopped pecans
1¾ teaspoon cinnamon

Divide dough in half. Roll each half into an 8x11-inch rectangle. Spread with well-blended apricot filling. Roll as for jelly roll. Secure ends and brush with melted butter. Bake in 375 °F preheated oven for 20–25 minutes.

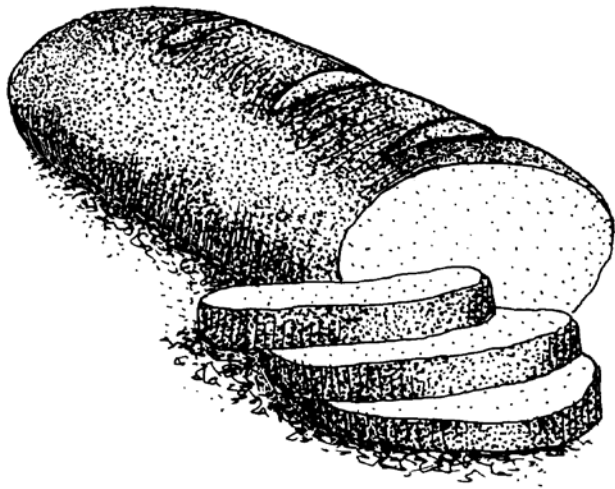
Whole Wheat Bread

Yield: 2 loaves

6-8 cups 100% whole wheat flour, unsifted
1 tablespoon salt*
2 packages yeast
½ cup nonfat dry milk
¼ cup brown sugar, honey, or molasses
¼ cup butter or margarine, softened
2½ cups water

Combine 2 to 2½ cups of flour, salt, yeast, and dry milk in a large mixing bowl. Stir to blend. In a saucepan, heat the sugar, shortening, and water until very warm. Pour into dry ingredients and mix for 2 minutes (medium speed with an electric mixer, or beat thoroughly by hand). Stir in enough of the remaining flour to make a soft dough. Transfer dough to a lightly floured surface and knead until smooth and elastic. Shape into a ball and place in a greased bowl. Cover loosely with a towel and let rise until double. Punch down dough and shape into two loaves. Place in greased bread pans 8½x4½x2¾ inches. Brush with melted butter or oil. Cover with a towel and let rise until double in size in a draft-free place. Bake at 375 °F until done, about 30 minutes. Remove from pans and cool.

*Usually ¼ teaspoon of salt to each cup of flour is adequate.



French Bread

5½ to 7 cups all-purpose flour
 1 package yeast
 1½ teaspoon sugar
 2 teaspoons salt
 ½ cup nonfat dry milk
 2¼ cups hot water*
 ½ cup cornmeal
 ½ teaspoon salt
 ½ cup water

Combine 2½ to 3 cups of flour with yeast, sugar, salt, and nonfat dry milk. Stir to blend. Continue stirring while adding hot water. Beat vigorously. Add more flour as needed to form a soft dough. When mixture begins to pull away from sides of pan, enough flour has been added. Transfer dough to a lightly floured surface and knead until smooth and elastic. Form dough into a ball and place in a greased bowl. Cover with a towel. Allow dough to rise until double in volume; punch down and divide into three equal portions.**

Shape each into a long, tapered loaf, about 2x14 inches. Sprinkle cornmeal over a cookie sheet. Arrange loaves on cookie sheet, leaving space between loaves for rising. Using a sharp knife, make diagonal slashes one-half inch deep at intervals across top of each loaf. Dissolve the ½ teaspoon of salt in the ½ cup of water. Brush loaves of bread lightly with salt and water mixture. Allow to rise until double in volume. Preheat oven to 400 °F. Place a large, shallow pan on the oven floor. Fill with boiling water. Bake loaves on shelf directly over the hot water for 15 minutes. Again brush lightly with salt and water mixture. Reduce heat and continue baking for 15 minutes longer. Brush loaves with salt and water mixture and continue baking until golden brown, about 15 minutes. Remove bread from oven and transfer to a rack for cooling.

*Hot when touched by hand usually from hot water faucet.

**For a firmer textured bread, allow dough to rise a second time, until double in volume, before shaping.

Variation

If desired, add 1 cup of sourdough starter before remaining flour is combined to form a soft dough. This will give bread a slightly acid or sour taste more characteristic of bread made by French bread bakers.

Sourdough Starter

2¾ cups all-purpose flour
 2½ cups lukewarm water
 1 package yeast

Combine ingredients in a large glass mixing bowl; beat until mixture is well blended. Cover with a clean cloth and let stand in a warm, draft-free place for about 20 hours. Check for bubbles on the surface of batter. If there are none, allow mixture to stand 3–4 hours longer. If there are still no signs of fermentation, discard and prepare again. To replenish starter: Combine 1¼ cup flour and 1¼ cup lukewarm water and add to remaining starter. Beat until smooth, cover with a clean cloth, and let stand in warm draft-free place for 8–10 hours. Refrigerate. Replenish starter about every 3 weeks.

Sourdough Bread

Yield: 3 round loaves

¼ cup sourdough starter
 6–7 cups all-purpose flour
 2½ cups lukewarm water
 3 tablespoons sugar
 1 teaspoon salt
 ½ teaspoon baking soda
 4 tablespoons melted butter or oil

In large glass mixing bowl combine starter, 2¾ cups flour, and 2½ cups lukewarm water. Stir vigorously to mix. Cover; let stand in a warm, draft-free place for 9–10 hours. Then remove ½ cup of the mixture; refrigerate in a closed glass jar for a new starter or add to old starter. Combine 3 cups of the flour, sugar, salt, and soda; add to remaining flour and starter mixture. Stir melted fat into batter; continue stirring while adding more flour as needed until dough begins to pull away from sides of bowl. Avoid using too much flour. Dough should be easy to handle, but not stiff. Pile dough on a lightly floured surface and knead until elastic and smooth (about 200 strokes). Form dough into a ball and place in a greased bowl, turning once; cover and let rise in a warm, draft-free place until double in volume.

Punch down dough and divide into three equal portions. Shape each piece into a ball; place on greased baking sheet, forming a triangle. With a sharp knife, make criss-cross slashes in top of each loaf, if desired. Cover and let rise in a warm, draft-free place. Bake at 400 °F for the first 15 minutes, then reduce heat to 375 °F and continue baking about 20 minutes. Remove from pans and cool.

Stollen

Yield 3 loaves

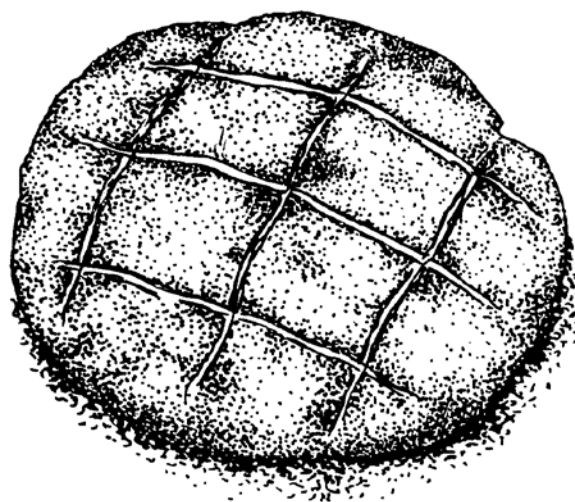
½ cup lukewarm water
2 packages yeast
¾ cup milk
½ cup sugar
1¼ teaspoon salt
⅔ cup butter or margarine
3 eggs
1 tablespoon grated lemon rind
5½ to 6½ cups flour
⅔ cup blanched almonds, chopped
¾ cup mixed candied fruits
⅔ cup golden seedless raisins

Confectioners Sugar Frosting (see recipe on page 7)

Decorations

Whole blanched almonds
Candied cherries, halves or whole
Pieces of colorful candied fruits

Dissolve yeast in lukewarm water. Pour milk over sugar, salt, and butter, and stir in 2½ cups of flour. Add water-yeast mixture and eggs. Beat well. Continue beating while adding enough of remaining flour to make a soft dough. Transfer dough to a lightly floured surface and knead until smooth and elastic. Place in a greased bowl, turning to grease top. Cover and let rise in a draft-free place until double in bulk. Combine nut meats, fruits, and raisins. Punch down dough, return to a lightly floured surface, and quickly knead in fruit and nut mixture. Divide dough into three equal pieces. Roll each piece into a 12x8 inch oval. Fold in half lengthwise to make a crescent. Place on a greased baking sheet. Cover and let rise until double in size. Bake at 375 °F for 25–30 minutes or until golden brown. Cool on rack. Drizzle Confectioners Sugar Frosting over bread and decorate with almonds and candied fruit.



Sally Lunn

1½ cup lukewarm water
1 package yeast
⅓ cup nonfat dry milk
⅓ cup sugar
2 teaspoons salt
5-6 cups all-purpose flour
½ cup butter or margarine, softened
3 eggs

In a large mixing bowl, dissolve yeast in the lukewarm water and set aside. Combine dry milk, sugar, salt, and 2⅓ to 3 cups of flour, and stir into yeast mixture. Add softened margarine and beaten eggs. Continue stirring while adding enough of the remaining flour to form a soft dough. Place dough on a lightly floured surface and knead until smooth and elastic. Cover dough with a towel and let rise until double. Punch down dough, shape into two loaves, and place in greased 8½x4½-inch loaf pan with sealed edge down. Brush tops with melted butter or oil. Cover; let rise until double in volume. Bake until well done at 375 °F. Remove from pans and cool.

Variation

Shape dough into a circle by gathering dough into an evenly round ball. Then place ball on lightly floured surface and flatten to about 9 inches in diameter. Punch hole in center and gradually enlarge so that dough may be placed in a greased 10-inch tube cake pan. Cover and let rise in a draft-free place until double. Bake at 400 °F until done, about 30 minutes.

Cereal Bran Rolls

1 cup bran-type cereal
½ cup butter or margarine
¼ cup brown sugar*
¾ cup boiling water
1 egg, beaten
1 package yeast, granular or compressed
½ cup lukewarm water
¼ cup nonfat dry milk
2½ cups all-purpose flour
1 teaspoon salt**
¾ teaspoon baking powder
¼ teaspoon baking soda

*White sugar may be substituted for part or all of brown sugar. Honey or syrup for part of sugar adds flavor.

**When using self-rising flour, omit salt and baking powder.

Preheat oven at 425 °F. In a mixing bowl pour ¾ cup boiling water over first three ingredients and set aside to cool. Combine dry ingredients, including nonfat dry milk. Dissolve yeast in lukewarm water. To cooled bran mixture, add 1 beaten egg and yeast solution. Stir in flour; cover and let rise in a warm, draft-free place until double in size. Stir batter, pull off small pieces of dough, and place in greased muffin pans. Cover and let rise until double (about 1 hour). Bake until top crust is brown, about 20 minutes.

Variations

Add raisins to bran-type cereal, or use raisin bran. Add ½ cup finely chopped pecans to batter.

Water Bagels

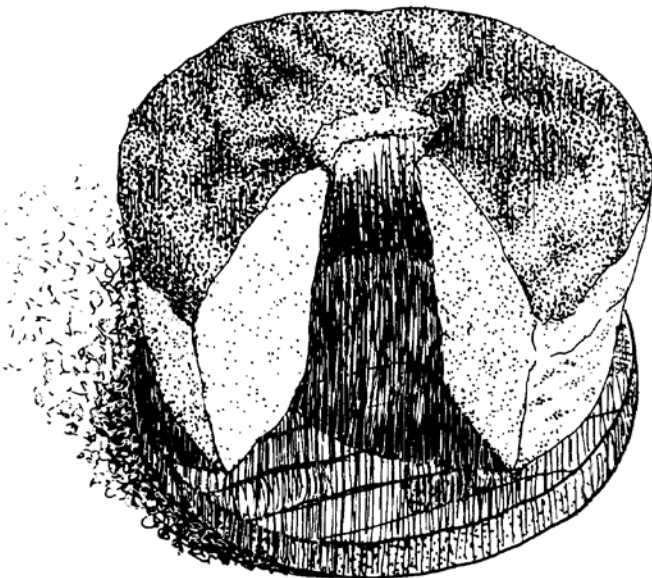
Yield: 12-14

1½ cup lukewarm water
1 package yeast
4-5 cups all-purpose flour
1 tablespoon salt
3 tablespoons sugar
1 egg white
1 tablespoon cold water

Sprinkle yeast over lukewarm water and stir until dissolved. Combine 3 cups of flour, salt, and sugar. Add to yeast water and beat vigorously. Continue beating while adding remaining flour to make a soft dough. Transfer to a lightly floured board and knead until smooth and elastic. Shape into a ball, place in an ungreased bowl, cover, and allow to rise until double in size. Punch dough down. Remove to a lightly floured board and divide into 12 balls. Punch a hole in the center of each ball and gradually stretch dough to form round bagels with center holes much larger than that of a doughnut. Another method for shaping bagels is to roll dough into rectangle, 10x12 inches, and cut 12 strips, 1x10 inches. Form each strip into a circle and pinch ends together. Place on an ungreased baking sheet. Cover and let rise 20 minutes. (If bagels rise longer than 20 minutes, they tend to break easily when put into simmering water.) Bring water to boiling in a large open kettle or shallow pan. Reduce heat to simmering and cook a few bagels at a time for 2 minutes. Turn and simmer 2 minutes longer. Drain and place on ungreased baking sheet. Bake at 375 °F for 10-12 minutes. Brush with beaten egg white and water mixture and continue baking until done, about 20 minutes longer.

Variation

1 tablespoon of sugar may be added to boiling water before cooking bagels. Cook for 7 minutes.



Activity 1

4-H Bread Record

Name _____ Year _____

I have prepared and scored the following yeast breads.

Date	Kind of yeast bread made	SCORE (Total Possible Points)							
		Amount	15 shape	15 crust	20 volume	20 texture	10 color	20 flavor	100 total

Total number times yeast bread prepared _____

Total number of breads prepared _____

Average score on all breads made _____

Activity 2

4-H Bread Record

Experiment 1 — Gluten Balls (recipe below)

Prepare two gluten balls to demonstrate differences in protein content of bread. Use two different brands of all-purpose flour or use an all-purpose flour for one and cake flour for the other.

After washing out the starch, what substance was left? _____

Was the small mass sticky? Nonsticky? Why? _____

After baking, was there a difference in volume or size? Yes _____ No _____

Why or why not? _____

Gluten Balls

1 cup flour

6 tablespoons water (about)

Combine flour and water to form a stiff dough. Some kinds of flour may take slightly more or less water, depending upon the protein and moisture content of the flour.

Stir vigorously for about 5 minutes, until dough is smooth and elastic. Shape into a ball.

Line wire sieve with cheesecloth. Lower sieve containing the dough into a bowl of cold water.

Keeping ball intact, wash, squeezing mass gently with fingers. Change water frequently as the ball is washed. Bits that slip from the mass as it is being washed should be removed from the cheese cloth from time to time and returned to the mass.

When rinse water is no longer cloudy, pour some of it into a clean transparent glass. If the water is clear, most of the starch has been removed.

Squeeze excess water from gluten ball; place on a greased baking sheet and bake at 450 °F for 15 minutes. Reduce heat to 300 °F and continue to bake for 20 minutes.

Experiment 2 — Flour Absorption of Liquid

Select three brands of flour. Measure 1 cup from each into separate bowls. Number bowls. Measure water in as many separate measuring cups.

Gradually mix water with each flour until firm doughs are formed. Record the amount of water each flour absorbed.

Flour number 1	Amount of liquid _____
Flour number 2	Amount of liquid _____
Flour number 3	Amount of liquid _____

Which flour absorbed the most liquid? _____

Which flour contained the most protein? _____

Experiment 3 — Yeast Growth

Supplies needed:

- 4 clean bottles
- 4 balloons
- 4 packages yeast
- 2 tablespoons sugar
- measuring cup
- 4 labels

- Number bottles 1 through 4
- Pour ½ cup cold water into bottles 1 and 2.
- Pour ½ cup lukewarm water into bottles 3 and 4.
- Add 1 tablespoon sugar to bottles 2 and 4.
- Add 1 tablespoon yeast to each of the 4 bottles.
- Cover bottles with balloons and shake gently to mix ingredients. Let stand 30 minutes.
- Describe results. Which balloon held the most gas (carbon dioxide)?

Bottle 1 _____

Bottle 2 _____

Bottle 3 _____

Bottle 4 _____

Activity 3

4-H Bread Record

Bread Cost Analysis

Select a basic loaf bread recipe, a roll recipe, and a French bread recipe. Determine the cost of making each. (See **Figuring Cost** below.) Compare the cost of each with a comparable product bought at the store. Which costs the most?

Bread	Made at home	Purchased
Loaf Bread	_____	_____
Rolls	_____	_____
French Bread	_____	_____

Figuring Cost

To determine cost, use the following:

_____ Cost of each ingredient totaled* (sum cost of all ingredients).

_____ Cost of equipment if necessary to purchase additional utensils (prorate cost over years of possible service).

_____ Cost of energy (fuel). Estimate this cost. (Check with leader or local utilities representative.)

_____ Cost per loaf or roll (divide total cost by number of loaves or rolls).

*Ingredients	Yield (cups)	Weight per cup (about) (oz)
1 pound (16 oz)		
Butter, margarine, lard	2	8
Flour, all-purpose	3½	4½
Oil	2 ⅛	7½
Sugar	2	8
Vegetable shortening	2¼	7

Milk, nonfat dry: 1 ounce = 4 tablespoons

Milk, liquid: 1 quart = 4 cups

Activity 4
4-H Bread Record

Exhibits and Demonstrations

A. Demonstrations and talks given

Title _____

Number of times given _____ Where* _____

B. Exhibits (list)

C. Other

*Local, county, district, state

Write a story about your experiences in the yeast bread activity. Include why you selected this activity, new things you learned, how you have helped others, and any experiences in judging.



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