More boys and girls belong to 4-H than any other youth group.
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**4-H Checklist for Food Skills and Knowledge (C/DV)**

- Have 4-H'ers turn to the Bread Baking Basics page in this publication.
- Go over the skills covered during Unit 4 – Bread Baking Basics.
- Have 4-H'ers check the skills they have accomplished. Refer to the skills checked off in the checklist they would like to record in the section.
- For more information on completion of the Bread Baking Basics Project, refer to 4-H Checklist for Food Skills and Knowledge (C/DV).

**Learning More about Bread**

- Refer to C/785, "4-H Checklist for Food Skills and Knowledge." This will provide an overview of bread baking covered in Exploring the World of Foods and an explanation of the proper storage of bread. Want more detail? Refer to 4-H Checklist for Food Skills and Knowledge (C/DV).

**Record Book Completion**

- Answer questions on record books.
- Ask 4-H'ers to complete the Bread Baking Basics page in this publication.
- Ask 4-H'ers for additional skills they have accomplished during this section.
and give the dough a quarter turn, then fold over and press down again—Leader Meeting 3.

15. How should you let dough rise? (Warm moist environment, 80°F-85°F is best. Refer to Leader Meeting 7 for descriptions of three satisfactory methods.)

16. What is yeast and how does it grow? (Yeast is a living organism. It grows by having a warm, moist environment with food supplied by the other ingredients in the bread dough, especially sugar. Salt controls the action of the yeast—Member Meeting 7.)

17. What gas is given off by yeast and how can you tell if enough gas has been given off? (Carbon dioxide pushes the dough upward. When the ball of dough is twice as big as it was at first, it is called “doubled in bulk”—Member Meeting 7.)

18. Give one reason for the following baking problems: (See Muffin Troubleshooter’s—Member Meeting 2.)
- Muffins do not rise properly. (Mixed too well, oven heat too high, or not enough leavening agent.)
- Muffins are pale. (Oven heat too slow, not baked long enough, or not enough sugar.)
- Muffins are hard on the outside; soggy on the inside. (Oven heat too high)

19. What is one factor which determines whether a bread is classified as an quick bread or a yeast bread? (Type of leavening agent: Yeast breads contain yeast; whereas, quick breads contain air, steam, or carbon dioxide gas from baking powder or baking soda—Member Meeting 2, Leader Meeting 2 or 4.)

20. The consistency of a bread product is determined by what? (Primarily, the ratio of flour to liquid ingredients. Refer to chart in Member Meeting 2. Other factors discussed in meeting 3. both Member and Leader. include: a) the accuracy with which the ingredients are measured; b) the manner in which ingredients are manipulated, that is, kneaded and/or mixed; c) equipment used is the same as described in the recipe; d) ingredients are combined as directed in the recipe; and e) the way the bread is baked.)

21. What is the purpose of a leavening agent? (Makes the bread product rise so that it will be light and tender when baked—Member and Leader Meeting 2.)

22. Give two examples of leavening agents that are used in quick breads. (Air, steam, or carbon dioxide gas through baking powder or baking soda—Member and Leader Meeting 2.)

23. Give five examples of quick breads. (Pancakes, waffles, popovers, muffins, nut breads, coffee cakes, dumplings, drop biscuits, biscuits, shortcakes, scones, some pizza dough recipes, etc. Refer to recipes included in Member Manual and “Kinds of Quick Breads” Meeting 2 in Member Manual.)

24. List the six main ingredients used in quick breads. (Flour, sweetener, fat, liquids, eggs, and leavening agent. Refer to Member and Leader Meeting 2.)

25. There are three basic methods of mixing quick breads. Describe one. (1) Muffin Method—description in Member Manual, Meeting 2; (2) Biscuit Method—description in Member Manual, Meeting 3; (3) Conventional or Creamed Method—description in Member Manual, Meeting 4.)

26. Why is it important to know the size of pan that is specified in the recipe? (The recipes in most cookbooks are tested for the pan sizes given. In too small a pan, the batter may run over and the center of the bread may not get baked even though the outside is done. If the pan is too large, the batter will spread over a greater surface area; and, therefore, bake faster, dry out more, and have a lower volume.)

27. How do you know when quick breads are done? (Appropriate tests for doneness vary with the bread product prepared. Common tests for doneness include: (1) toothpick test; (2) finger touch test; (3) crust color; (4) sides...
QUESTIONS/ANSWERS

1. **D** A basic ingredient in quick breads is: a) leavening agent, b) flour, c) liquid, d) all of the above. (The six basic ingredients include: flour, liquid, sweetener, fat, leavening agent, and eggs.)

2. **D** In quick breads, baking soda must be used when the mixture contains: a) water, b) sweet milk, c) eggs, d) none of the above. (Bread product recipes calling for baking soda contain an acid ingredient of some type for the baking soda to react with.)

3. **A** Which quick bread contains the most liquid? a) waffle, b) muffin, c) biscuit, d) blueberry muffin. (Waffles are a pour batter; therefore, contain a higher proportion of liquid ingredients in the flour/liquid ratio.)

4. **D** Leavening agent used in quick breads is: a) baking soda, b) baking powder, c) air, d) all of the above. (Quick breads depend on air, steam, or carbon dioxide gas supplied by baking powder or baking soda for the leavening.)

5. **C** When using the muffin method of mixing: a) the fat is cut into the dry ingredients, b) the shortening is creamed with the sugar and eggs, c) the liquid ingredients and dry ingredients are mixed separately before being combined, d) none of the above. (The basic steps in the muffin method of quick bread preparation include mixing liquid and dry ingredients separately and stirring them together just until combined and dry ingredients are moistened.)

6. **A** Muffin cups should be filled full of batter: a) ½, b) ⅔, c) ⅓, d) ⅓. (Most quick bread recipes state filling baking container ⅔ - ⅞ full.)

7. **A** Quick breads made from pour batters include: a) pancakes, b) biscuits, c) coffee cakes, d) all of the above. (A pour batter is defined as one that will pour easily from a spoon, or a pitcher; can vary in thinness. Pancakes, waffles, and popovers are common examples.)

8. **D** Quick breads can be made from: a) pour batters, b) drop batters, c) soft doughs, d) all of the above. (Quick breads are usually divided into these three groups according to the consistency of the unbaked batter or dough.)

Determine which of the two products in each grouping is the most economical:

9. **A** a) whole wheat bread, 1 pound loaf for 35¢, b) white bread, 1 pound loaf, 36¢

10. **A** a) cream of wheat, 39¢ for 6 ounces (6.5¢ per ounce), b) Sugar coated, ready-to-eat cereal, 79¢ for 10 ounces (7.9¢ per ounce)

11. **A** a) rolled oats, 59¢ for 10 ounces (5.9¢ per ounce), b) quick cook oats, 1 serving package, 10¢ per package (10¢ per ounce)

12. In the following bread recipe, what supplies the leavening? (soda)

   - 4 slices bacon, cut up
   - 2 cups corn meal mix
   - ½ teaspoon soda
   - 1½ cup buttermilk
   - 1 egg, beaten

13. What is gluten and what is its function in baked products? (It is a protein fraction of the flour. It becomes elastic and helps develop the bread’s characteristic shape when mixed with liquids and manipulated through stirring or kneading—Leader Meeting 2)

14. Describe kneading. (Turn dough on lightly floured surface; pat down; fold the dough over and push down with the heel of your hand, curving your fingers over the dough;
BREAD BAKING BASICS

Val Hillers, Food Specialist; Lee Ann Esbach, Graduate Assistant; and Sue Butkus, Nutrition Specialist, WSU Cooperative Extension

GENERAL INTRODUCTION

Congratulations and thanks for volunteering to be a 4-H Breads Project leader. The experience can be fun and educational for both you and your 4-H’ers. This guide will help you in planning activity-filled meetings for 4-H’ers in your group.

ORGANIZATION OF LEADER GUIDE

The eight Breading Basics units in the leader guide are divided into the following major sections.

- Meeting Ideas
- Demonstration Ideas
- Meeting Notes
- Meeting Activities
- Check What You Learned

The ideas sections offer suggestions of what to do during a lesson. Meeting notes provide information discussed in the member manual in the introduction, meeting topics, and recipes sections. The meeting activities and check what you learned portions correspond to the same sections in the member manual.

These various parts include discussion material and follow-up activities and experiments. They are intended to spark your creativity. If you think of other activities to add or substitute, feel free to do so.

A more detailed look at what topics you’ll be covering in the lessons can be found in the chart at the beginning of this guide.

PREPARING FOR THE LESSONS

To prepare yourself for teaching bread baking basics, here are answers to some basic questions.

1. Where should I hold the meetings? A home—

2. How about equipment and supplies? Finding enough measuring cups, spoons, muffin tins, cookie sheets, and large mixing bowls is often a problem. You may ask each 4-H’er to bring some of the necessary equipment from home, or you may decide to borrow from a friend or neighbor.

3. What about ingredients? Some clubs handle this by having each member bring one of the ingredients to the meeting. However, you run the risk of problems if a member forgets an ingredient or is ill. More work for you, but less nerve-racking, is to make a grocery list yourself and purchase the necessary supplies for each meeting. You may charge a small registration fee at the beginning of the project to cover the cost of these supplies. Or, you may charge a monthly ‘fee to pay for ingredients. If you have a teen leader working with you, this is a task you could assign to him or her. Finally, parents may be called on to help you in this and many other ways. Remember, parent support is important! Keep parents informed and involved. They can—and often want to—assist you in many ways.

4. How do I prepare for each lesson? Before you begin, read the entire member manual and leader guide. To prepare for each lesson, carefully read the entire lesson yourself. It is important to reread the member manual, since information is presented there that is not necessarily repeated in the leader guide. Read the suggested activities and suggested meeting plans. Choose activities that fit the needs, interests, and abilities of your members. Activities are suggested for each meeting. You
UNIT 8—LET’S SHARE AND EAT

### MEETING IDEAS

1. Evaluate the quality of bread products.
2. Review bread baking procedures and techniques.
3. Plan, prepare, and serve a buffet for family and friends.
4. Evaluate accomplishments of bread baking knowledge and skills.

### DEMONSTRATION IDEAS

1. How to evaluate the quality of bread products.
2. How to set up a buffet.
3. How to serve foods correctly.

### MEETING NOTES

**Try a Buffet!**

Review the “suggestions for arranging a party buffet” in the member manual. Discuss WHY these tips are important and how they apply to your club’s plans for serving others.

Lead a group discussion to identify the details, responsibilities, and tasks involved in this club activity. 4-H’ers can then divide up responsibilities so all tasks have been considered. Have 4-H’ers consider responsibilities during the planning, preparing, serving, and cleanup stages of this project.

### Serving Others

Plan time during the meeting to review and practice correct procedures for introducing guests, serving guests, and conversing with guests. Role-play practice sessions may be helpful. Refer to ideas presented in the member manual on this topic.

For additional information on serving others and host/hostess duties, refer to EM 3443, “Courtesies—As Host, As Guest,” available from your county Extension office.

### MEETING ACTIVITIES

**Share What You Learned—Project Exhibits**

Following is a list of suggestions for exhibits or displays. Ideas from this list could be incorporated into meetings at which topics on the list are discussed. Or, 4-H’ers could work in teams or small groups to prepare an exhibit or display that represents your club and shares information your club has explored at a community activity or 4-H community awareness activity. Possibilities for sharing exhibits are provided in the member manual. Check with your County Extension Agent for other possibilities in your county. Remember, the ideas on this list are only suggestions—encourage 4-H’ers to be creative! Here are some ideas:

1. Display of measuring equipment used for bread making—explain correct techniques and why correct measurement techniques are important.
2. Display of the effects of mixing on the quality of muffins.
4. Abbreviations used in bread recipes.
5. Display of various biscuit shapes.
6. Effects of different amounts of kneading on biscuits.
7. Need for sifting to mix in leavening agents (use cocoa experiment).
8. Display of various bread making methods with instructions for testing each bread product for doneness.
9. Summarize pointers on handling and manipulating ingredients for successful bread products.
10. Display on various methods of quick bread production.
while their bread is rising and/or baking.

1. Yeast—one-cell organism used as a leavening agent.

2. Carbon dioxide—gas given off when yeast is allowed to ferment or react.

3. Texture—the appearance or grain of a bread product; this will be rough if you forget the salt in your bread recipe.

4. Mix—to combine together; you need to ______ sugar or a sweetener with the yeast mixture to provide food for the yeast to grow.

5. Rises—as dough ______, the yeast action changes it from a firm, heavy ball into a big, light puffy one.

6. Warm atmosphere—yeast dough rises best in this type of environment; a temperature of 80-85° is best.

7. Greased—put dough in a lightly _______ bowl and then cover when rising.

8. Doubled in bulk—when ball of dough is twice as big as it was at first.

9. Hollow sound—tap the top of bread and listen for this to test the doneness of bread.

10. Cool—when ________, place loaf of bread in plastic bag and seal for storage.

**Other Bread Baking Terms**

1. Punching down—this is done to a batter bread by stirring it hard for about 30 seconds.

2. Resting—step in bread making which immediately follows “punching down.”

3. Panning—putting dough in pans.

4. Oven spring—term associated with bread rising during the first 8-10 minutes of baking.

**PRODUCT EVALUATION**

Criteria for yeast breads and yeast bread troubleshooters are listed in the member manual.

Before the meeting be sure to assemble the food and materials you need; arrange for members to help—including preparation, arranging the room, shopping, and clean-up. Don’t forget to assign demonstrations for the next meeting. Demonstration ideas are provided in the leader’s guide for each meeting. Take time to have 4-H’ers evaluate the products they have made. Evaluation guides are included at the end of each meeting in the member manual for the specific bread products discussed for that meeting. You may also want to ask your county Extension agent for evaluation materials.

Also, encourage 4-H’ers to record their bread baking activities in the “Bread Baking Record” add sheet of their record book. After each meeting, evaluate for yourself how the meeting went.

5. What are some sources of supplementary information? Your own cookbooks may be sources of additional information. 4-H’ers may also have cookbooks or resource materials that relate to bread baking topics your group is studying. Visit your local library. It usually has a wealth of information on breads and bread products.

**YOUNG PEOPLE AS LEARNERS**

Here are some suggestions to help you when working with young people in different age groups:

1. Working with 9- to 12-year olds (Junior 4-H’ers). In general, 9- to 12-year olds:

   - Are growing rapidly. Girls, especially, have a growth spurt sometime during this age range. While not all young people develop at the same rate, most in this age group may seem awkward at times because their ability to control small muscles is not as well developed as their large muscle control—some coordination may be weak. You can help by being understanding if they are unable, for example, to measure small amounts such as ¼ teaspoon without help.

   - Are extremely curious. You will find that 9-

12-year olds are constantly asking, “Why?” Plan time for the meeting activities and suggested experiments so 4-H’ers can discover some of the answers to their “whys?” by themselves. There is no need to answer all their questions. In fact, youngsters will learn by finding answers to their own questions. Encourage members to find out answers and report back at a later meeting.

   - Have a short interest span. You will find their attention span wanders if you talk more than 5-10 minutes. You can help by keeping activities short and easy to understand. Don’t forget to plan some change-of-pace activities while members’ bread products are baking.

   - Want to have more control over their lives. 4-H’ers, ages 9-12 are beginning to “grow up” and be more independent. Yet, their ability to make decisions is limited. You can help by offering them a choice between two or three options. This can be done by providing alternatives of demonstration topics or bread products to prepare. In this way, you are leading 4-H’ers while they are developing decision-making skills.

   - Want to feel they are contributing to their family. Encourage them to share the skills they are learning with their families. Perhaps you can even set aside a regular portion of your meeting to ask 4-H’ers to share what they have done at home since the last meeting.

   - Need your approval. Be supportive. Simple statements, such as “Good work,” “It’s a pleasure to teach when you work like this,” “This really looks nice,” or “I bet your mom and dad would be proud to see the job you did on this,” are great reinforcers.

2. Working with members who are in their early teens (Intermediate 4-H’ers). In general, boys and girls entering their teens:

   - Are maturing rapidly. Both sexes are deeply concerned about their changing bodies and changing appearances. Help members learn the significance of a variety of bread products.
in a sound nutritional eating plan. Provide opportunities for members to improve and learn new bread baking skills.

- Feel the need for greater independence. Group ties are very strong. Group approval and acceptance is one of their most urgent needs. As a leader, you have an opportunity to help every member “fit in.” Each member can be encouraged to make a meaningful contribution to the club.

- Want increasing responsibility. Both boys and girls of this age can reason well, plan a course of action, and follow through. Guide, but don’t control the meeting. Members can have responsibility for a large share of meeting planning. Encourage members to be creative and innovative.

- Live primarily in the present. “Now” rather than tomorrow is most important, but 4-H’ers in this age group are gradually developing greater interest in the outside world. Start each meeting with discussions of how the topic relates to them individually, as persons—then on to their family, school, or community.

- Experience difficulty in generalizing. Young people in this age group may need fairly detailed content outlines and structured learning experiences. Work from a well-structured outline with room for changes. Using questions will help 4-H’ers develop concepts, evaluate them, and draw their own conclusions.

- Are inclined to be forgetful. Unique reminders need to be utilized. Have 4-H’ers write down important dates, or have them develop their own telephone calling committee. You may want to have 4-H’ers develop a 4-H calendar for the meeting year.

- Are inclined to be enthusiastic and often impulsive. Capitalize on 4-H’ers’ enthusiasm with your own eagerness and a variety of action-oriented learning activities. Create an atmosphere for using enthusiasm with self-chosen follow-up projects and demonstration ideas, etc.

3. Working with 4-H’ers in their mid-teens. (Senior 4-H’ers). In general, teenagers:

- Desire to participate in the teaching-learning process. Offer senior 4-H’ers opportunities to help plan meetings and projects. Have 4-H’ers “teach” parts of the meeting sessions. Let 4-H’ers take part in evaluating materials, activities, and bread products prepared.

- Begin to show greater independence. Provide for individual learning projects, with some aspects of the project and outside learning experiences. Perhaps have older 4-H’ers research a special aspect of bread preparation (cultural breads, using new equipment, etc.) and share what they learned with the rest of the group.

- Show preference for discussions. Young people in this age group like to share ideas. As a leader, you need to set ground rules for discussions and be prepared to get the discussion started and occasionally, keep it going.

- Enjoy analyzing and solving problems together. Provide problem-solving situations and use questions to stimulate thought and discussion. Try questions, such as, “What do you think?” “Why?” “How could it be better?” “What went wrong?” “How would you do it next time?”

**PREPARATION POINTERS**

**No-Knead Yeast Bread or Rolls**

1. Ingredients for this yeast dough recipe are combined according to the rapid mix method. With this method, the undissolved yeast is mixed with some of the dry ingredients. Rapid mix makes it easier to blend the ingredients.

2. The flour and yeast mixture is stirred to distribute and mix ingredients thoroughly.

3. Milk, butter, sugar, and salt mixture is stirred during heating. This prevents milk fat solids from sticking to the bottom of the pan and promotes an even distribution of temperature.

4. When using the electric mixer, remind 4-H’ers to scrape sides of bowl frequently and to demonstrate safety procedures while scraping the bowl.

5. The second addition of flour is added by hand. A wooden spoon is used because of the heaviness and stiffness of the dough.

6. Doneness test for loaf of bread—top of loaf should sound hollow when tapped.

**Recipes**

No-knead yeast bread and rolls are explained in the member manual.

**MEETING ACTIVITIES**

**Function of Ingredients Matching**

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

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
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<tbody>
<tr>
<td>1. h</td>
<td>a. Makes the bread tender</td>
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<tr>
<td>2. s</td>
<td>b. Controls rate of yeast growth</td>
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<tr>
<td>3. a</td>
<td>c. Helps to brown crust</td>
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</table>

| 4. b     | d. Gives structure and body to the loaf |
| 5. c.g.f | e. Is needed to develop the gluten |
| 6. a.d   | f. Speeds up yeast activity |
|          | g. Gives flavor |
|          | h. Forms carbon dioxide gas |

**Experiment to Try**

**Effects of Leavening Power of Yeast**

1. Divide 4-H’s into three groups: each group prepares one of the three mixtures discussed in the member manual.

2. Water temperature for this experiment should be warm: 105°–115°. For best results, use a thermometer to check water temperature.

3. Mixtures need to be stirred so yeast can become reactivated and utilize ingredients in the mixtures.

4. Mixtures could be mixed in small bottles and covered with a balloon to more graphically illustrate the gas given off by the yeast.

5. Questions to ask 4-H’ers:
   - What are differences in gas formation? (Mixtures #2 should have the greatest amount of gas. Mixture #1 should have the second greatest amount of gas. Mixture #3 should have the least amount of gas formed and smallest reaction.)
   - How does sugar affect yeast growth? (Sugar promotes yeast growth by providing food for the yeast.)
   - How does salt affect yeast growth? (Salt controls the action of yeast. If there is no salt in a yeast dough recipe, the dough will expand uncontrollably. Too much salt and the dough will not rise enough.)

**Check What You Learned**

**Yeast Word Search**

This would be a good activity for 4-H’ers to do.
UNIT 7—LET’S LEARN ABOUT YEAST BREADS

MEETING IDEAS

1. Evaluate kitchen safety practices.
2. Dissolve yeast.
3. Prepare a batter yeast bread.
4. Test bread for adequate rising.
5. Test bread for doneness in baking.
6. Identify the function or purpose of ingredients in bread baking.

DEMONSTRATION IDEAS

1. Proper knife use, care, and storage to avoid unnecessary safety hazards.
2. How to dissolve yeast. Show how to check the temperature of the water used to dissolve yeast.
3. How to knead bread.
4. How to test if yeast dough has doubled in bulk.
5. How to roll out yeast doughs.
6. How to shape a loaf of bread.
7. How to prepare a yeast bread product using the batter or no-knead method.

MEETING NOTES

Safety Check

Consider these discussion points with the safety checklist:

1. Electricity.
   a. Overloading circuits causes danger to the appliance and electrical system.
   b. Frayed and/or cracked extension cords may cause electrical accidents.
   c. Yanking or pulling on an electric cord may damage the cord.
2. Danger of burns.
   a. Loose handles or knobs may cause an unsuitable grip on the utensils.
   b. Baggy sleeves are more likely to drag across a range element and catch fire.
   c. People are more likely to knock pots or pans off the stove when handles of pans are not turned towards the center.
   d. Wet food tends to splatter when placed in hot fat.
   e. Thin or wet potholders do not protect against the heat.
3. Danger of falls.
   a. Tripping over items in a travel path and slick spills on the floor are major contributors to kitchen falls.
   b. When a folding chair is used as a step stool, it is likely to fold up or collapse.
4. Danger of cuts.
   a. Always follow the safety procedure of cutting away, rather than towards, self.
   b. Glass often breaks into many tiny slivers—clean up breakage thoroughly so all small slivers are removed. (Use wet paper towels to clean up broken glass.)
5. Danger of fire.
   a. Liquid fat is usually heated to 375°F for frying. With this high temperature there is a risk of fire if it overflowed onto a hot range element. At temperatures between 400°-450° (depending on the type of fat used), fats reach what is called the “smoking point.” When fat begins to smoke, it begins to breakdown chemically and causes off-flavors in foods. If fat is heated beyond the smoke point, it may catch on fire.
   b. Fire extinguishing materials (such as baking soda) should be close at hand so a fire could be easily and quickly extinguished.

Baking Yeast Breads

Refer to the tips and suggestion in the member manual for each of the following bread baking topics:
   a. Yeast and dissolving temperatures.
   b. Importance of salt and sweetener.
   c. How humidity affects amount of flour needed.
   d. Rising in warm place.
   e. Testing for doubled in bulk.
   f. Testing for doneness.
   g. Cooling and storage.

UNIT 1—LET’S GET ORGANIZED

MEETING IDEAS

1. Review of daily servings recommended, serving size, and nutritional contributions of the food groups with a special focus on the bread/cereal group.
2. Recognizing common cooking abbreviations used in recipes.
3. Correct measuring techniques with an emphasis on sifting and measuring flour and measuring shortening.
4. Correct use of names for kitchen utensils.

DEMONSTRATION IDEAS

1. How to measure flour.
2. The difference in the weight and amount of 1 cup of sifted flour versus 1 cup of unsifted flour.
3. How to measure shortening with a dry measuring cup and by weighing it.
4. How to get all the solid shortening out of the measuring cup with a rubber spatula.
5. How to wash dishes correctly.

MEETING NOTES

Lesson Organization

Part of this first meeting should be used to: (1) outline the Bread Baking Basics Project to 4-H members; (2) clarify what the members will learn, activities in which they will be involved, and food products they will be preparing; and (3) familiarize 4-H’ers with their project book, record book, and other supplemental project information.

The following meeting outline or format of information presented in this guide provides an overview for you to discuss the project and outline what 4-H’ers will be doing. In addition, Checklists of Food Skills and Knowledge, C 0785, lists the skills 4-H’ers will be working on in this project. Each 4-H’er should have a copy of this publication. Urge 4-H’ers to turn to this publication frequently and identify what they have learned.

Explain to 4-H’ers how their member manual is organized. It contains eight units with major sections, such as meeting topics, recipes, meeting activities, a review portion, and product evaluation of recipes made. A more detailed look at these lessons may be seen in the chart in front of both the member and leader bulletins.

For your information as leader, this guide is similarly divided, but contains additional information. For example, it offers meeting ideas and demonstration ideas at the beginning of each unit. Following these parts are the meeting notes sections, which cover the material discussed in the member manual under the headings of introduction, meeting topics, and recipes. Then come the meeting activities and review, as in the member manual.

All the 4-H’ers should have a copy of C 0788, Bread Baking Record, to add to their 4-H Record Book. Take a few minutes to clarify to 4-H’ers how to complete the record.

Food Groups

Remind 4-H’ers of the important role that bread and cereal products have in a good diet. For good nutrition and good health, eating a wide variety of foods is necessary. 4-H’ers’ daily diets should consist of a variety of foods from each of the food groups: bread/cereals, fruits/vegetables, meat and protein, and milk and dairy products. Consumption of fats and sweets should be limited.

Ask 4-H’ers for examples of foods from each food group. Then, review daily servings recommended, serving size, and nutritional contributions of the food groups.

Whole-grain and enriched breads and cereal are important sources of B-vitamins, iron, and protein. They are a major source of protein in vegetarian diets. Whole grain products also contribute magnesium, folacin, and fiber. Foods in the bread and cereal group include all products made with whole grains or enriched flour or meal.
<table>
<thead>
<tr>
<th>Food Group</th>
<th>Servings Needed Daily</th>
<th>A Serving is:</th>
<th>Reminders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread/Cereal</td>
<td>4</td>
<td>1 slice bread</td>
<td>Choose whole-grain products often.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>½ - ⅓ cup cooked cereal or pasta</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 ounce ready-to-eat cereal</td>
<td></td>
</tr>
<tr>
<td>Fruits/Vegetables</td>
<td>4</td>
<td>⅛ cup a small salad</td>
<td>Have citrus fruit, melons, berries, or tomatoes daily, and a dark-green or dark yellow vegetable frequently.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>an orange</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>½ cantaloupe</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>½ grapefruit</td>
<td></td>
</tr>
<tr>
<td>Meat and Protein</td>
<td>2</td>
<td>2-3 ounces lean, boneless, cooked meat, poultry or fish</td>
<td>Poultry and fish have less fat than red meats.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 eggs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 to 1½ cup cooked dry beans or peas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 tablespoons peanut butter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>¼ to 1 cup sunflower seeds</td>
<td></td>
</tr>
<tr>
<td>Milk &amp; Dairy</td>
<td>Adults—2; Children under 9-2-3; Children 9-12 yrs and pregnant women—3; Teens and Nursing Mothers—4</td>
<td>1 cup milk or yogurt</td>
<td>Skim, nonfat, and low fat milk and milk products provide calcium and keep fat intake down.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1⅛ ounce cheddar or swiss cheese</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 ounces processed cheese food</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1½ cup ice cream or ice milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 cups cottage cheese</td>
<td></td>
</tr>
<tr>
<td>Fats &amp; Sweets</td>
<td>Should be limited, especially in a low calorie diet</td>
<td>These are of low nutrient density; they have high calorie content in relation to their nutrition.</td>
<td></td>
</tr>
</tbody>
</table>

- What are some occasions when 4-H’ers feel it would be worthwhile to pay for convenience and ease of preparation?
- What are flavor and taste preferences of 4-H’ers?
- Overall, which mix did 4-H’ers prefer?

**CHECK WHAT YOU LEARNED**

1. Common ingredients in all quick breads: flour, fat, liquids, leavening agent, and flavoring.
2. They are labeled “quick” because they use air, steam, baking powder or baking soda as the leavening agent. Also, mixing and handling times are kept to a minimum.
3. The quick bread mix contains flour, nonfat dry milk, baking powder (for a leavening agent), salt, and shortening (lard or oil may be substituted for shortening for the fat ingredient).
4. When baking with the quick bread mix, the following needs to be added:
   a. Flavoring ingredients unique to the bread product being prepared.
   b. Eggs, if needed in the recipe.
   c. Water, or other liquid. Usually, extra milk is not necessary because nonfat dry milk is already present in the mix.
5. The key nutrients provided by bread and cereal products include B-vitamins, iron, and starch. (Refer to the beginning section of this meeting for information about these nutrients). Whole grain bread and cereals also contain fiber.
**Preparation Pointers**

- Stirring and then sifting the dry ingredients together are important steps so that the dry ingredients will be well distributed.
- Be sure that 4-H’ers cut in fat thoroughly.
- A recipe of the mix could be made up at the meeting, and then divided up so 4-H’ers could make different baked products using the mix.
- Enriched commal, rolled oats, or additional all-purpose flour can be substituted for all or part of the whole-wheat flour.
- Compare suggested recipes included in the member manual and have 4-H’ers identify those utilizing the biscuit method of quick bread preparation.

**Recipes**

See the member manual for the Master Mix recipe and how to use the mix to make biscuits, easy-as-a-Mix Pizza, and pancakes.

**MEETING ACTIVITIES**

**Field Trips**

1. Visit the local grocery store to investigate convenience bread products. Make a list of the different varieties of biscuit mixes, canned biscuits, brown-and-serve biscuits, and other convenience or partially prepared bread products available. Ask 4-H’ers: What do you find? What is the price of each? How much do we as consumers pay for convenience? Are they worth the convenience? Why?
2. Visit the grocery store to investigate step-saving convenience products to use while baking. Look for convenience products that eliminate steps in food preparation, such as pre-sifted flour or graham cracker crumbs.

**Field Trip Follow-Up**

1. Compare the quick bread mix with commercial baking mixes. Have 4-H’ers check label information on commercial baking mixes. This can be done as an activity coordinated with a field trip to the store. An alternative method is to have each 4-H’er bring label information from one commercial baking mix to the meeting to share with the rest of the club.
2. Demonstrate how to complete the chart provided in the member manual. Use the homemade quick bread mix recipe to complete the first baking mix product in the chart:

<table>
<thead>
<tr>
<th>Product</th>
<th>Contains Enriched Flour</th>
<th>Kinds of Milk Used</th>
<th>Leavening Agent Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homemade Quick Bread Mix</td>
<td>Yes, enriched dry milk powder</td>
<td>and whole wheat</td>
<td>Baking soda</td>
</tr>
<tr>
<td>Biscuit Mix</td>
<td>All-purpose flour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy-as-a-Mix Pizza</td>
<td>All-purpose flour</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. After 4-H’ers charts are completed, ask for comparisons with the baking mixes explored.

**Consumer Experiments to Try**

1. Compare Master Mix with commercial mixes. Before beginning this experiment, have 4-H’ers decide what criteria they should use for evaluating the quality of pancakes. 4-H’ers should include some of the following standards:
   - Even color — golden brown
   - Light and tender
   - Rise slightly during cooking time
   - Good flavor
   - Smooth texture
2. Compare pancake mixes. Use the criteria above to evaluate the different pancake mixes made for this experiment.
   - Emphasize differences in cost/serving between the different mixes used in this experiment.
   - 4-H’ers should discuss whether ease in preparation is worth the difference in price.

**Food Safety Techniques**

(Refer to member manual)

**Abbreviations to Know**

(Refer to member manual)

**Measuring Skills**

(Refer to member manual)

**MEETING ACTIVITIES**

**Measuring Practice**

1. Have 4-H’ers bring a set of dry measuring cups; a liquid measuring cup, and a set of measuring spoons to the meeting.
2. Show your club members how to measure ingredients accurately:
   - Discuss differences between dry and liquid measuring cups.
   - Set cup on level surface to measure liquids.
   - Level tops of spoons and cups when measuring dry ingredients.
   - Sift flour before measuring, if recipe calls for sifted flour.
   - Pack brown sugar firmly to measure.
3. Follow the measuring practice with an experiment to illustrate the importance of accurate measuring and mixing.
   a. Group 4-H’ers into groups of 2 or 3. Have each group measure 1 cup of unsifted flour and weigh it. Have them sift flour, measure and weigh it.
   b. Stir 1 tablespoon cocoa into 1 cup of flour. Record results. Sift cocoa and flour together, record results.

**Kitchen Utensil Identification**

Use this activity as a follow-up to Kitchen Utensil Know-How.

1. Choose commonly used kitchen utensils. Select utensils from the list itemized in the Kitchen Utensil Know-How. Set utensils out on counter, table, or large trays.
2. Have 2-3 towels folded nearby.
3. Ask members to look at each of the utensils on the tray or table. Do they have any questions on correct use? What is the correct name for it? Any special safety precautions which should be followed when using this utensil? When would you use it? For what cooking technique would you use it?

**Kitchen Utensil Know-How**

4-H’ers also need to know about kitchen utensils and equipment when cooking. At your meeting, take time for 4-H’ers to inspect and learn the correct use and name for kitchen utensils used in making simple bread products.
UNIT 6—LET'S STIR UP SPEEDY CONVENIENCE MIXES

MEETING IDEAS

1. Explain the nutritional value of bread products.
2. Identify reasons why baking results are affected by pan selection.
3. Make a quick bread mix.
4. Prepare a bread product from the quick bread mix.
5. Investigate convenience baking products.
6. Compare the quick bread mix with commercial baking mixes.

DEMONSTRATION IDEAS

1. How to make and use a quick bread mix.
2. How to prepare a food product using the quick bread mix.
3. How to store and label the quick bread mix to maintain quality.
4. How the ingredients in the quick bread mix can be varied.
5. How to use a commercial mix for preparing bread products.

MEETING NOTES

Bread/Cereal Nutrition

Remind 4-H’ers of the importance bread and cereal have in a good diet. There are many key nutrients provided by breads and cereals. These key nutrients include the following:

- B-vitamins. This is a group of vitamins which are considered together because of their similar purposes. Common examples of B-vitamins that 4-H’ers have probably heard of include thiamin, niacin, and riboflavin. What role do B-vitamins have in good health? It has long been known that they help us grow, give us a good appetite, help us digest and use our food, and help us to have healthy skin. More recent study has shown that each of the B-vitamins is required for a number of the chemical reactions that occur in each cell of the body.

- Iron. This mineral is low in diets of many youth. It is necessary to carry oxygen in the blood. Lack of iron causes anemia.

- Starch. This is a type of carbohydrate, and is an important source of energy in the diet.

- Fiber. This nutrient aids in proper digestion and helps prevent constipation. Whole grains and bread and cereal products provide good sources of fiber.

Refer back to Unit 1 Meeting Notes for a discussion on the food groups. Review size of serving for bread/cereal products and number of servings needed daily.

Quick Bread Know-How

The member manual outlines suggestion on working with a quick bread mix. In reviewing these suggestions with 4-H’ers, discuss:

- Why some individuals may prefer to use oil rather than a solid fat (oil has an increased polyunsaturated fat level, which may be beneficial for persons with some types of heart disease.)

- Additional tips on using the quick bread mix can be found in EM 4700 “Master Mix,” which is available from your county Extension office.

Baking Know-How

Discuss with 4-H’ers:

- How the heat of either oven, griddle, or waffle iron gives a baked product its finished color, texture, and flavor.

- Why do baking times and temperatures vary with different bread product?

- Pointers for selecting baking pans. The pointers discussed in this section of the member manual provide follow-up and support for the statement, “The size, shape, weight, and color of pan material affect baking results.”
provide for the proper amount of air to be incorporated. Air then expands when it rises.
b. Steam results from the liquid in the popover batter and cream puff dough. Steam also expands when heated.

3. What is your description of the consistency of popover batter?
a. Popover batter should be the consistency of whipped cream.
b. This will aid in achieving a good popover (crisp, hollow shell, which is tender). If the batter is thoroughly beaten, the consistency will resemble whipped cream, and enough gluten will be developed so that the steam formed in baking will be held in a larger pocket and cause the popovers to rise.

c. In Yorkshire, it is served before the meat course as a hearty pudding. Generally, most cooks today substitute the pudding for the usual starch served with a main course.

PRODUCTION EVALUATION
To see how well the popovers turned out, consult the member manual for criteria and problem solvers.

UNIT 2—LET’S MAKE MUFFINS

MEETING IDEAS
1. Develop and explain reasons for practicing baking safety tips.
2. Distinguish between pour batters, drop batters, and soft doughs.
3. Prepare basic muffins and variations.
4. Identify the function or purpose of the six basic ingredients used in bread baking.

DEMONSTRATION IDEAS
1. How to prepare muffins.
2. Prepare a basic muffin recipe with a variety of additions.
3. How to arrange oven racks, preheat oven, use potholders correctly, and use cooling racks.
4. Explain the function of the six basic ingredients used in baking.

MEETING NOTES

Baking Safety Tips
Points to consider when discussing this section:

- **Using the oven.** Demonstrate the correct method for preheating the oven. Remind 4-H’ers that it usually takes about 10 minutes to preheat an oven for baking; however, this will vary with individual ovens. Also, discuss variations 4-H’ers may find in setting their ovens at home. Note of caution: Many ovens have the timer associated with the automatic time-cook control. Caution 4-H’ers to set timer correctly, and always make sure the automatic control is set at “Manual.”

- **Rack arrangement.** 4-H’ers will find it easier to adjust and move racks before the oven is hot. For most baking, racks are generally placed in the lower third of the oven.

- **Pan arrangement.** Pans should not touch each other or oven walls when placed in the oven. Also, baking pans should not be placed directly above each other on oven racks.

- Setting timer. Often, bakers will set the timer for 5 minutes less than the time specified in the recipe. Utilize an appropriate test for doneness to determine if additional time for baking is needed. (Seeleader guide meeting 3, “Let’s Bake Biscuits,” for a discussion regarding the appropriate tests for doneness.)

- **Potholders.** Potholders need to be stored near the stove for easy access. Caution 4-H’ers that a wet potholder will serve as a conductor of heat.

- **Removing hot pans from the oven.**
  1. A potholder in each hand assists 4-H’ers in lifting bread products out of the oven evenly and enables them to keep the bread product level.
  2. Pulling the oven rack out a little way will make it easier for 4-H’ers to get a firm and secure hold on hot bread products as they lift them from the oven.
  3. Cooling racks promote an even and fast cooling of bread products.
  4. Placing hot pans on surfaces not designed for hot dishes, such as kitchen counters, may damage the surface.

- **Turn off oven when finished.** Remind 4-H’ers that turning off the oven promptly is an efficient and energy-saving practice.

KINDS OF QUICK BREADS
- Have 4-H’ers identify a variety of quick bread products. As a group, refer to the chart “Kinds of Quick Bread,” in the member manual and classify different quick bread products into the appropriate categories of quick bread type.
- Have 4-H’ers look up quick bread recipes for each type. Check ingredient amounts and see if the formula shown in the member manual for proportion of flour and liquid ingredients applies.

PREPARATION POINTERS
Muffin tins should be very lightly greased. 4-H’ers
often tend to overdo this step. The following Preparation Pointers apply to the muffin method of mixing:

1. All liquid ingredients are mixed together in a separate bowl.
2. Next, dry ingredients are combined together. Remind 4-H’ers how important this step is to distribute ingredients evenly (especially salt, spices, and the leavening agent) throughout the entire batter or dough.
3. Liquid ingredients are combined with dry ingredients and mixed together all at once. Quick breads are mixed by hand and only stirred briefly—just until dry ingredients are moistened. Overmixing of quick breads contributes to a tough product with tunnels.
4. Quick breads rise rapidly; therefore, pans should be filled from ½ to ¾ full.
5. If 4-H’ers choose to use a fruit addition to the basic muffin recipe, the baking time may need to be increased.
6. Also, any addition to a muffin recipe should be thoroughly mixed with the batter without increasing the mixing time.

Recipes

The recipes for basic muffins, self-rise muffins, and special kinds of muffins may be found in the member manual.

MEETING ACTIVITIES

Experiments to Try

1. Effects of Too Much Mixing.
   • Have 4-H’ers compare differences in appearance, texture, tunnels, exterior surface, size, etc. of the different muffins.
   • Overmixed muffins should have some of the following characteristics: larger in size, higher rising, larger tunnels inside, smooth exterior surface, and tough texture.
   • Quick breads, as all bread products, depend on gluten development in the mixing process. As liquid is added to the dry ingredients, gluten (a protein fraction of flour) starts becoming elastic. The more manipulation or handling (as in stirring) is done to this type of bread, the more gluten will be developed. This results in a tough textured product. Therefore, for most quick breads, keep mixing to a minimum.

   • Have 4-H’ers add extra ingredients and compare differences in: (a) exterior surface and appearance; (b) interior texture and crumb; (c) distribution of fruit, size of fruit; (d) color or of dough; (e) moistness of batter; (f) overall attractiveness of muffin.
   • When adding extra ingredients to muffin batter, best results are achieved when extra ingredients are folded into batter. At this time, you might want to review the definition of folding. Fruit should be cut into small pieces and well-drained.

CHECK WHAT YOU LEARNED

Basic Ingredients Chart

4-H’ers can refer to the introduction for lesson 2 in the member manual for information to assist them with completing the chart.

Flour
• Purpose. Provides framework or structure. The starch in flour makes the basic bread cell structure; it absorbs and holds the liquid. Flour contains gluten, a protein substance, which becomes elastic and helps develop the characteristic bread shape when mixed with liquids and manipulated through stirring or kneading.
   • Examples. Whole-wheat, all-purpose, rye, self-rising, white enriched, cake flour, etc.

Sweetener
• Purpose. Gives tenderness, flavor, brownness. It tenderizes by interfering with the starch structure. It helps brown by carmelization.
   • Examples. Granulated or table sugar, brown

• Which products cost the most per serving?
• Which products cost the least per serving?
• What conclusions can 4-H’ers make about choosing breakfast cereals?

Remind 4-H’ers how wise shoppers can find out much about what they are buying by reading the label. For example, a dark-colored bread might look like whole wheat, but if the first ingredient listed is enriched white flour, there’s more white flour in the bread than whole wheat. Caramel coloring may have been added to make the bread dark.

Also, if a nutritional claim is made for a bread or cereal product the product must include a label with nutrition information. The top part of the label must inform on serving size, servings per container, calories and grams of protein, carbohydrates, and fats per serving.

The lower half lists percentages of US RDA (Recommended Daily Allowance) provided per serving for protein, vitamin A, vitamin C, thiamin, riboflavin, niacin, calcium, and iron. Information on other nutrients may be included if the manufacturer desires.

You might also ask the 4-H’ers if they have noticed the words “enriched” or “fortified” on the labels of bread and cereal products. These terms are often puzzling.

Tell them that enriched means that nutrients lost during processing are added. Most cereal and grain products lose nutrients during processing. Some products lose as many as 25 nutrients. In the 1940s, the government allowed manufacturers to return some of these nutrients to the finished product. Originally, this was done to improve meager wartime diets. The ruling was a significant step toward better health through improving the nutrients in a basic food.

The nutrients added to an enriched product are the same kinds and added in the same amounts as existed in the original grain. Original nutrients lost that are most often put back in include thiamin, niacin, riboflavin, and iron. Products in which original nutrients were lost in processing but then put back in are termed enriched.

Whole grains do not need to be enriched because they contain all the parts of the grain and all the original nutrients. Whole wheat also contains some nutrients (like the mineral zinc) not required to be added by enrichment.

Fortified means that manufacturers put more of certain nutrients into a finished product than existed in the original grain. Manufacturers also may add nutrients that did not exist in the original food at all. An example of fortification with a nutrient not naturally occurring in the food is iodine added to salt. The rationale behind fortification is that by fortifying foods with needed nutrients, diets and health may be improved without changing eating habits. Prepared breakfast cereals (especially presweetened ones) are often heavily fortified.

Some products advertise that they supply 100% of the US RDA of certain nutrients. Most nutritionists agree that such heavy fortification is unnecessary.

• It is far more healthful to eat daily nutritional needs by eating a variety of foods during the course of the day.
• Fortification and enrichment costs. The more heavily a product is fortified, the more the consumer pays.
• No food supplies 100% of all nutrients. The best guarantee of getting a nutritious diet is by eating a variety of foods.

A final activity in this experiment is to tour a local supermarket and have 4-H’ers explore all the forms and varieties of bread available. Ask them to:
• List a representative sample of the variety.
• Summarize information from the labels.

CHECK WHAT YOU LEARNED

1. What is the leavening agent used in popovers?
   a. Air and steam.
   b. Air is incorporated from beating.
   c. Eggs help hold air in the batter so it can expand when heated.

2. How does it work?
   a. The mixing and beating directions for both popovers and cream puffs are critical. They
5. Bake in deep cups for best results.
   a. Fill % full.
   b. Don’t overload or use too small a cup for baking. Too much batter in the pans will give a muffin-like texture.
   c. The deep cups will help support the popovers.
   d. Grease cups lightly for baking. Some books suggest a dusting also. Depending on what you’re serving with the popovers, dust the cups with sugar, flour, or grated Parmesan cheese.

6. Oven must be HOT.
   a. The water in the batter will quickly be changed to steam, and it is steam that makes the popovers pop!
   b. However, if the oven’s too hot, they brown before popping; when it is too cold, they start and then flop.

7. Don’t open the oven door during baking time!
   a. Set oven timer and don’t open oven door until popovers should be done.
   b. Opening the oven door causes heat to escape—then the popovers might “collapse.”

8. Check doneness. To test doneness, remove a popover to be sure the side walls are firm.

REMINDER TIP: It’s steam that makes popovers pop, but if the oven is too hot they brown before popping; when it’s too cold, they start and then flop!

Recipe

For “perfect” popovers, see the member manual.

MEETING ACTIVITIES

Daily Food Chart

Refer to Unit 1 (“Let’s Get Organized”) in this leader guide for a quick review of the food groups. Have 4-H’ers work through this activity in the order presented in the member manual. Follow the direction preceding each portion of the activity.

Personal Food Profile

Here are some questions for discussion:

• How many of your favorite foods are in each food group? Your least favorite foods?
• Are many of your favorite foods members of the same food group?
• Are many of your favorite foods members of the same food group?
• What group is it?
• What are foods that you like from this food group?
• Put a star (*) by all your favorites that are good for you nutritionally (that is, have some nutritional value). Are many of your favorite foods nutritious? What about your least favorites? Are these foods nutritious?
• What are some of the foods you need to add to your list of favorites for a well-balanced diet?

Consumer Experiment to Try

Bread and Cereal Labels

To begin this experiment have 4-H’ers collect empty bread wrappers and cereal boxes from home. (You might need to start reminding them a few weeks before this meeting.) Talk with them about factors that determine the cost of bread products. Ask them to compare and analyze the label information. They may use the lists in their member manuals to record the information.

You need not focus on all the topics which are included in the questions below. Be sure to choose questions for 4-H’ers to explore that relate to their needs and interests.

• What brand is it?
• What is the cost?
• What is the weight?
• Divide cost by weight to determine cost per ounce.

Example: Cost per ounce = cost
         weight

• What description of the products is given?
• List ingredients in order given.
• Is it fortified? Is it enriched? How do you know?
• Which product has the highest nutritional value?
• Which products contain sugar as the first ingredient?

sugar, confectioner’s or powdered sugar, honey, molasses, and corn syrup.

Fat

• Purpose. Supplies richness, tenderness, moistness, freshness. Also gives a rich, moist eating and keeping quality. Shortening and butter incorporate air in the batter during creaming—they form a structure for air expansion and even, fine cell development. Because oil does not incorporate air, the products are not interchangeable in most bread recipes.

• Examples. Shortening, oil, butter, margarine, and lard.

Liquid

• Purpose. Helps ingredients to act with each other, provides moistness, binds ingredients together. It helps dissolve many ingredients, especially sugar. During baking it is absorbed by the starch in the flour to provide the basic structure of the bread. When milk is used as the liquid, it also provides a source of protein which contributes extra structure.

Eggs

• Purpose. Provides flavor, golden color, moistness, helps bind ingredients together, adds structure, and incorporates air. The egg yolk provides some emulsification (or successful mixing of an oily or fatty substance with a liquid one).

Leavening Agent

• Purpose. Baking powder, soda and yeast produce leavening gas (carbon dioxide) to make bread products rise. They also add lightness and tenderness. Air or steam expand when heated and push the dough framework upward.

• Examples. Air, steam, and carbon dioxide. Carbon dioxide is provided through either baking powder or baking soda for quick breads and yeast in yeast breads.

Flavoring Ingredients

• Purpose. Give products their characteristic flavor and texture. Salt has a special function in yeast breads of controlling the action of the yeast.

• Examples. Fruits, nuts, spices, extracts, and salt.

PRODUCT EVALUATION

“How Do Your Muffins Measure Up?” and “Muffin Trouble Shooters” may be found in the member manual.
UNIT 3—LET’S BAKE BISCUITS

MEETING IDEAS
1. Analyze bread recipes for essential information needed for successful bread baking.
2. Distinguish between the two major quick bread preparation methods (the muffin method and the biscuit method).
3. Learn correct techniques for cutting in shortening, kneading, and rolling biscuits.
4. Prepare biscuits and a fancy biscuit or biscuit variation.

DEMONSTRATION IDEAS
1. How to knead biscuits.
2. Different things that can be used to cut biscuits besides a biscuit cutter.
3. Different ways and shapes to cut biscuits, like diamond shapes, wedge-shapes, etc.
4. How to use biscuits in a main dish recipe.
5. How to prepare a pan for baking.
6. How to cut in shortening.
7. Explain how to test a bread product for doneness.
8. Pointers for handling and manipulating ingrediants for successful bread products.

MEETING NOTES

Five Biscuit Ingredients
1. Enriched all-purpose flour is the main ingredient in biscuit making and is used to provide structure. All-purpose flour is enriched with thiamine, riboflavin, niacin, and iron to meet the nutritional standards set by the government. Enriched self-rising flours are also used for making biscuits, but they already contain leavening and salt. To substitute self-rising for all-purpose flour in biscuit recipes, simply omit the baking powder and the salt.

2. Leavening provides the action that makes dough rise. Quick breads such as biscuits and muffins depend on carbon dioxide gas for leavening. The gas forms bubbles in the dough which causes it to expand and rise. Baking soda and baking powder are the sources of carbon dioxide. When baking soda reacts with an acid in the presence of liquid, carbon dioxide is given off. Baking powder contains baking soda and an acid, so that the food does not need to be acid for the gas to be released.

3. Milk, as well as flour, provides structure. It gives additional nutritional value and starts the leavening action. Baking powder is the leavening used for sweet milk biscuits. When butter-milk is used in the biscuit recipe, both baking soda and baking powder are used. Soda is usually not used alone in baked products because an excess of soda results in a bitter-tasting product with a yellowish color.

4. Shortening contributes tenderness and flakiness.
5. Salt adds extra flavor.

Understanding Baking Information
- Almost all recipes:
  - Tell you to preheat oven.
  - Give the correct oven baking temperature.
  - State recommended baking time.
  - Specify pan size.
  - Identify method of pan preparation.

- Some recipes:
  - Describe an appropriate test for doneness.
  - Indicate if there is cooling time in the pan.
  - Provide defanning instructions.
  - State recommended cooling time.

Here is a more detailed look at understanding baking information.
1. Preheat oven, check oven temperature, baking time. To have the right amount of heat to bake the product, an oven must be preheated to the correct temperature. The baking time must also be correct. Common baking temperatures (F) include: Biscuits 450°F, Muffins 375°F-400°F, Quick Loaf Breads 350°F, and Cakes 350°F. The baking temperature must be hot enough to cause the correct amount of gas

UNIT 5—LET’S EXPLORE STEAM-LEAVENED QUICK BREADS

MEETING IDEAS
1. Review of measuring skills.
2. Identifying common measurement equivalents.
3. Preparing popovers, cream puffs, or other steam-leavened bread products.
4. Categorizing foods into the food groups.
5. Planning meals using popovers or cream puffs.
6. Comparing label information on commercial bread products.
7. Comparing the nutritional value of breakfast cereals.

DEMONSTRATION IDEAS
1. How to prepare popovers (explain how the leavening is incorporated).
2. How to test popovers for doneness.
3. How to use common measurement equivalents for ease in measuring when baking (that is, 1 pound of sugar, ½ pound of butter, etc.).
4. The variety of fillings that can be used with cream puffs and how to fill cream puffs with filling.

MEETING NOTES

Measurement Matchup (Key):

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
<th>Measuring Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>b/f</td>
<td>cup</td>
<td>Dry measuring cup</td>
</tr>
<tr>
<td>a/g</td>
<td>cup</td>
<td>Liquid measuring cup</td>
</tr>
<tr>
<td>a/e</td>
<td>cup</td>
<td>Measuring spoons</td>
</tr>
<tr>
<td>c/h</td>
<td>tablespoon</td>
<td>Measuring Method</td>
</tr>
<tr>
<td>a/d</td>
<td>cup</td>
<td>Spoon lightly or sift; level off.</td>
</tr>
<tr>
<td>c/e</td>
<td>cup</td>
<td>Pour in; level off.</td>
</tr>
<tr>
<td>a/g</td>
<td>cup</td>
<td>Pour in; read at eye level.</td>
</tr>
<tr>
<td>a/e</td>
<td>cup</td>
<td>Pack down firmly.</td>
</tr>
<tr>
<td>b/f</td>
<td>cup</td>
<td>Pour in, forming mound.</td>
</tr>
<tr>
<td>a/g</td>
<td>cup</td>
<td></td>
</tr>
</tbody>
</table>

Be sure to include the “whys” in your discussion of the current answer.

Preparation Pointers
Guidelines for Perfect Popovers
1. Preheat oven.
   a. A hot oven is needed to change water quickly to steam and make the batter rise.
   b. Popovers need bottom heat only. You’ll find that some books suggest that if an oven supplies both top and bottom heat when on “bake,” to remove the upper heating element.

2. Have all ingredients at room temperature. Through experimentation, it has been determined that eggs at room temperature reach a greater volume when beaten than cold eggs. This greater volume makes a lighter baked product.

3. Accurate measurement is critical.
   a. The proportion of ingredients in popovers is more critical than the technique of combining them.
   b. Too much liquid added makes the batter so weak it cannot hold steam when it is produced.
   c. If not enough liquid is added, there is too little liquid to make sufficient steam.
   d. Too much fat added to the batter or used to grease the baking utensil will make the batter weak. Then steam will be lost and popovers will be small.
   e. The size of eggs is important in making successful popovers. Most recipes are based on the use of large eggs.

4. Batter should have consistency of whipped cream. A good popover is a crisp hollow shell, which is tender. To achieve this, the batter is thoroughly beaten in order to develop the gluten. In this way, the steam formed in baking will be held in a larger pocket and cause the popovers to rise.
**CHECK WHAT YOU LEARNED**

Remind 4-H’ers to record their bread baking accomplishment in their record books on their Bread Baking Project Add Sheet.

Review with 4-H’ers the methods of quick bread preparation they have been using. Below is a listing of the recipes found in Meetings 1-4 grouped according to preparation method.

**PRODUCT EVALUATION**

Check with the member manual to see the criteria for evaluating quick loaf breads and how problems can be solved.

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**My Bread Baking Accomplishments**

<table>
<thead>
<tr>
<th>Product:</th>
<th>Muffin Method</th>
<th>Biscuit Method</th>
<th>Creamed Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation:</td>
<td>Basic muffins</td>
<td>Standard biscuits</td>
<td>Banana bread</td>
</tr>
<tr>
<td>Batter type:</td>
<td>(Drop batter)</td>
<td>(Soft dough)</td>
<td>(Drop batter)</td>
</tr>
<tr>
<td>Product:</td>
<td>Muffin variations</td>
<td>Drop biscuits</td>
<td></td>
</tr>
<tr>
<td>Evaluation:</td>
<td>(Drop batter)</td>
<td>(Drop batter)</td>
<td></td>
</tr>
<tr>
<td>Product:</td>
<td>Two-Corn bread</td>
<td></td>
<td>Banana bread</td>
</tr>
<tr>
<td>Evaluation:</td>
<td>(Drop batter)</td>
<td>(Drop batter)</td>
<td></td>
</tr>
</tbody>
</table>

**SUCCESSFUL BAKING**

Success in baking depends upon the following factors:

1. The accuracy with which the ingredients are measured. Common measuring problems 4-H’ers might have include:
   - a. Lifting a liquid measuring cup off the counter to eye level with an unsteady hand.
   - b. Not bending down to look at a liquid measuring cup at eye level.
   - c. Using dry measuring cup to scoop ingredient—dry ingredients should be piled lightly into the measuring cup and leveled off with a straight edge.
   - d. Using the rounded blade side of a knife to level off will result in an inaccurate measurement.
   - e. Not packing brown sugar firmly into the measuring cup—brown sugar must be pack
   - f. Not packing solid shortening tightly in measuring cup—have 4-H’ers check for air pockets and level off smoothly.

2. The manner in which ingredients are manipulated; that is, kneaded and/or mixed. Gluten is the protein portion of the flour which becomes elastic when mixed. It will form the framework for the bread product. Manipulation will help determine how much gluten is developed. Enough gluten needs to be developed so there is a good framework. Too much gluten will result in a tough product.

3. Equipment used is the same as described in the recipe. Changing utensils, bowl size, mixing equipment, or baking pans from what the recipe says will change your baking results.

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**Cooling time.** Most bread products are most easily depanned while still warm. Therefore, as a general guideline, cool only slightly in the pan before removing it. Always cool completely before storing.

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2. *Pan size.* The recipes are tested for pan sizes given. In a pan that is too small, the batter may run over the sides and the center of the bread may not get baked even though the outside is done. If the pan is too large, the batter will spread over a greater surface area and bake faster, dry out more, and have a lower volume.

3. *Pan Preparation.* Correct pan preparation will make depanning easy. One pan preparation method is to line the pan with wax paper, another is to grease the pan. This forms a coating that separates the batter from the pan. Use shortening rather than oil because oil mixes with the batter and makes the batter stick to the pan. Pan preparation directions for cakes are often to grease and flour the pan.

4. *Test for Doneness.* Appropriate tests for doneness vary with the bread product prepared. Common tests for doneness include: (1) toothpick test—toothpick inserted in center of bread product comes out clean; (2) touch test—light finger impression on the top surface springs back; (3) crust color—crust is colored appropriate to the type of bread; (4) sides of pan test—most products shrink from the sides of the baking pan. One notable exception includes unshortened cakes (angel food) and chiffon cakes which climb the sides of the pan during the baking process. (5) Knob test—for several bread products (especially loaves of yeast bread), a hollow sound when knocked or tapped lightly on top of the loaf is a successful indicator of doneness. Check specific recipe for signs of doneness appropriate to each bread product.

5. *Depanning.* Loosen sides with knife, turn upside down on cooling rack and shake loose. Cool with flat side down. This is a common direction found in recipes for depanning bread products. Look for variations with specific bread recipes.
4. Ingredients are combined as directed in the recipe. Overmixing quick breads will drastically alter the quality of the finished product. The batter or dough for most quick breads should still be lumpy; that is, mix just until dry ingredients are moistened. Overmixing will cause a tough product with large tunnels.

5. The way the bread is baked—refers to pan material, pan size, and baking time and temperature.

**FLOUR ALERT**

The amount of flour called for in many yeast bread and some quick bread recipes is often given in a range of amounts, rather than a specific amount (example, 6-7 cups, 3 1/2 to 4 cups). The amount of flour needed for optimum kneading or mixing is influenced by several environmental factors. The most notable is humidity which causes more or less flour to be absorbed by the liquid ingredients. Example: on a humid, rainy day, 4-H’ers might find it takes more flour to result in correct dough or batter consistency than on a dry day. This is another skill which 4-H’ers will find comes with experience.

**ANALYZING WHAT WENT WRONG**

Biscuits have flour for structure; fat to tenderize; salt, flour, fat, and milk for flavor; steam, air, and carbon dioxide (from the baking powder) for leavening; and milk for the liquid to add moistness.

Biscuits are very much like pie pastry except that less liquid is in pie pastry. 4-H’ers are also adding baking powder to stretch the layers further apart than the layers in pastry. This develops a lighter and fluffier product.

Knowing the purpose for each of the ingredients used in biscuits should help you analyze what the problem is when things go wrong with 4-H’ers bread products. For example, if a bread is so tender that it is falling apart, you might check to see if the 4-H’er inaccurately measured the fat (tenderizing agent) so that too much was added. Or else the 4-H’er may not have added enough flour (structural agent) or mixed sufficiently to develop a good gluten framework.

Check “How Your Biscuits Measure Up” and “Biscuit Trouble Shooters” in the member manual for additional ideas in helping 4-H’ers analyze what went wrong.

**BISCUIT MIXING METHODS**

(Refer to member manual for a description of the muffin and biscuit methods of quick bread preparation.) Have 4-H’ers discuss:

1. Differences and similarities between the two quick bread preparation methods.
2. Recipes which are prepared by each method.

**Hints for Successful Biscuits**

(Refer to member manual)

**Preparation Pointers**

Explain procedure for “cut in,” and “kneading.”

1. To cut in:
   - Thoroughly stir together flour, baking powder, and salt. (Mix well to evenly distribute the leavening.)
   - Cut shortening into flour mixture till mixture resembles coarse crumbs. (The best utensils to use are a pastry blender or a blending fork). The objective of cutting in is to break the shortening up into small, even particles and coat each particle with flour.

2. To knead:
   - Turn dough onto lightly floured surface.
   - Pat down.
   - Fold the dough over and push down with the heel of your hand, curving your fingers over the dough.
   - Give the dough a quarter turn, then fold over and press down again.

Remind 4-H’ers to cut biscuits close together. Biscuit dough can be reworked, but the more it is reworked, the tougher the dough will be.

**KEY TO BAKING LANGUAGE WORD PUZZLE**

1. Bake
2. Dry ingredients
3. Add alternately
4. Mix
5. Nutrients
6. Cream
7. Blend
8. Fold
9. Sift
10. Cut in
11. Soft dough
12. Beat
13. Drop batter
14. Fat
15. Quality

**Directions**

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

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

13. Drop batter: Bread product which drops in soft, moist mounds from a spoon. Examples include: muffins, nut breads, and drop biscuits.
14. Fat: Examples of this category of ingredients includes shortening, margarine, butter, and oil.
15. Quality: Features or characteristics of a baked product we check to determine how well it measures up to the standards we establish.
MEETING ACTIVITIES

Experiments to Try

Leavening Agent Activity

1. The baking powder added to water should have little reaction until it is heated. When heated, it should begin "fizzing" or giving off many tiny bubbles. These are carbon dioxide, the leavening agent. Thus, baking powder must be moistened and heated in order for it to react and give off carbon dioxide. A minimal reaction may occur initially when baking powder is mixed with water.

2. The baking soda should have no reaction when mixed with room temperature water. When vinegar is added, it should produce a strong reaction, giving off lots of carbon dioxide gas bubbles.

3. Baking soda plus liquid ingredients plus an acid ingredient (in this case vinegar) results in a reaction and carbon dioxide given off.

4. Baking powder is made of baking soda plus acid salts; therefore, an acid ingredient is not needed for baking powder to react.

5. However, baking powder does need heat to cause a reaction. Therefore, baking powder (baking soda plus acid salts) plus liquid ingredients plus heat results in a reaction.

6. Conclusions: (1) 4-H’ers should conclude that if a recipe calls for baking soda, it must also call for an acid ingredient in order for the leavening agent to work properly. (2) Ask 4-H’ers to list some acid ingredients commonly used in quick bread recipes, such as bananas, apples, and other fruit; vegetables, lemon juice, cream of tartar, chocolate, sour cream, and buttermilk. (3) If a recipe does not have an acid ingredient, baking powder is the chemical leaveners used because it contains acid salts plus baking soda for a successful reaction and leavening effect.

Bread Storage

1. Display each ½ of the bread next to each other, identifying the storage method for each.

2. Have 4-H’ers compare anc ont contrast differences in quality of the three bread product portions (Use the “How Do Your Quick Loaf Breads Measure Up?” evaluation in the member manual for evaluation criteria and discussion guidelines if you like.)

3. Have 4-H’ers draw conclusions about the best storage method for short-term storage (air tight, vapor-proof material, and room temperature).

4. Have 4-H’ers make predictions as to when each type of storage method in this experiment would be appropriate: (1) Short-term storage—room temperature; (2) Long-term storage—freezer; (3) Short-term storage in extremely humid conditions—refrigerator. (Note: normally refrigerator has a staling effect on bread products).

Refer to Meeting Notes, “Bread Storage,” for additional discussion ideas regarding this experiment.

Experiment could be varied by using different storage materials and comparing the differences in bread quality based on storage materials.

Baking Language Word Puzzle

For an extra activity, try the Baking Language Word Puzzle. Here are the answers. A filled-in puzzle follows:

1. Bake: To cook by dry heat in an oven.
2. Dry ingredients: Ingredients in a recipe which are dry, such as baking powder, flour, salt.
3. Add alternately: When a recipe gives this preparation direction, do this—add ½ of the dry ingredient, then ½ of the milk, another ½ of the dry ingredient, the rest of the milk, and the rest of the dry ingredient. Mix after each portion is added.
4. Mix: To combine ingredients until evenly distributed. Not as vigorous as beating.
5. Nutrients: Substances of which food is made;

Recipes

The recipes for standard biscuits, drop biscuits, and flavored biscuits may be found in the member manual.

MEETING ACTIVITIES

Experiment to Try

Effect of Kneading

Divide 4-H’ers into three groups to prepare each part of the experiment described in member manual. Be sure that when biscuits are placed on baking sheet, you can recall which biscuits belonged to which portion of dough. Discuss results:

1. The biscuits made from Part 2—mixed and kneaded about 20 times—should have the best quality.
2. Underkneaded biscuits might not hold their shape as well during baking.
3. Overkneaded biscuits are generally tough and smaller in size.
4. Use the “How Do Your Biscuits Measure Up?” evaluation in the member manual to evaluate and compare the quality of the three groups of biscuits.

CHECK WHAT YOU LEARNED

Preparation Techniques

Describe the following three biscuit preparation techniques.

1. What “cut in” shortening should look like.
   a. The recipe section refers to mixture resembling coarse crumbs or meal.
   b. Shortening particles should be divided evenly throughout mixture. This gives flakiness to biscuits.
   c. To “cut in” see “Preparation Pointers.”

2. How to knead biscuits.
   a. To knead, see “Preparation Pointers.”
   b. Knead gently to combine ingredients thoroughly and also to help keep biscuits light and fluffy.

3. How long to knead biscuits.
   a. Biscuits are a quick bread, and quick breads are only handled a short amount of time.
   In this way, the gluten development will be minimal and toughness will be avoided.
   b. Quick breads are kneaded a maximum of 20-25 times.
   c. Overkneading biscuits is like overmixing muffins. The results are tough, heavy, small biscuits.

PRODUCT EVALUATION

“How Do Your Biscuits Measure Up?” and “Biscuit Troubleshooters” may be found in the member manual.
UNIT 4 — LET’S PREPARE QUICK LOAF BREADS

MEETING IDEAS
1. Describe common cooking or baking terms.
2. Understand and practice principles of proper bread storage.
3. Describe how leavening agents work.
4. Distinguish between baking powder and baking soda.
5. Prepare quick breads utilizing either the muffin or creamed method of quick bread preparation.

DEMONSTRATION IDEAS
1. Difference in stirring, mixing, beating, folding, and creaming.
2. How to wrap bread correctly for storage.
3. How to prepare a quick bread with the conventional or creamed method of quick bread preparation.
4. How to prepare corn bread or another quick bread recipe with the muffin method of quick bread preparation.
5. How to chop nuts.
6. What information is provided on bread wrapper labels and how to analyze that information.

MEETING NOTES
Bread Storage
There has not been enough research on mold to fully understand the extent it has on our bodies. Some substances produced by mold may be harmful. Therefore, do not trim mold from bread and eat the rest of the bread.

Here are two ways to slow the growth of mold on bread:
1. Keep it cool. Freezing will slow staling and mold growth, but refrigerating bread makes it stale faster.

If you plan to use bread quickly, keep it at room temperature. But if bread may be around long enough to mold, store it in the freezer and just take out a little at a time. Frozen bread will keep its freshness for up to 8 months. After bread is frozen and thawed, it will turn stale quickly.

Bread stored in the refrigerator will not mold quickly, but it will get stale. You may have to freshen it by toasting it or by adding a few drops of water, wrapping it in foil, and heating in a 350°F oven for a few minutes.

The “drug-store” wrap is one method for wrapping bread for storage. Place the loaf in the center of the wrapping material. Bring the two ends of wrapping up above the bread, fold together repeatedly as you fold down to the loaf. Repeat until the fold is lying flat against the loaf. Fold the ends in also.

2. Select breads which contain either calcium propionate or sodium propionate. These are food additives that will retard mold growth and make bread last longer. These additives are present in commercial baking products; they are not available for home baking.

Note: All foods should be packaged in moisture-vapor-proof materials before freezing. Storage time will vary with freezer temperature. What follows are storage times for popular bread products. They are approximate. In order to be sure food is satisfactory, inspect for rancidity and taste.
a. Bread. Wrap and store at room temperature or freeze. Freezer storage time: 6-8 months.
b. Wheat germ. Refrigerate or freeze in air-tight container, unless manufacturer advises differently. Storage time: 5-6 months.
d. Whole wheat flour. Store in air-tight container in refrigerator or freezer. Storage time: 3 months.

Baking Terms
Are you familiar with these baking terms? Have 4-H’ers read over the list of cooking terms in the member manual before the meeting. (This could possibly be an assignment from the previous meeting.)

- Discuss terms.
- Have 4-H’ers identify a bread or food product for which they would need to use this cooking or baking procedure or term.
- Have 4-H’ers identify a cooking utensil which they would use with this cooking or baking procedure.
- Look for more cooking terms. Have 4-H’ers bring cookbooks or share some of your own. Look for unusual baking procedures or terms 4-H’ers may not understand. (Use your discretion on baking terms and/or procedures chosen are not too difficult for beginning project members.)

Neatness Counts
The checklist in the member manual could be used as a discussion starter in kitchen safety and cleanup. Stress that most of these concepts are ideas 4-H’ers knew already, but we all are not consistent in practicing them. It might be beneficial for 4-H’ers to prioritize this list. As a group decide which ideas are most important to follow and need to be practiced consistently. The discussion should focus on the “why” behind each of these ideas. 4-H’ers could be asked to add other “neatness tips” of their own to the list.

Cremated Mixing Method
Many quick loaf breads and most types of cake use this method. The fat and sugar are creamed together and liquids and dry ingredients are added later.

How Leavening Agents Work
1. Air is usually added or incorporated into a batter or dough through the bread mixing technique. Creaming, beating, and whipping are all mixing techniques which add air to the bread mixture. After air has been incorporated in a mixture, folding is the mixing technique often followed for combining other ingredients after air has been incorporated into a mixture.

2. Steam results from liquid ingredients, which have been added to a batter during mixing, producing steam during baking. Pour batters are the best example of this type of leavener. Many rely, at least partially, on steam as a leavening agent. Pancakes, cakes, and popovers are common examples.

3. Carbon dioxide gas is formed in three ways.
   a. Baking soda. Bread product recipes calling for baking soda contain an acid ingredient of some type for the baking soda to react with. In this way, carbon dioxide is given off, which results in the gas bubbles having a leavening effect or pushing the batter or dough upward. Common examples of acid ingredients used in bread recipes include apples, bananas, and other fruits; vegetables, such as zucchini; cream of tartar; chocolate; sour cream; and buttermilk.
   b. Baking powder. In recipes where there is no acid ingredient present, baking powder is used. It contains baking soda and acid salts. (Use a box of baking soda and a can of baking powder to illustrate the differences. Read the ingredients of each to 4-H’ers.) Sometimes, both are called for in a recipe because there is not enough acid in the recipe ingredients for leavening. Therefore, baking soda is added to react with the acid ingredients present and baking powder is added to provide sufficient leavening action for the bread product being prepared.
   c. Yeast. This one-celled organism grows, multiplies, and gives off carbon dioxide gas.

Preparation Pointers
Compare the differences in nutritional information among the different recipes in this section. Ask 4-H’ers to suggest reasons for the nutritional differences in each recipe. What ingredients are contributing certain nutrients?

Recipes
The recipes for banana-nut loaf and two-corn bread may be found in the member manual.