

The “APPLY”

This section of the Experiential Learning Model promotes the life skills learned in the bread-making process that will improve the youth’s ability in other similar situations. Ask such questions as:

- “What would the youth do differently if he or she had to repeat the same process?”

SUMMARY:

Bread-making can be fun, but more than that it gives the youth a hands-on understanding of the process while learning its relationships to other subjects such as chemistry, biology, math and geography as well as nutrition. It also helps the youth to understand the importance of wheat in our daily lives.

References:

- Kansas Wheat Commission, Kansas 4-H Foundation. (1995). Wheat from field to table. *Kansas State University Department of Communications.*
- Pfeiffer, J.W. & J. E. Jones. (1972- 1985) Experiential Learning Model. *The Reference Guide to Handbooks and Annuals. Vol. 1-10*
- Dragonwagon, C. (1989) This is the Bread I baked for Ned. *MacMillan.*
- TomieDePaola, G. P. (1989). Tony’s Bread. An Italian Folktale. *Putman & Sons.*
- Goldstein, B. (1992) What’s on the Menu? Food Poems. *Ed Viking.*

To view the video “Wheat from Field to Table” Kansas Wheat Commission (1995), call Southern Area Extension Office to check out video (702) 257-5538.

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BREAD-MAKING MADE EASY A Project Leader’s Guide to Bread Making

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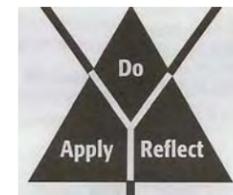
Introduction:

Home bread-making is fast becoming a lost art. Modern day technology (i.e., the electronic bread machine) has replaced the fun of mixing and kneading as well as the measurement, weight, physical activity and the other life skills such as communication, critical thinking and decision-making that go into bread-making. Besides these, youth will find that some of the processes included in bread-making can be integrated into other school subject units such as: social science, geography, math, nutrition, chemistry and/or biology.

This fact sheet promotes adult-youth partnerships as adult leaders share some of their bread-making skills with youth. Youth groups will enjoy the fun and the skills that will last them a life-time.

Learning Objectives:

All project leaders should be familiar with the Experiential Learning Model that allows the learner to



experience the activity, “DO” to describe and discuss the most important part of their experiences with others in the group, “REFLECT” and then “APPLY,” share how they would use the experiences in their daily life (Pfeiffer and Jones, 1972-1985). The learning objectives for the bread-making experience allow youth:

1. To learn about wheat from the fields to the table, and increase their awareness of wheat’s role in the world’s food supply along with its value in diet.

2. To learn and increase their skills in the basics of measurements, chemical reactions and other scientific and mathematical activities that go into bread-making.
3. To gain the knowledge and fun that can be a part of the process of bread-making.

Age Appropriateness: 10-13 years old

Life Skills:

1. Youth will learn how to work as a team
2. Youth will learn how to communicate in a group setting
3. Youth will learn the basics of decision-making

Educational Objectives:

1. To expose youth to the knowledge and scientific concepts in social science, geography, math, nutrition, chemistry and biology.
2. To develop science skills of observing, comparing/measuring and experiencing.
3. To help youth develop life skills in planning/organizing and problem-solving.

Time:

Preparation: Varies
Activity: 4-5 hours

What’s needed?

- Measuring cups



- Bowls - one for each 4-H bread-making group
- Bowl scraper or knife
- Water pitchers
- Aluminum foil
- Towels
- Kneading board or clean table top
- Permanent markers
- Bread-making pan
- Wire rack
- Whole wheat and/or white general purpose wheat flour
- Other wheat products (optional)
- Packaged dried yeast (1 pack for every 3½ cups of flour)
- Sugar (1 tablespoon to every 3½ cups of flour)
- Vegetable oil of choice (1 tablespoon to every 3½ cups of flour)
- Salt (2 teaspoons to every 3½ cups of flour)
- Warm water (1¼ cups for every 3½ cups of flour)

Pre-preparation:

1. Baking facility, with an oven calibrated to at least 400 degrees F.
2. Form groups of no more than three individuals per group, and at least one adult volunteer per every 10 youth.
3. Thorough hand-washing.
4. Volunteer/project leader supervision.

What's next?

1. The activity will take about four hours from start (mixing and baking) to finish (tasting). To make good use of the time while the dough is rising, the 4-H leader can give ideas on how to do a demonstration on bread-making, and how to prepare for the County Fair bread-making exhibit (approximately 1½ hour).
2. Discuss the importance of wheat and its relevance in the world. Make linkages to social science, geography, math, nutrition, chemistry and/or biology.
3. View the video "Wheat from Field to Table," Kansas Wheat Commission (1995). (To acquire video, refer to last page.)
4. Have individuals mark their names on supplies including bread pans.
5. Allow youth to measure the various ingredients.

The Experience "DO"

Activity 1:

If you are planning to make wheat bread, combine whole wheat and white all purpose wheat flour in a 50/50 mix.

For this bread-making activity, you will need 3½ cups of either the 50/50 white/whole wheat flour if you plan to make wheat bread, or a 3½ cups of white flour if you plan to make white flour bread.

- You will need to use packaged dried yeast (1 pack for every 3½ cups of flour).
- Measure sugar: 2 sets of 1 tablespoon.
- Measure vegetable oil of choice: 1 tablespoon.
- Measure salt: 2 teaspoons
- Measure warm water: 1 cup plus an additional ¼ cup for yeast preparation.

6. Let each group prepare yeast for the dough mix by adding water to the yeast.
7. Mix in a bowl: yeast and sugar and ¼ cup of flour thoroughly. Then add the ¼ cup of warm water (105 – 110 F). Allow yeast to activate for 15 minutes.
8. Discuss wheat and the other areas where wheat is used.
9. Discuss Activity 1 by allowing 4-H youth to share their experiences from the activity.

Activity 2: Mixing and kneading the dough:

1. Add all the additional ingredients, (sugar, salt, vegetable oil, flour and the additional warm water in the bowl with the prepared yeast).



2. Mix well. Slowly add enough of the remaining flour until a soft dough ball forms.



3. Knead the dough with just enough flour to make it soft (a little sticky). Do not add too much flour as this will make the final bread product too dry.



4. Fold and press the dough continuously for about 6 to 10 minutes, then cover the bowl container with a piece of plastic wrap or aluminum foil. The plastic wrap is preferred as one can see the dough as it rises. Allow dough to rise for about 45 to 60 minutes.



5. After the dough has risen, remove from container bowl and again knead, by folding then kneading for another 4-6 minutes.



6. Prepare baking pan by slightly greasing it to prevent the final product from sticking to the pan after baking.

7. Cut dough to size and place in baking pan. Allow dough to rise to twice its size in the pan before putting pan into oven



8. Preheat oven to 350 to 375 degrees. Then place baking pan with dough in oven and allow to bake for about 15 to 18 minutes.

9. Remove pan from oven and allow bread to cool on a wire rack .



10. Serve as desired.

The "REFLECTION":

Here are some simple questions for discussions as the 4-H leader describes and discusses the parts of the process. The answers can help in other scientific subjects. The questions will also promote discussion and critical thinking.

What do you know about one mini-loaf* of bread?

(Leader needs to ask each nutritional fact (i.e., how many calories in a mini-loaf of bread.)

Answer:

Calories: 654
 Protein 20.4 g, 12% of calories
 Carbohydrates: 131 g, 78% of calories
 Fat: 6.98 g, 9% of calories
 Dietary Fiber: 12.6g

* One mini-loaf contains eight 1-ounce servings

What do you know about yeast?

Answer: It is a single cell fungus that when combined with sugar (C₆H₁₂O₆) produces alcohol (C₂H₅OH) and carbon dioxide (CO₂).

What do you know about gluten?

Answer: It is a property of wheat that causes the stickiness when flour is mixed with water.

What do you know about the dough as it rises?

Answer: Dough rises twice its original size when put in a warm place because the yeast is very active when it is in warm environment.

Wheat Facts:

- Wheat is a grass whose seeds belong to the cereal grain group, which provides the largest serving on the food guide pyramid.
- Wheat contains gluten, the basic structure for bread-making.
- There are six classes of wheat grown in the United States: hard red winter wheat, high in proteins and strong in gluten; hard red spring, high in protein; soft red winter, lower in protein;
- Durum, good source for spaghetti and macaroni; hard white, good for noodles, and soft white, great for crackers and noodles.
- Wheat is used for cattle, poultry and other livestock feed.
- The kernel of wheat is the storehouse of essential nutrients in a human diet. It is a good source of complex carbohydrates and moderate protein source.
- Wheat is a source of daily dietary fiber.
- Kansas is the number one in flour milling and gluten production.
- One 60-pound bushel provides 42 pounds of flour, enough for about 70 one-pound loaves of white bread.