



You're the Chef

Note to Project Helper



Congratulations on having a young person ask you to be his or her helper. Your role as a project helper is very important to the young person's total educational experience. Not only will you provide encouragement and recognition; you will also be the key person with whom the young person shares each of the experiences in this 4-H activity guide.

The Foods curriculum series is designed to help youth have fun in the kitchen as they learn basic food preparation skills, prepare different foods, do fun experiments, and go on fact-finding missions. These educational materials have been created with a focus on healthy food selection, smart food purchasing, food safety and science, food preparation, food preservation, and careers in the food industry. The design emphasizes teaching young people the importance of balance with their food choices as they are building healthy food habits that will carry them to adulthood.

Food is meant to be enjoyed, but it is also important to find a balance of regularly making healthy choices and occasionally indulging in a treat. The recipes that are included were developed with this concept in mind. Youth learn to prepare recipes that encourage increased fruit, vegetable, low-fat dairy, lean protein, and whole grain consumption. They will also be challenged to increase the nutritional value of recipes by making healthy ingredient choices.

Five pieces are available in the Foods curriculum. There are four activity guides—Fantastic Foods, Tasty Tidbits, You're the Chef, and Foodworks. These guides have been designed to be developmentally appropriate for grades 3–4, 5–6, 7–9, and 10–12, respectively, but may be used by youth in any grade based on their skills and expertise. The fifth piece, the Project Helper Guide, provides you with additional background and tips on helping youth through the activities in their guide. The Project Helper Guide is available online as a free downloadable item.

Contents

Introduction to Level C

<i>The Experiential Learning Model</i>	4
<i>Now, You're the Chef!</i>	5
Slow Them Down	6
Spoilers or Helpers?	8
Emulsions	10
Keep Track	12
Fit is In!	14
Get the Facts on Fads	16
Lean On!	18
Getting a Meal Together	20
Knead Some Dough	22
Breadsticks for a Crowd	24
Whole Meal Deal	26
Do a Stir-fry	28
Crazy Casseroles	30
Slow, Moist, and Tender	32
Don't Throw it Out!	34
A Five-pound Deal	36
Intro to Canning	38
Zesty Salsa	40
Jiffy Jam	42
Pucker Up Pickle Relish	44
Food Photojournalism	46
Food Stylist	48
Recipe Developer	50
Glossary	52



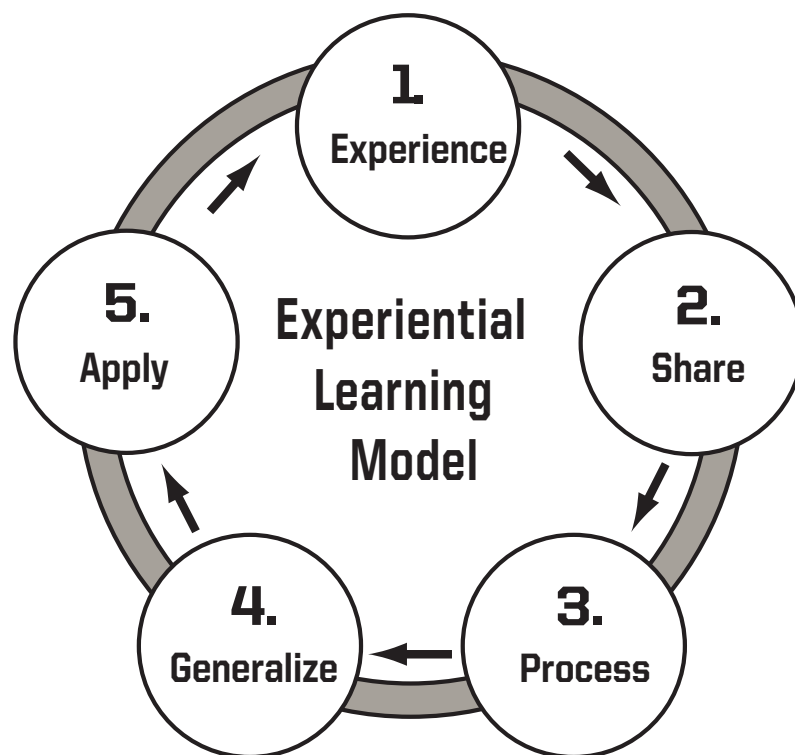
The Experiential Learning Model

Acknowledgments

The Foods curriculum series activity guides were written by **Bethany Daugherty, MS, RDN, LD** and **Angie Frost, MS, RD, LD**

Project coordination was managed by **Renée K. McKee**, Assistant Director - Purdue Extension, State 4-H Program Leader

Editor: **Nancy Alexander**, Cicero, Indiana



Pfeiffer, J.W., & Jones, J.E., "Reference Guide to Handbooks and Annuals"
© 1983 John Wiley & Sons, Inc.
Reprinted with permission of John Wiley & Sons, Inc.

The experiential model and its five steps are used in each activity in this guide as a means to help youth gain the most from the learning experiences.

The five steps encourage youth to try to do the activity before being told or shown how (experience). As the helper, you will want to help the youth describe what they experience and their reaction (share). You can use the questions listed at the end of the activity to help the youth:

Discuss what was most important about what they did (process);

- Relate the life skill practiced to their own everyday experiences (generalize); and
- Share how they will use the life skill and project skill in other parts of their lives (apply).



Now, You're the Chef!

Are you ready?

Are you ready to do fun experiments, prepare delicious recipes, and go on fact-finding missions? That's what You're the Chef is about. You'll have fun learning about different ingredients in food, healthy eating, and food safety.

Your project guide walks you through a variety of activities. As you do the activities, be sure to write the things you've learned on the record sheet in the back of the manual.

Your project helper

Your project helper is important to your having a good experience learning about foods. This person might be your project leader or advisor, neighbor, family member, friend, or anyone willing to work with you to complete your activities. Involve your helper as you work with each activity and answer the questions. This adult is there to back you up and help you be successful.

Be sure to ask an adult before turning on the stove to cook or bake.

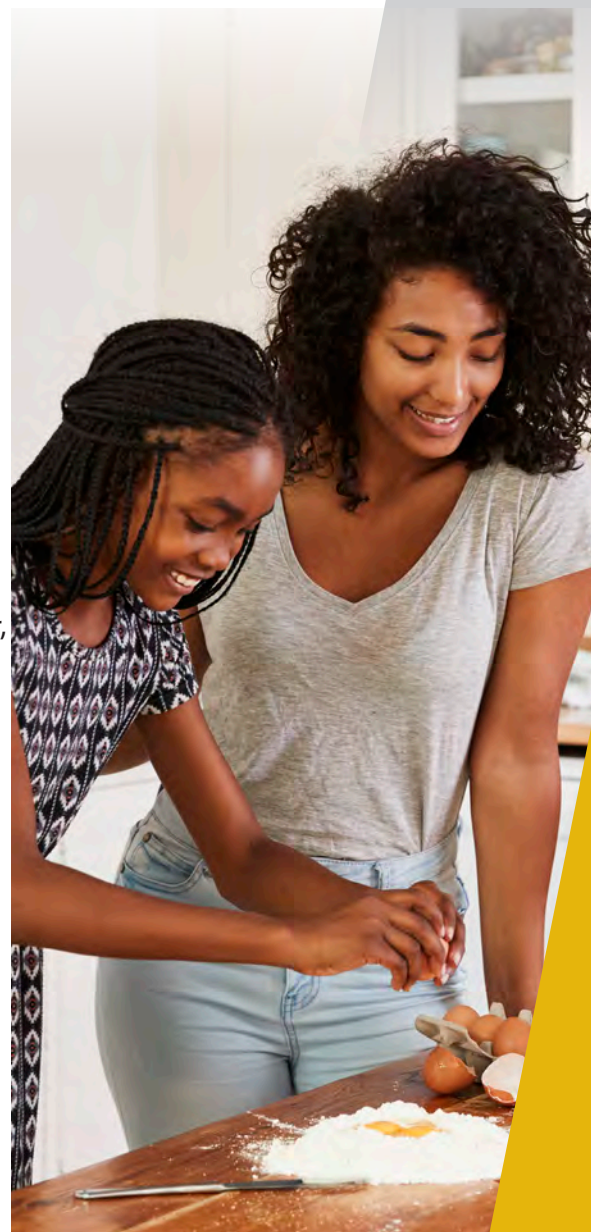
Interactive Demonstrations

An interactive demonstration is a fun way to share what you have learned with others. The key is getting your audience involved in doing what you are doing, not just showing them. You can give an interactive demonstration at a 4-H club meeting or anywhere a lot of people gather, like your school or a county or state fair.

You can choose almost any topic you find in this Fantastic Foods project guide or another topic of interest to you. Here are some questions to ask when choosing a topic:

- Is it something that can be done in three to five minutes?
- Is it something other people might like to learn about?
- Is there something hands-on for the audience to do?
- Can the supplies for the hands-on activity be used over and over again, or do they have to be replaced every time? Having to replace them adds to the cost.

Your demonstration should last about three to five minutes, and you need to be able to do it over and over again with different people. You should have a conversation with the people you are demonstrating to. Your goal is to involve the audience. You can do this by having them do what you are doing, play a game, answer questions, or do a hands-on activity. Some examples: how to use a measuring cup or measuring spoon, or how to find things on a Nutrition Facts label.



Slow Them Down

PROJECT SKILL:

Demonstrating the action of preservatives

LIFE SKILL:

Using scientific methods

TIME: 30-45 minutes (not including waiting time of 2 days)

SUPPLIES

- Table salt
- White vinegar
- Three small clear glasses or plastic cups
- One chicken bouillon cube
- Liquid measuring cup
- Measuring spoons
- Tape for labeling
- Marker or pen

Additives are substances added to foods in small amounts. Preservatives are specific additives that help prevent decay, spoilage, and discoloration. Two different kinds of preservatives are used in foods—antimicrobial agents and antioxidants.

Antimicrobial agents prevent or slow down the growth of molds, bacteria, and yeasts. Antioxidants prevent fats and oils from spoiling and stop the browning reaction that occurs in some fruits.

The very first preservatives were salt and sugar. Later, people used vinegar as a preservative. Try this experiment to test the effect of salt and vinegar on bacterial growth.

1. Measure 1 cup of hot water directly from the faucet, and dissolve the bouillon cube in it.
2. Use the tape and marker or pen to label the plastic cups or glasses "salt," "control," and "vinegar."
3. Pour 1/3 cup of the bouillon into each plastic or glass cup.
4. Measure 1 teaspoon of salt into the cup labeled "salt." Measure 1 teaspoon of vinegar into the cup labeled "vinegar." Do not add anything to the cup labeled "control," because you will compare the action of the ingredients in the other cups to this cup.
5. Place the three cups in a warm place for two days. After two days, compare what you see.





KITCHEN TALK

1. When did you first notice a change in the solutions the three cups contained?

2. Which solution became the cloudiest?

3. Why did the cups containing the preservatives never become as cloudy as the control?

4. How can you use what you learned to design another science experiment with food?

FRUITY EXPERIMENT

Try this experiment to learn more about antioxidants.

Supplies

- Kiwi fruit
- Apple
- Knife
- Scissors
- New sponge

1. Peel the skin off the kiwi, and cut a 1/2-inch slice of the fruit.
2. Cut a piece of sponge to match the size of the kiwi slice.
3. Cut an apple in half. Put the slice of kiwi on one apple half and put the sponge on the other half. Set them aside for one hour.
4. Lift the sponge, lift the kiwi, and look at the difference.

The kiwi contains vitamin C, an antioxidant that interferes with the browning reaction.

EXTRA BITE



Bacteria die in very concentrated sugar solutions because the excess sugar dehydrates them. The water in bacteria is drawn to the sugar solution through osmosis, making the bacteria dry out and die. See if you can find a high enough concentration of sugar in the bouillon solution to have a preservative effect. Use a control and two or three other cups with different amounts of sugar in the solution. How many teaspoons of sugar did you use?



Spoilers or Helpers?

PROJECT SKILL:

Understanding the action of yeast

LIFE SKILL:

Processing information

TIME: 15-30 minutes (not including waiting time of 1 week)

SUPPLIES

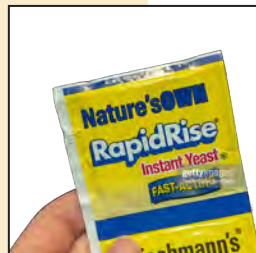
- Banana
- Packet of dry yeast
- Three resealable plastic bags
- Set of measuring teaspoons
- Marker

Microbes are tiny microorganisms. They include molds, bacteria, and yeast. All of these can grow on food and usually cause the food to spoil. But cheese and yogurt are two foods that are produced by the action of bacteria.

Yeasts are single-celled microorganisms that need food and warm temperatures to grow and multiply. They are actually distant cousins of mushrooms. You can buy dry yeast that is inactive and can stay that way for a long time. Yeast needs to be activated when you want to use it to make bread. It is activated when mixed with the other ingredients and warm water. When making bread, the yeast is a helper because it causes the bread to rise.

Have you ever seen the spoiler side of yeast? It decomposes food, or breaks it down.

1. Peel the banana, and cut three slices. Feel free to eat the rest!
2. Place a banana slice in each resealable plastic bag. Seal one bag, and label it "NY" for no yeast.
3. Measure 1/2 teaspoon of yeast onto one of the banana slices. Seal the bag. Label it "Y" for yeast. Put both bags in a warm place where they can sit undisturbed for one week.
4. Measure 1/2 teaspoon of yeast onto the last banana slice. Seal the bag. Label this bag "YR" for yeast refrigerator, and place it in the refrigerator.
5. Check the bags periodically. After one week, take the YR bag out of the refrigerator and compare the contents of the three bags.





KITCHEN TALK

1. Which banana slice showed the fastest and most decomposition?

2. How do the yeast and no-yeast slices differ from each other?

3. If yeast is not activated in bread making, how will the final product be affected?

4. What did you learn about yeast that you could share the next time you are making bread with someone?

Food Fact

When yeast comes into contact with glucose, the process of fermentation begins immediately. One source of glucose is corn syrup. Other sources are sucrose and starch, but they are slower because they have to be broken down into simpler sugars before fermentation can occur.



EXTRA BITE



Try repeating this experiment using other foods for the yeast to feed on. Remember that yeasts especially like sugars and starchy foods.

Dead or alive?

Packages of dry yeast can go bad or die. This means they cannot become activated and are ineffective in baking bread. To test yeast to see if it's alive, mix some of it into 1/4 cup of lukewarm water mixed with 1/4 teaspoon of sugar. The yeast mixture should begin to bubble within five to 10 minutes. If it doesn't, the yeast is dead and will not cause bread dough to rise.

Dry yeast should be stored in an airtight container, but it does not need to be refrigerated.

Emulsions

PROJECT SKILL:

Making an emulsion

LIFE SKILL:

Using scientific methods

TIME: 30-40 minutes

SUPPLIES

- 6 T balsamic vinegar, or vinegar of your choice (red wine, white wine, cider)
- 4-1/2 t Dijon mustard
- 1/4 t salt
- 1/4 t freshly ground black pepper
- 1/3 c extra virgin olive oil or vegetable oil of your choice (canola, sunflower, etc.)
- Measuring cups/spoons
- Clean bowl
- Whisk

Have you ever tried to mix water with oil? They don't mix! You can see oil droplets in the water. As the two settle, they separate into oil on the top and water on the bottom. When two liquids do mix, the mixture is called an emulsion. Oil and water is the most common food emulsion. To keep the oil and water from separating, food manufacturers add a stabilizer, or emulsifier. Two common emulsifiers are egg yolk and Dijon mustard. Other stabilizers include starches, powders, or gums.

Some of the most recognized emulsions that are easy to make at home include vinaigrette-style dressings, mayonnaise, and hollandaise sauce. The emulsifier in a vinaigrette is Dijon mustard, while the emulsifier in mayonnaise and hollandaise sauce is egg yolk. We are going to start with the easiest of the emulsions and make homemade vinaigrette dressing that you can add to your favorite salad.

For this experiment, we are going to make two separate recipes. For the first recipe (control), follow these directions exactly.

1. Measure the vinegar, mustard, salt, and pepper into the bowl.
2. Whisk these ingredients until they are blended.
3. Begin adding the oil in a very slow, steady stream while whisking very quickly.
4. Continue whisking until all the oil has been added to the dressing and it is emulsified and thickened.

Now make the recipe a second time (variable), but add all the ingredients to your bowl at once, including the oil, and try to whisk them into an emulsion.

	Table	Texture	Appearance
Control (Oil added slowly)			
Variable (Oil added with other ingredients)			

Homemade mayonnaise Nutrition Facts label is for the heated mayonnaise recipe.

Homemade vinaigrette dressing

Number of Servings: 12
(16.26 g per serving)
Weight: 195.17 g

Nutrition Facts

Serving Size (16g)
Servings Per Container

Amount Per Serving

Calories 70 Calories from Fat 60

% Daily Value*

Total Fat 6g 9%

Saturated Fat 1g 5%

Trans Fat 0g

Cholesterol 0mg 0%

Sodium 95mg 4%

Total Carbohydrate 2g 1%

Dietary Fiber 0g 0%

Sugars 1g

Protein 0g

Vitamin A 0% • Vitamin C 0%

Calcium 0% • Iron 0%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Homemade mayonnaise

Number of Servings: 18
(14.8 g per serving)
Weight: 267.76 g

Nutrition Facts

Serving Size (15g)
Servings Per Container

Amount Per Serving

Calories 110 Calories from Fat 110

% Daily Value*

Total Fat 12g 18%

Saturated Fat 1g 5%

Trans Fat 0g

Cholesterol 10mg 3%

Sodium 15mg 1%

Total Carbohydrate 0g 0%

Dietary Fiber 0g 0%

Sugars 0g

Protein 0g

Vitamin A 0% • Vitamin C 0%

Calcium 0% • Iron 0%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4



Extension - 4-H Youth
Development



An Equal Access/Equal Opportunity University

purdue.edu/extension

November 2021

Find out more at
THE EDUCATION STORE
edustore.purdue.edu

