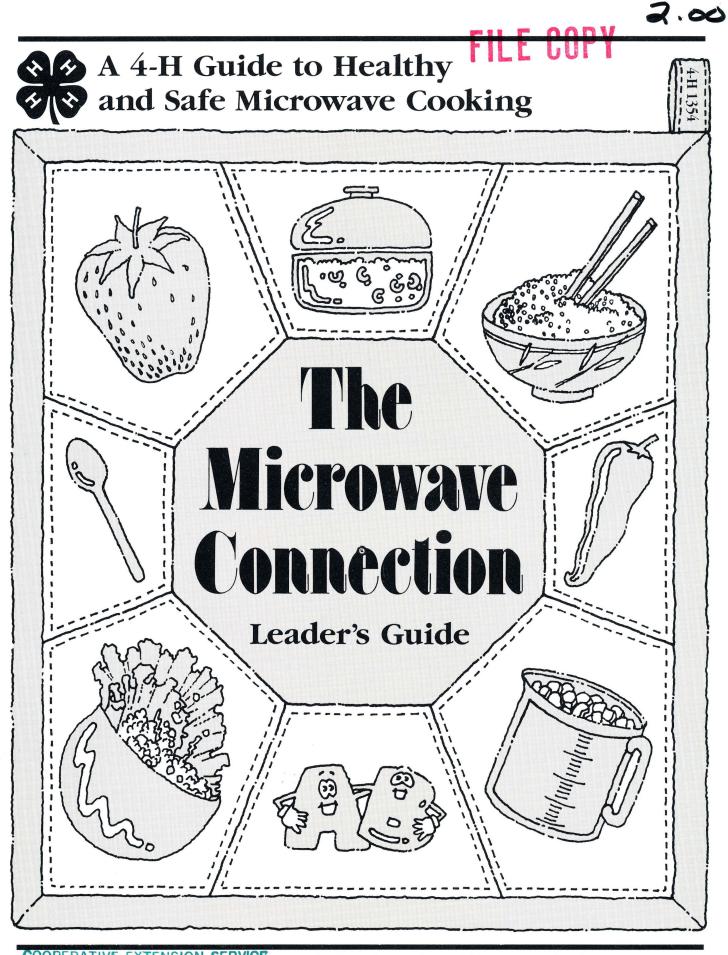
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The Microwave Connection – Leader's Guide Michigan State University Cooperative Extension Service 4-H Club Bulletin Deanna House, Patricia A. Hammerschmidt, Ruth Eggert Linnemann, Amy Riley Issued May 1992 26 pages

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Acknowledgments

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Welcome to the Microwave Connection!

Welcome to the wonderful world of 4-H microwave cooking. As a 4-H leader, you play a very important part in helping young people connect positive experiences with life in today's busy world. This leader's guide will help you put **The Microwave Connection** 4-H project into action.

Microwave cooking may be as new to you as it is to your 4-H members. You can learn together to connect this microwave project to delicious, nutritious food, safe cooking practices and economical food buying habits.

Traditionally, 4-H'ers have absorbed ideas quickly when given the chance to actually participate in hands-on experiences. This seems to be especially true in microwave cooking because youths so easily adapt to new methods and ideas.

This microwave project is designed to capture the natural enthusiasm of 4-H'ers as they learn and share the joy of cooking. It is written for 9- to 12-year-olds, but the material can easily be used by any beginning-level microwave cook.

The learning experiences in **The Microwave Connection Member's Guide** are written in sequential order starting with the most basic information and progressing to more involved concepts. Therefore, it is strongly suggested that you begin with Meeting 1, "Let's Get Started and Snacks in a Snap," and complete the remaining five meeting lessons in order.

The recipes included in the Member's Guide were selected because they involve basic microwave and nutrition principles, they are easy to prepare and they appeal to a youth audience. Several of the recipes are for individual servings; this allows for maximum hands-on experience. Other recipes are intended for group preparation.

It is important to read and discuss **all** the information in the Member's Guide with your 4-H'ers and not just prepare the recipes. Additional facts on microwave cooking and basic nutrition principles are included in this Leader's Guide so that you have all the necessary information at your fingertips.

Extra recipes are included in this Leader's Guide (pages 23-26) so that you have the flexibility to organize meetings to meet the specific needs of you and your 4-H members. Encourage their participation in creatively developing these ideas into a microwave 4-H project that makes a positive difference in their lives. And most of all, have fun while learning!

How This Leader's Guide Is Organized

Each lesson includes:

- Key Connecting Ideas—Lists the main ideas of the lesson.
- Additional Information— Provides additional information on microwave and nutrition concepts.
- Getting Started—Gives suggestions for ways to make members feel welcome and enthusiastic about the meeting.
- **Connecting Questions**—Suggests an activity that can be used to learn and share information at the meeting.
- Microwave Cooking in Action— Provides hints for organizing a time plan for the meeting with the understanding that you will probably have just one microwave oven available.
- Microwave Recipes—Lists the recipes included in the Member's Guide and includes extra recipes to help you meet the needs of you and your 4-H'ers.
- **Connecting the Gaps**—Includes ideas for activities that can be used to fill spare moments during the meeting.
- **Send-Off**—Reviews things to remember at the end of each meeting.

Parent Helpers and Teen Leaders

Many leaders appreciate the assistance of a teen leader or parent helper. Some clubs have helpers identified; in other clubs, the leader may have to recruit an assistant. Your 4-H members may have suggestions for people to ask. Suggested responsibilities for a teen leader or parent helper:

- Assemble ingredients and equipment for the meeting.
- Guide a small work group during a project meeting.
- Work individually with a member who needs extra assistance.
- Help members with records.
- Prepare extra teaching aids.
- Demonstrate a new technique to the group.
- Make telephone calls to remind members of the next meeting.
- Plan a public display or exhibit with the members.

A key to working with an assistant is thinking ahead together. This will require personal contact with the helper to plan before each meeting. It is a good idea for the helper to arrive early for the microwave meetings.

Although involving someone else may sometimes mean more work for you, it can increase the effectiveness of the meeting. A helper provides additional hands, ears and eyes. You may also have the satisfaction of seeing a teen leader grow in confidence and eventually become an adult leader!

A Note About Parents

Parents will lend their support and enthusiasm to this project if kept well-informed. Remember that it is helpful for parents to know such things as:

 Time, date and location of project meeting

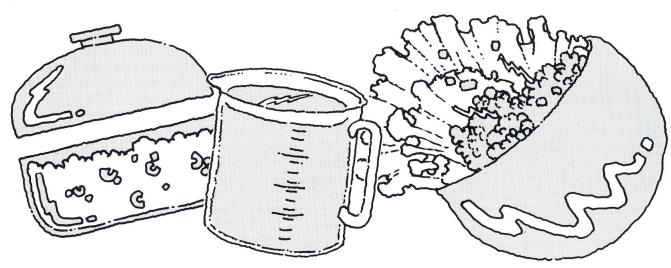
- Ending as well as starting time of meeting
- Transportation plans (such as car pooling)
- Project meeting plans:
 - Is money needed to share food costs?
 - Does the "tasting" of food prepared take the place of a meal?
 - Has the 4-H member accepted a specific responsibility?
- Creative ways in which **The Microwave Connection** ideas can be incorporated into each family's life style

A Note About the Revised Microwave Connection Member's and Leader's Guides

The recipes in **The Microwave Connection Member's** and **Leader's Guides** have been revised with the **1990 United States Department of Agriculture (USDA) Dietary Guidelines for Americans** in mind. These guidelines offer nutrition and diet advice for healthy Americans aged 2 and over. The guidelines are:

- Eat a variety of foods.
- Maintain a healthy weight.
- Choose a diet low in fat, saturated fat and cholesterol.

- Choose a diet with plenty of vegetables, fruits and grain products.
- Use sugars only in moderation.
- Use salt and sodium only in moderation.
- If you drink alcoholic beverages, do so in moderation. Single copies of the **1990 USDA Dietary Guidelines for Americans** are available free in many county Cooperative Extension Service offices and through the Consumer Information Center, Department 514-X, Pueblo, CO 81009.



MEETING 1: Let's Get Started and Snacks in a Snap

Key Connecting Ideas

This 4-H project connects tasty foods, speedy cooking, penny-wise purchases and healthy eating.
There is a big difference between how food cooks in a microwave and how it cooks in a regular oven.
Cooking time can be set on a microwave oven by either a dial or touch pad.
It is/important to follow good health and safety rules.

Snacks can be chosen to provide nutrients your body needs.
 Microwave-safe dishes should be used in microwave cooking.
 Microwave ovens vary in cooking wattage.

□ The larger the quantity of food, the longer it takes to cook in the microwave.

□ There are various terms for 100% power.

Additional Information

WHAT IS WATTAGE?

Microwave ovens vary in maximum cooking wattage. The recipes that are part of **The Microwave Connection** 4-H project were tested in ovens with 625-700 maximum cooking wattage. The cooking times suggested reflect this testing.

Many consumers are told the cooking wattage when they purchase the microwave oven. Others can find this information in the "Use and Care Guide," on the metal plate on the back of the oven or by asking the dealer who sold the oven.

The following guide is helpful to 4-H members who have microwave ovens with a different cooking wattage:

- 500-600 cooking wattage: Add 15 seconds to each minute of cooking time.
- 400-500 cooking wattage: Add 30 seconds to each minute of cooking time.

A countertop microwave should be on a separate circuit and grounded with a 3-prong plug. Avoid using an extension cord.

USING METAL IN A MICROWAVE OVEN

Metal utensils should not be used in a microwave oven. This includes ceramic dishes with metal trim, foil pans and aluminum foil (except when recommended in a recipe). Metals reflect microwaves. Therefore, metals will keep portions of food from cooking by reflecting microwaves away from the food. The use of metal utensils can cause slower cooking, uneven cooking and can even prevent cooking. The use of metal utensils also increases the amount of energy needed for microwave cooking and can damage the utensils or parts of the microwave oven.

The only time when any metal should be used in microwave cooking is when it is specifically recommended in a recipe. For example, some recipes suggest using small strips of aluminum foil when cooking large meat and poultry items. Small strips of foil can be used to "reflect" microwave energy away from exposed areas, such as poultry wing tips or legs, which tend to dehydrate or overcook. Metal foil strips should not touch the oven door or sides of the microwave oven.

MICROWAVE-SAFE COOKWARE

The best utensils for microwave cooking are those that allow microwave energy to pass through the material to the food. Many kitchens are stocked with dishes that are microwave-safe, like oven-safe glass casseroles, pie plates, baking dishes, glass measuring cups, glass mixing bowls and custard cups. For many 4-H members, it will not be necessary to purchase special microwave cooking equipment.

Before using any utensil in the microwave oven, give it the lookand-see test. Turn the utensil over and look for a label reading "Suitable for Microwave" or "Microwave Oven Safe." If the utensil is not labeled and you want to be sure it's microwave-safe, use the dish test on page 29 of **The Microwave Connection Member's Guide.**

GROWING UP HEALTHY: A REVIEW OF GOOD NUTRITION

The Microwave Connection 4-H project is designed to help youths learn to safely prepare nutritious foods in a microwave oven. Learning about good nutrition goes handin-hand with learning to use a microwave oven.

Since many young people are not interested in memorizing facts about nutrients, it is helpful to make learning about nutrition fun by using games, puzzles and other activities in which members can actively participate. Several of these types of activities are included throughout **The Microwave Connection Member's Guide.** Your county Cooperative Extension Service office also has many resources that can help you.

Additional information on each nutrient is included in this Leader's Guide in the appropriate section. The 4-H **Fit It All Together** bulletin series also provides nutrition information. These bulletins are available from your county Cooperative Extension Service office.

Also notice that each recipe in the Member's Guide contains a list of the nutrients found in that recipe. This information can be used to help members understand that it is important to eat a variety of foods every day to get all the nutrients their bodies need. It also shows that different foods are good sources of different nutrients.

Several key ideas about good nutrition should be shared with members throughout **The Microwave Connection** 4-H project. These are:

- People eat to keep healthy, to look and feel good, to have energy for work and play, and to aid growth.
- Foods are made up of more than 50 different nutrients. Nutrients

Nutrition information is highlighted in each lesson of The Microwave Connection:

Let's Get Started & Snacks in a Snap	nutritious snacks
Give Breakfast a Running Start	B vitamins and fiber the importance of breakfast
Lunch Break	calcium water
Hamburger Happenings	protein iron
Baked Potato Bonanza	carbohydrates vitamin C
Microwave Show-Off Dinner	vitamin A fat

are chemical substances that have special jobs to do in the body.

• Most foods contain more than one nutrient, but no one food has all the different nutrients people need. So it is important to eat a variety of food every day.

SNACK SMART

"Snacks in a Snap" provides information on the importance of choosing nutrient-rich snacks. Snacks are an accepted part of the American way of eating, and they can make a valuable contribution to a good diet if chosen wisely. Youths often decide what they will eat for snacks, and you can encourage them to "snack smart."

The best choices for snacks are those that are high in nutrients and low in sugar, fat, salt and calories (if weight gain is a problem). This doesn't mean that sweet snacks should never be eaten. They can be eaten occasionally, but members should remember that these types of foods can be harmful to their teeth if eaten often. Sweets are also usually high in calories and are not an appropriate choice for overweight young people. (More information on sugar is on page 17 in this Leader's Guide.)

Meeting Guide

GETTING STARTED

As your group gathers to begin **The Microwave Connection** 4-H experience, it is important that each person feels comfortable and welcome. Certainly it is helpful to know each member's name as a way of showing care and concern for each individual. In some situations, everyone might know each other; in other situations, the meeting might be the first experience the 4-H'ers have shared.

Take time to get acquainted. You might try something as simple as having each person name a favorite food that begins with the first letter of his or her name. Maybe someone in the group can name every person and the favorite foods by the end of this exercise! It is up to you as the leader to try very hard to call members by their names as quickly as possible.

After everyone is acquainted it may be a good idea to tell in your own words just why you are excited about **The Microwave Connection** 4-H project. Remember that it is perfectly acceptable to approach this as a learning-together project.

Some leaders like to take care of "housekeeping details" right at the

beginning of each session. Such things as a method for handling food costs, times, dates and places for meetings, and other shared concerns need to be addressed in an efficient and fair manner. Your county Cooperative Extension Service office can provide suggestions on how to handle the details of organizing 4-H meetings. Be sure to record each member's name, address, telephone number and parent's name.

CONNECTING QUESTIONS

By using questions and answers in your meeting, you can provide an excellent way to share information with others. Following is a series of questions that covers the material in this lesson. Try using these questions to open up the world of microwave cooking to 4-H members.

On slips of paper, write down each numbered question and place it in a "hat" for drawing. Notice that the answers follow each question to help you explain the information as needed. Encourage each 4-H member to draw a question, find the answer in **The Microwave Connection Member's Guide** and be ready to share the information. Call the numbers in sequential order to cover all the necessary material.

Divide the questions so that you use some of them before the food preparation and some during or following use of the microwave. Depending on the size of your group, some 4-H'ers may want to answer more than one question, or two or more 4-H members can work together on one question.

Questions:

 This 4-H project is called The Microwave Connection. What ideas does this project connect? Tasty foods, speedy cooking, pennywise purchases and healthy eating.
 How does microwave energy cook food? How does this differ from the regular cooking of food? Food cooks when microwave energy makes moisture molecules in the food move back and forth very fast causing friction that produces heat. This heat cooks the food. On the range top, the pan gets hot and then cooks the food. In the regular oven, food cooks from the heat that is in the air in the oven.

3. *What type of cookware is microwave-safe? Why?* Glass, some plastics, most pottery and some paper make good microwave cookware. That's because they allow microwave energy to pass through them as light passes through a window.

4. Name several good cooking and health habits that should be used in preparing microwave recipes.

- Wash your hands.
- Protect your clothes with an apron if you want.
- Make sure your hair will not get into the food.
- Read all recipe directions.
- Gather supplies and equipment before you start cooking.
- Always have pot holders available.
- Remember to measure carefully.
- Always leave the kitchen clean.
- **5.** *Name several snacks that are good for you.*

Raw vegetables, cheeses, fresh fruits, fruit juices without added sugar, yogurt, lowfat milk and milkshakes, bread, muffins, tortillas, crackers, pizza and peanut butter are a few examples.

6. *Why should metal pans not be used in the microwave oven?* Microwaves bounce off metal, causing unevenly cooked foods.

7. Microwave ovens vary in cooking wattage. What was the cooking wattage of the ovens used to test the recipes in **The Microwave Connection** 4-H project? How does this affect cooking time?

Recipes in this project were tested in 625-700 cooking wattage ovens.The higher the cooking wattage, the faster the food cooks.8. How does the length of cooking time vary as larger amounts

of food are cooked in the microwave oven?

The larger the quantity, the longer it takes to cook.

9. *What terms mean the same as 100% power?*

- Full Power
- High
- Normal

10. *Why is it important to eat a variety of foods every day?* Most foods contain more than one nutrient, but no one food has all the different nutrients you need. Eating a variety of foods helps your body get the nutrients you need to look and feel good.

MICROWAVE COOKING IN ACTION

Since 4-H members enjoy "hands-on" experiences, they will be anxious to start cooking in the microwave. First of all, refer to "Rules of the Road" on page 5 in the Member's Guide and review that information with your 4-H'ers. This would be a good time to mention other health and safety habits too, such as those listed on page 4.

One of the main tasks to accomplish in this microwave lesson is to help the 4-H member understand how to set the time and start to cook in the microwave oven that will be used during the project. Because ovens vary, even those 4-H'ers who use a microwave oven daily need to review this procedure. The recipe for Chili Dip is designed to help each member learn to set the time and start the microwave. This activity provides an opportunity for each one to stir the chili mixture and set the appropriate time. Once your members have the basic operating technique under control, the remaining recipes in this lesson can be prepared by members individually.

The Pizza Snacks and the Apple Warm-Up can now be individually prepared by each 4-H member. Plan a rotation system where some members are doing food preparation while others work with the microwave oven.

Microwave Recipes

Pizza Snacks (Member's Guide, page 6)
Chili Dip (Member's Guide, page 7)
Apple Warm-Up (Member's Guide, page 9)
Pizza Sauce (Leader's Guide, page 23)

Hurry-Up Nachos (Leader's Guide, page 23)

CONNECTING THE GAPS

Many times it is helpful to 4-H leaders to have a good backlog of ideas to use when a few free moments are available. Here are some possibilities of activities for members to do during this lesson:

- 1. Check your favorite snacks on page 6 of the Member's Guide.
- **2.** Help fix fresh vegetables to use with the Chili Dip.
- **3.** Make a list of snacks you would like to learn to cook in the microwave oven.
- 4. Complete the "All about Apples" puzzle (Member's Guide, page 9). Answers to all puzzles are on page 42 in the Member's Guide.
- **5.** Rub your hands together to see how friction produces heat.
- 6. Do the Check Point for Snacks in a Snap (Member's Guide, page 9).

The Check Point answers that the leader needs to know include:

- Foods take longer to cook in some microwave ovens than in other microwave ovens because microwave ovens vary in cooking wattage. Foods cook more slowly in lower wattage ovens.
- Ten pizza snacks take longer to cook than five pizza snacks because the larger the quantity of food, the longer it takes to cook.

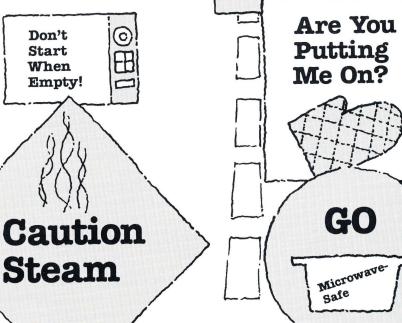
SEND-OFF

As you and your members enjoy tasting the microwave foods, it might be a good time to think of

the experiences in this lesson and reflect on their value. What has each member learned about cooking in a microwave oven? Which foods did they like best? Is there a recipe that members would like to make again? What has each member learned about nutritious snacks?

- Now is the time to:Discuss plans with members
- for the next meeting. Decide together what you will have time and space to prepare.
- Begin work on records (Member's Guide, page 38). Records are important for helping members keep track of accomplishments during 4-H years. They also provide information to the leader on follow-up activities 4-H'ers are doing at home.
- Finish cleaning up.
- Talk about additional activities 4-H'ers could do at home. You could ask members to keep a list of the places they see microwave ovens in use. Have them bring their lists to the next meeting.

These ideas can be launching pads for many more creative nutritious microwave snacks. Remember that quality snacks are judged not only on cooking ease and good nutrition, but on the flavors 4-H'ers like!



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Stop, Look

& Listen To

Instructions

MEETING 2: Give Breakfast a Running Start

Key Connecting Ideas

 Breakfast is an important meal.
 Microwave-cooked foods continue to cook after the oven stops.

□ Foods cooked in the microwave may or may not need to be covered.

□ Steam from cooked foods can cause burns.

When setting the microwave timer, start with the minimum time given in a recipe.
Rotate foods in the microwave oven to aid in even cooking.
Correct measuring techniques ensure good recipe results.
Whole grains and enriched breads and cereals are good sources of the B vitamins and fiber.

Additional Information

MORE ON COVER-UPS

A covering is used in microwave cooking to hold in the heat and speed the cooking, heating or defrosting of the food. For some foods the covering should be tight fitting to hold in steam. For others, it should be loose enough to allow the moisture to escape. Occasionally a covering is used primarily to prevent spattering.

Tight-fitting covers include casserole covers and plastic wrap. When using plastic wrap as a cover, remember that it **should not touch the food** because of food safety concerns. Plastic wraps need to be vented to prevent the excess steam from splitting them open. Instructions for venting are on page 11 in the Member's Guide. Tight-fitting covers are used on foods that are steamed, simmered or otherwise kept moist. Be careful when removing these coverings because the container is filled with steam.

Waxed paper or other nonstick cooking paper is often used as a semi-tight covering. When laid across the top of a casserole or dish, it fits fairly tightly, yet some steam can escape. This holds in the heat and aids in even cooking.

Loose-fitting coverings like paper towels and napkins easily allow moisture to pass through. These coverings, which are often used with bread items, allow excess moisture to be absorbed. Loosefitting coverings also help to prevent spattering.

THE B VITAMINS AND FIBER

The B vitamins are a group of vitamins that work together in the

body. In general, they are found in meats and beans, whole grains, and enriched breads and cereals. They help body cells to get energy from food.

Thiamin (B_1) , riboflavin (B_2) and niacin are three of the B vitamins. In addition to helping the body use energy, **thiamin** also promotes a normal appetite and helps keep the nervous system healthy. Foods high in thiamin include pork, dried beans and peas, and whole grain and enriched breads and cereals.

Riboflavin promotes healthy skin, eyes and clear vision. Meats (especially liver), milk and milk products are the main sources of riboflavin in the American diet. Leafy dark green vegetables and whole grain and enriched breads and cereals also contain riboflavin.

Niacin helps promote a normal appetite, healthy skin and a healthy nervous system. It is also important in digestion. The highest amounts of niacin are found in liver, meat, poultry, fish, peanuts, and whole grain and enriched breads and cereals.

Whole grain breads and cereals are good sources of B vitamins as well as **fiber**. Fiber, or "roughage" as it used to be called, is the part of plant foods that your body cannot digest. It helps move food through the body, which helps prevent constipation. Fiber is currently being studied to see its effect on certain diseases. In addition to wholegrains, fiber is found in vegetables, unpeeled fruits, and dry beans and peas. It is a good idea to eat some fiber foods every day in moderation.

THE IMPORTANCE OF BREAKFAST

An adequate breakfast is an important part of a healthy diet. Several studies have shown that children who do not eat breakfast do not do as well in school as children who do eat breakfast. Many adults do not eat breakfast or drink only a cup of coffee. Since young people are influenced by the examples set by adults, it is important that parents also understand the importance of a good breakfast to energy and health.

Reasons for eating or not eating breakfast can be found on page 10 in the Member's Guide. These ideas can be used by 4-H'ers to answer the letter from "Breakfast-Skipper Sam" (Member's Guide, page 14). Perhaps you can share your members' answers with parents!

USE EGGS SAFELY

Eggs are a perishable food and need to be handled properly. Concern about the microorganism *Salmonella enteritidis* has increased the need for care when handling, storing and cooking eggs. Recommendations include:

- Buy AA- or A-graded eggs from refrigerated cases only.
- At home, refrigerate eggs immediately on an inside shelf, preferably in the original carton.
- Wash your hands before and after handling eggs.
- Cook eggs thoroughly. The white should be completely set and the yolks should not be runny. Serve eggs promptly after cooking.

Meeting Guide

GETTING STARTED

During this second session with 4-H members, you will want to build on the enthusiasm that was sparked during the "Let's Get Started and Snacks in a Snap" lesson. Do you remember each person's name? If not, do a quick review.

Begin by finding out if any of the 4-H'ers tried one of the snack recipes on their own. Did anyone do any other cooking in a microwave oven since the last meeting? Encourage the use of microwave cooking between meetings, but be sensitive to the needs of 4-H'ers who have not been able to try the recipes because there was no microwave oven available or because time was not available. Are there any questions or concerns? If this can be a time of open sharing and discussion, the stage is set for a great project meeting.

Take a few minutes to check on "housekeeping details." Members function easily in a setting where they know that a plan is in place and what is expected of them.

CONNECTING QUESTIONS

Try dividing the 4-H members into groups of two or three to answer the following questions. Give each group part of the questions and ask them to quickly refer to the information in **The Microwave Connection Member's Guide** to find the answers.

Continue in a sharing atmosphere as the small groups report on their questions and answers. Be certain that you as the leader have gone over the material ahead of time so that you can easily pull together a summary statement after each group has finished.

Questions:

1. *Why is breakfast an important meal?*

When you haven't eaten for 10 or 12 hours, you need a nutritious breakfast to resupply your body with energy.

2. What do the terms "carry-over cooking" or "standing time" mean? These terms mean that some cooking will continue inside the food after the microwave oven has been shut off.

3. *Why are some foods covered with waxed paper?* Foods are covered with waxed paper to help hold in some heat but not steam.

4. What coverings are used to bold in lots of steam and moisture?
Plastic wrap and casserole covers.
5. What rules should you follow when using plastic wrap in the microwave?

You may use plastic wrap to cover cooking dishes in the microwave, but the plastic wrap should not touch the food. Also, it's a good idea to vent the plastic wrap. This can be done by rolling back one edge of the wrap from the side

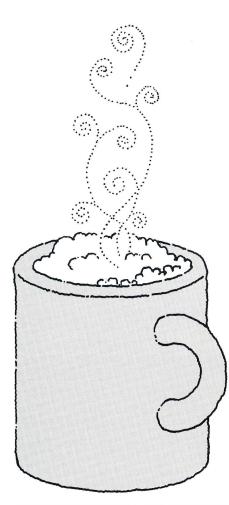
of the dish to form a narrow opening. The vent allows steam to escape so the plastic wrap does not burst open.

6. How can steam burns be avoided?

Always remove plastic wrap or a lid away from your face.

7. Why is the timer set for the shortest time given in the recipe directions when microwave cooking? It is easy to add extra time if the food needs more cooking, but you cannot subtract time from over-cooked food.

8. How, why and when are foods rotated in the microwave oven? To rotate means to turn the entire filled dish one-quarter to one-half turn. This helps food cook more evenly. Rotating is usually done half-way through the total cooking time.



9. *B* vitamins are found in wholegrain and enriched breads and cereals, meats and beans. Why are these vitamins important for your body?

The B vitamins help body cells break down carbohydrates, fat and protein for energy.

10. What types of measuring cups are used for dry ingredients and liquid ingredients?

Metal or plastic cups are used for dry ingredients; glass cups are used for liquid ingredients.

MICROWAVE COOKING IN ACTION

Cooking breakfast in the microwave can be fun. This microwave experience can show 4-H'ers just how it can be done. Quickly review the recipes. Which one sounds appealing? Which one seems unusual?

The next concern is how many of the recipes can be prepared in the time and space available. The Monkey Bran Muffin can be the group cooking effort of the day.

Take a few minutes to divide responsibilities and quickly develop a work plan. It is important that 4-H'ers prepare foods they like, but it is also a good idea to encourage new food combinations. The meshing of favorite foods with new creations will stimulate a dynamic cooking experience.

Microwave Recipes

Jiffy Breakfast (Member's Guide, page 11)

Monkey Bran Muffins (Member's Guide, page 12) Microwave Hot Chocolate Mix

(Member's Guide, page 13) **Banana Split Oatmeal** (Member's Guide, page 13)

A Scrambled Egg for Me (Leader's Guide, page 24)

CONNECTING THE GAPS

This breakfast lesson has several recipes that serve just one person. Since members like to do things for themselves, this should work out well. However, there may be some time segments when there is a waiting line to use the microwave oven.

Here are some activities for members to do during those waiting minutes:

- 1. Write Breakfast-Skipper Sam an answer to his letter (Member's Guide, page 14).
- 2. Do the "Cereal Search" (Member's Guide, page 14).
- **3.** Decorate and label a clean recycled jar or can to use when giving the Microwave Hot Chocolate Mix as a food gift from the kitchen.
- 4. Develop a short demonstration to tell others about the different "Microwave Cover-Ups."
- **5.** Do the Check Point for "Give Breakfast a Running Start" (Member's Guide, page 14). The Check Point answers the leader needs to know include:
- The recipe in "Give Breakfast a Running Start" that calls for covering is Jiffy Breakfast.
- Rotating helps food cook more evenly.
- Breakfast is an important meal because it helps resupply the body with energy.

SEND-OFF

It is most likely that you have accomplished this breakfast lesson during a time of day that is not the traditional morning hour. Express to your 4-H members how much you appreciate their flexibility and encourage them to try these recipes at home during their usual breakfast hour. Take a moment for questions and comments. Then:

- Discuss plans with members for the next meeting. Decide together what you will have time and space to prepare.
- Begin work on records (Member's Guide, page 38).
- Finish cleaning up.
- Talk about additional activities 4-H'ers could do at home. As members leave, encourage them to prepare their own breakfasts.

MEETING 3: Lunch Break

Key Connecting Ideas

Nutritious lunches can easily be prepared in a microwave oven.
Stirring is an important microwave cooking technique.
Microwave ovens are easy to keep clean.
Microwave ovens start and stop easily.
Calcium helps to build strong bones and teeth.
Water is an important nutrient.

Additional Information

STIRRING

Stirring is one technique that is often mentioned in microwave cooking. In range-top cooking, food is stirred up from the bottom to help it heat evenly. In microwave cooking, cooked portions of food are stirred from the outside to the center. A whisk works very well for stirring puddings, gravies and saucetype mixtures. In microwave cooking, stirring is occasional rather than the constant stirring needed for range-top cooking to prevent sticking.

CALCIUM

Calcium is a mineral that is likely to be lacking in the diet of young people. The "Lunch Break" lesson contains several recipes that are high in calcium, including the Chunky Cheese Soup and the Chocolate Pudding Just for Me. Sharing information on calcium should be part of this meeting.

Calcium helps to build strong bones and teeth, aids blood clotting, and helps nerves, muscles and the heart to function properly. Some calcium is necessary for all people throughout their lives, but growing children, teenagers, and pregnant and lactating women have the highest calcium needs. Three servings of milk and cheese foods are needed every day for 9- to 12year-olds; four servings for teenagers through age 24; two servings for adults; and four servings for pregnant or lactating women. A serving is 8 ounces of milk or $1^{1/2}$ slices $(1^{1/2} \text{ ounces})$ cheese or 1 cup of yogurt. Ice cream and leafy green vegetables such as collards and kale also supply calcium.

WATER

Although people do not usually think of water as a nutrient, it is a very important one. It carries nutrients to body cells and waste products away. It is an important part of all cells and fluids in the body. Water aids digestion and helps control body temperature.

Sources of water include beverages **and** foods. For example, tomatoes are 90 percent water. The Chunky Cheese Soup recipe will provide water to the diet and could be used to start a discussion of the importance of water to health.

Meeting Guide

GETTING STARTED

Be prepared for active, enthusiastic 4-H'ers as they gather for the third **Microwave Connection** experience. By this time, individuals will feel like a part of the group, and they will be more than anxious to share their cooking experiences with each other.

The "Lunch Break" topic is a natural to follow snacks and breakfasts. Everyone gets hungry by lunch time, so microwave ideas will be mouth-watering. The microwave information shared in the Member's Guide is built on the topics covered in the first two lessons.

Take care of any "housekeeping details." Be in tune with the needs and desires of those in your project group. Most youths are happiest and learn best in a setting where they have contributed to the total plan.

CONNECTING QUESTIONS

The following questions are aimed at the "Lunch Break" lesson. Why not tap the creative flair of 4-H members and see how many of these questions could be developed into a charade or role play. This can be done on an individual basis or in a small group. Divide the questions and group in a way that seems fair and interesting.

These questions also serve as a great summary for members and leaders to check on whether all of the information for a particular lesson has been covered.

Questions:

 What types of food can you eat for a nutritious lunch?
 Milk and cheese; meat, poultry, fish and beans; breads and cereals; fruits; and vegetables.
 Give several safety tips for bandling chicken.
 Wash your hands with soap and hot water before and after handling chicken. Use hot soapy water to wash knives, cutting boards and sinks. Keep cooked chicken hot (140°F) or chill immediately.

3. Choose the lower fat choice in each of these pairs.

French fries/Plain baked potato

Fried chicken sandwich/ Grilled chicken sandwich

Regular hamburger / Bacon double cheeseburger

Egg, sausage and cheese biscuit/ Pancakes with syrup

4. How can you get a microwave oven stopped if you want to check on the food being cooked? On some microwave ovens you need to push the pad that says "stop." On other ovens, as soon as you open the door the microwave oven stops running.

5. Why are foods stirred as they cook in the microwave oven? What two recipes in this "Lunch Break" lesson need stirring?

Stirring helps to even the temperature in food and shortens cooking time. Stirring also helps thickened mixtures become smooth and creamy. Chunky Cheese Soup and Chocolate Pudding Just for Me required stirring.

6. How many more calories and bow many more grams of fat does 1 cup of whole milk have than 1 cup of skim milk?

There are 60 more calories and 10 more grams of fat in 1 cup of whole milk than in 1 cup of skim milk.

7. *How can a microwave oven be kept clean?*

Wipe the oven with a damp, soapy cloth after each use.

8. Spatters sometimes become hard to remove from the inside of the microwave oven. How can they easily be taken off?

Heat 1 cup of water in the microwave oven until the water steams. This will often soften the food so that it will easily wipe clean.

9. *Name two recipes in this "Lunch Break" lesson that are good sources of calcium.*

Chunky Cheese Soup and Chocolate Pudding Just For Me.

10. *Why is calcium an important nutrient in your daily diet?* Calcium helps to build strong bones and teeth.

MICROWAVE COOKING IN ACTION

Your members are probably beginning to feel right at home with microwave cooking. So the plan in this **Microwave Connection** 4-H project is to provide these members with continued positive microwave cooking experiences. The "Lunch Break" ideas do just that.

Quickly review the recipe possibilities. Even though the Chocolate Pudding Just for Me is the dessert, you may wish to make it first so that it can cool while other foods are prepared.

Microwave Recipes

Chunky Cheese Soup (Member's Guide, page 16) Chicken Nuggets (Member's Guide, page 17) Chocolate Pudding Just for Me (Member's Guide, page 18) Corn-on-the-Cob (Leader's Guide, page 24)

CONNECTING THE GAPS

There is lots of "cooking action" in this lesson. Some recipes take a great deal of attention, especially those that need stirring like the pudding and soup. Encourage members to clean up as they cook. This will keep things in an orderly manner and avoid too many dirty dishes at the end of the meeting. Some leaders like to provide each person with a dishcloth for quick and easy wipe-ups. Actually each member could bring a dishcloth and towel, if you desire.

Now for some activities for members to do during those free minutes:

- **1.** Solve the riddles (Member's Guide, page 19).
- **2.** Plan three nutritious lunches using at least one microwave recipe in each menu.
- **3.** Create ideas for several different sauces you could use for dipping the chicken nuggets.
- **4.** List five foods that are high in calcium.

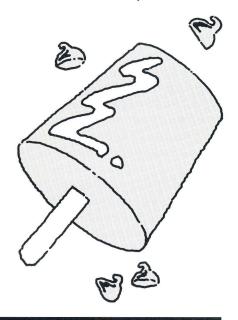
- Do the Check Point for "Lunch Break" (Member's Guide, page 19). The Check Point answer the leader needs to know is:
- Stirring is necessary because it helps to even the temperature in the food and shortens the cooking time. Stirring also helps to distribute the thickening ingredient in certain recipes.

SEND-OFF

When the last taste of chocolate pudding is consumed, it is time to review the microwave material and recipes that were covered in this lesson. Informal comments will quickly indicate what ideas were popular and which ones leave room for improvement. As you quickly summarize, end on an upbeat note by focusing on the positive results of this meeting. Then:

- Discuss plans with members for the next meeting. Decide together what you will have time and space to prepare.
- Begin work on records (Member's Guide, page 39).
- Finish cleaning up.
- Talk about additional activities 4-H'ers could do at home. Lunch cooked in a microwave

oven is quick, tasty and nutritious. Encourage members to share lunch ideas with their family and friends.



MEETING 4: Hamburger Happenings

Key Connecting Ideas

□ Lean ground beef or ground turkey (referred to as "ground meat" throughout this lesson) is easily browned in the microwave oven.

□ Protein and iron are important nutrients.

□ Pasta cooked in the microwave oven needs to be covered so that steam forms to help cook the pasta.

□ Microwave cooking is safe.

Additional Information

MICROWAVE SAFETY

Like other cooking appliances, the microwave oven must be operated properly to ensure safe usage. It should not be operated if an object is caught in the door, if the door does not close properly or if the door or other part of the oven has been damaged.

Since 1971, all microwave ovens have had to meet a radiation safety standard set by the U.S. Food and Drug Administration. This standard limits the amounts of microwaves that can leak from an oven throughout its lifetime. Thus the microwave oven poses no risk when used properly and if not damaged when used.

PROTEIN

Since meats are one source of protein, the "Hamburger Happenings" meeting can be a time to help 4-H'ers learn the importance of protein and the types of foods in which it is found. Protein is needed for growth and repair of body cells and helps form substances to fight infection.

There are other foods besides meats that are good sources of protein. These include poultry, fish, eggs, milk, cheese, dried beans, peas, peanut butter, nuts and grains. The animal sources of protein (meat, poultry, fish, eggs, milk, cheese) are complete proteins. This means they contain all the amino acids (substances that make up protein) that cannot be made in the body and must come from food. Plant proteins are incomplete because they are missing or low in some of these essential amino acids.

When two incomplete plant proteins are eaten in the same day, a form of "teamwork" can take place to make complete protein for your body. Examples include a peanut butter sandwich (combines peanut butter with wheat), refried beans and corn tortillas, or rice and beans. Eating small amounts of foods from animal sources with plant proteins (such as macaroni and cheese) also gives complete protein. People who do not eat animal foods need a good understanding of protein teams that work together to meet the body's protein needs.

IRON

Meat is also one source of iron, so "Hamburger Happenings" can bring up a brief discussion of this important mineral. In addition to being found in meat, iron is found in liver, egg yolks, dried beans, dark green leafy vegetables, dried fruits, and whole grain and enriched breads and cereals. Iron helps blood cells carry oxygen to all parts of the body.

Meeting Guide

GETTING STARTED

By this fourth session, most of the 4-H members will know the format of each lesson and feel comfortable as they learn and experience new techniques in microwave cooking. It is always a good idea to talk individually with members and continue to make them feel welcome. Have they had an opportunity to use a microwave oven since the last meeting?

"Housekeeping details" can probably be woven into the beginning discussion as you talk with each youth.

CONNECTING QUESTIONS

It might be fun to have the following questions on "Hamburger Happenings" hidden around the room to stimulate interest. If you keep the questions numbered in order, you will be able to cover the information easily.

Depending on preparation time you might want to write questions and answers separately and hide both. This is another opportunity to involve a teen leader or 4-H member who comes to the meeting early.

Questions:

1. What is the basic utensil used when browning ground meat in the microwave oven?

Hard plastic colander.

2. *Describe a colander.* A colander is a large bowl with holes that liquid can drain through.

3. Protein is an important nutrient found in beef. Why is protein important for a bealthy body? Protein aids growth and helps body cells remain healthy. It also helps you resist disease.

4. Why are pasta casseroles kept covered in the microwave oven? Pasta casseroles are kept covered so that steam forms to help the pasta cook and become tender.

5. What causes disbes to get hot when used in the microwave oven? Dishes get hot from the food that is cooking within them.

6. Iron belps blood cells carry oxygen to all parts of the body. What foods are good sources of iron? Meats, liver, egg yolks, dry beans, dark green leafy vegetables, dried fruits, and whole grain and enriched breads and cereals.

7. What is pocket bread?
It is bread that puffs and forms a pouch as it is baking. Cut open the pouch and fill it for tasty eating.
8. Name some good sources of protein.

The lean ground beef and ground turkey featured in this lesson are excellent sources of protein. Other good sources of protein include milk and dairy products, meat, poultry, fish, eggs, nuts, peanut butter, grains and dried beans. 9. *Is the microwave oven safe?* Yes, when used according to directions. Companies that make microwave ovens must follow strict standards set by the U.S. government.

10. How should you dispose of excess grease after browning ground meat?

Carefully pour unwanted grease into an empty can or other suitable container. Allow the grease to harden, then remove it from the can and dispose of it. Recycle the can.

MICROWAVE COOKING IN ACTION

Ground meat is obviously the star of this lesson. It has been chosen because so many people like and use this versatile meat. This lesson centers around browning ground meat in a colander in the microwave oven.

There are three main dish ideas using this browned ground meat. Most 4-H groups will want to try one or two of the ground meat recipes as time allows. The Fruit Fiesta can be chilling in the freezer while the other recipes are being prepared. There are enough steps in the procedures that it may work best to assign tasks to each member.

It is a good idea to plan ways in which 4-H members get a chance to do various food preparation tasks. A rotation-type plan avoids the same person having to chop the onions every time. The same concern will help to make the sharing of clean-up tasks fair to each person.

Microwave Recipes

Microwave-Browned Ground Meat (Member's Guide, page 20) Sloppy Joes (Member's Guide, page 21) Pizza Casserole (Member's Guide, page 22) Taco Pockets (Member's Guide, page 24) Fruit Fiesta (Member's Guide, page 25) Easy Microwaved Lasagna (Leader's Guide, page 25)

CONNECTING THE GAPS

This is an action-packed meeting requiring constant use of the microwave oven. It will be necessary to involve some members in related activities while others are doing food preparation. Here are some suggested activities for members:

- **1.** List your favorite recipes that use ground meat.
- 2. Make a poster that shows how to

brown ground meat in a microwave oven.

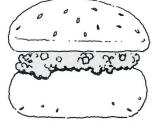
- **3.** Do the "Food Fillers" puzzle on page 25 in the Member's Guide.
- 4. Plan one or two simple menus that include nutritious foods and feature one of the "Hamburger Happenings" recipes.
- **5.** Do the Check Point for "Hamburger Happenings" (Member's Guide, page 25). The Check Point answers the leader needs to know include:
- The microwave oven is a safe appliance if used properly because companies that make microwave ovens must follow strict standards set by the United States government.
- You need to be very careful when dishes get hot from the food within them. Care must also be taken around steam.

SEND-OFF

In a busy lesson like this one, leaders like to sandwich in a little summary time as the final meeting details are accomplished. Encourage members to try one of the ground meat recipes at home. They might make the commitment to report the results of their efforts at the next meeting. Now is the time to:

- Discuss plans with members for the next meeting. Decide together what you will have time and space to prepare.
- Begin work on records (Member's Guide, page 39).
- Finish cleaning up.
- Talk about additional activities 4-H'ers could do at home.

As each 4-H member leaves, give that person a compliment on something they did well during the "Hamburger Happenings" microwave experience.



meeting 5: Baked Potato Bonanza

Key Connecting Ideas

□ Potatoes bake well in a microwave oven.

□ Potatoes contain many nutrients such as vitamin C, carbohydrates and some B vitamins.
□ It is helpful to have a plan for baking potatoes in a microwave to ensure top quality.
□ Foods should be arranged properly in the microwave oven to ensure even cooking.
□ A "dish test" tells whether dishes are microwave-safe.

Additional Information

ARRANGING FOOD IN A MICROWAVE

Food arranged properly in the microwave oven will aid in uniform cooking. Place less dense or thinner areas toward the center of the dish, with more dense and thicker areas to the outside. Food is placed in this manner because microwaves cook from the outside to the center.

Here are some examples:

• When cooking chicken, place meaty parts to the outside of the dish.

• Place broccoli flowerets in the center with tougher stems to the outside.

It will also help foods cook evenly if they are rearranged midway through the cooking time.

VITAMIN C

Most people can name orange juice as a good source of vitamin C. But there are many other foods that contain this vitamin—potatoes, for example. Although one potato does not contain as much vitamin C as a glass of orange juice, potatoes still make a significant contribution of vitamin C to our diet since Americans tend to eat so many of them! "Baked Potato Bonanza" can provide an opportunity to share information on the importance of eating a good food source of vitamin C every day.

Vitamin C helps keep body cells and tissues strong and healthy. It aids the body in healing wounds, fighting infections and using iron. Vitamin C is also important for proper building of bones and teeth.

Encourage your 4-H members to eat a good food source of vitamin C daily. Choices include citrus fruits and their juices (such as oranges and grapefruit), broccoli, strawberries, cantaloupe, cabbage, green peppers, greens (such as collard and mustard), tomatoes and potatoes. Have each 4-H'er name a favorite food high in vitamin C.

CARBOHYDRATES

Potatoes are also a good source of carbohydrates. There are three main forms of carbohydrates: starches and fiber (also called complex carbohydrates) and sugars (simple carbohydrates). Starches are found in potatoes, dried beans, corn, rice, noodle products, breads, cereals and some fruits (especially dried fruits and bananas). Many of these foods are also good sources of fiber (see page 10 in the Leader's Guide for more information about fiber). Sugars include honey, molasses, syrups, table sugar and other sweets.

Carbohydrates are a good source of energy for the body. They are not more "fattening" than other foods. Carbohydrates supply calories for energy at the same rate as protein and less than half that of fat. Their fattening reputation probably comes from the fact that many carbohydrate foods are eaten with toppings high in fat (such as butter on potatoes or bread). It is currently recommended that Americans choose a diet with plenty of vegetables, fruits and grain products, and use sugars only in moderation.

Both sugars and starches (which break down into sugars) can contribute to tooth decay. The more often you eat these foods, the greater the risk of cavities. This is especially true if you eat the foods between meals, when you won't usually brush your teeth afterwards, or when the foods you eat are sticky. Encourage 4-H members to eat sweets in moderation and to brush their teeth after eating them if possible.

Meeting Guide

GETTING STARTED

As you review the possibilities for this learning experience, you can see that one of our favorite vegetables takes the highlight. Baked potatoes make a wonderful base for all sorts of toppings. Actually, a baked potato with a topping can become a meal in itself.

Open the meeting with a discussion of the "Hamburger Happenings" cooking results. Take time to make certain each person has a chance to share information, concerns or questions with the group. If someone has had an unpleasant microwave cooking experience, he or she needs to understand that others may have had similar difficulties. Have group members give helpful suggestions.

In some groups the talking and discussion can become so much fun that minutes slip by very quickly and the penalty is that there is not enough time to complete the lesson. If this is a problem in your group, just set a time limit before the discussion starts. Remember those "housekeeping details," too.

CONNECTING QUESTIONS

Try a different approach for the following questions that go with the "Baked Potato Bonanza" lesson. Jot down the answers on slips of paper and have 4-H members create the questions. Again, keep them in numerical order for ease in understanding. The slips of paper can be distributed in any manner that is easy for you and your teen leader or parent helper.

Questions:

1. *Why is a potato pierced with a fork before baking?* Piercing a potato prevents a build-up of steam that might cause an explosion.

2. What is the time guideline for baking potatoes in the microwave oven when the potato weight is known?

Potatoes bake very well in the microwave oven using the guideline of 6 to 7 minutes per pound at 100% power.

3. *How many ounces are there in a pound?*

16 ounces.

4. If a baked potato looks like a dried prune, what do you think is the problem?

The baked potato has been cooked too long in the microwave oven.

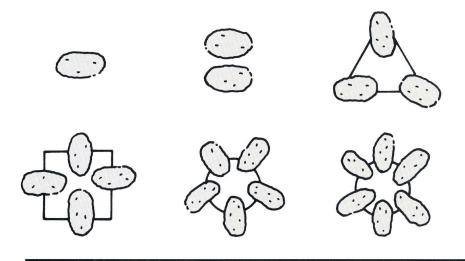
5. *Why are potatoes good for you?* Potatoes contain valuable contributions to your daily need of carbohydrates, vitamin C, some B vitamins and fiber.

6. *Why are carbohydrates important to your body?*

Carbohydrates give your body a good source of energy.

7. Are potatoes high or low in calories?

Potatoes are low in calories. It's the toppings that add the calories. 8. How should four potatoes be arranged for cooking in the microwave oven?



Form a square with one potato in each corner.

9. *How should potatoes be stored?* Store potatoes in a cool, dark, dry place—**not** in the refrigerator. Refrigerator temperatures turn some of the potato starch to sugar, making the cooked potato too sweet and too dark.

10. *Give the steps for the "dish test" for checking to see if dishes are safe to use.*

a. Measure 1/2 cup of water into a 1-cup glass measurer.

b. Place the filled measurer in the dish to be tested.

c. Place the dish in the microwave oven.

d. Microwave on 100% power for 1 minute.

e. If the dish is cool and the water is warm, then the dish is fine to use for microwave cooking. If the dish is hot, do not use it for microwave cooking.

MICROWAVE COOKING IN ACTION

Many of the basic microwave concepts were presented in the first four lessons. This leaves time for reviewing and actual cooking during this session. It also gives you a chance to help 4-H members make choices as to which foods they would like to prepare in the microwave oven.

The term microwave-safe is used to refer to those dishes that are safe to use in the microwave oven. On page 29 of the Member's Guide there is a method for testing dishes for this safe use. This test can be done with the entire group, as an individual or team demonstration, or as a type of home activity. Do not test dishes that are trimmed in gold or silver as they are **not** safe in the microwave because of their metal content.

Planning is the key to time management. Review the recipes and activities that require use of the microwave oven. A work chart for this lesson might look like this:

- Igloo Pie preparation... then pop into freezer.
- Get potatoes baked and wrapped in clean kitchen terry towel.
- Prepare Very Berry Sundae Topping.
- Make toppings for potatoes.

Microwave Recipes:

Baked Potato Basics (Member's Guide, page 27) Cheesy Broccoli Potato (Member's Guide, page 28) Ham Boats (Member's Guide, page 29) Igloo Pie (Member's Guide, page 30) Very Berry Sundae Topping (Member's Guide, page 30) Chili-Topped Potatoes (Leader's Guide, page 26)

CONNECTING THE GAPS

Members can do the following activities during their free moments:

- **1.** Develop a plan for sharing with others the "dish test" for checking microwave-safe dishes.
- **2.** Name at least five foods that are good sources of vitamin C.
- **3.** Try the "Potato Puzzler" on page 28 of the Member's Guide.
- 4. Create several menus including other foods that could be served with these specially topped baked potatoes and Igloo Pie.
- **5.** Begin work on the "Connecting the Facts" word search (Member's Guide, page 36).
- 6. Do the Check Point for "Baked Potato Bonanza" (Member's Guide, page 30). The Check Point answer the leader needs to know is:
- Nutrients found in potatoes include vitamin C, some B vitamins, carbohydrates and fiber.

SEND-OFF

Quick cooking is one of the main reasons many people like to prepare foods in a microwave oven. After a lesson as energetic as this one, it may seem that the microwave didn't cook quickly enough! But just take a moment with your group to see all the things they accomplished. Your group did a lot of learning and cooking in a very short period of time. Help 4-H members to translate these experiences into cooking activities that can be done at home.

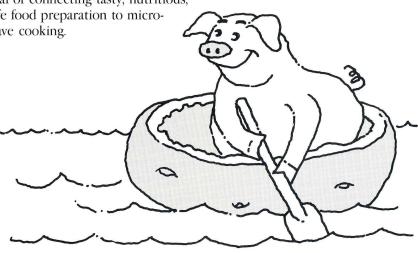
Some groups may want to consider a "microwave exploration" field trip to an appliance store. Be sure to contact the store manager and/or salesperson before your trip. Ask him or her to point out different types of microwave ovens and the features available. A follow-up thank-you note will be appreciated.

As you look ahead to the last session, note that the Microwave Show-Off Dinner could be served to a guest or two, if desired. This of course would require an invitation and should be discussed and planned with the group. Now is the time to:

- Discuss plans with members for the next meeting. Decide together what you will have time and space to prepare.
- Begin work on records (Member's Guide, page 40).
- Finish cleaning up.
- Talk about additional activities 4-H'ers could do at home.

As 4-H members head for home, encourage them to remember that they are accomplishing their goal of connecting tasty, nutritious, safe food preparation to microwave cooking.





meeting 6: Microwave Show-Off Dinner

Key Connecting Ideas

□ Food defrosts easily in a microwave oven.

- Most microwave ovens have an automatic defrost selection.Many microwave ovens have
- various power levels.
- cooking talents.
- □ Dark green and deep orange vegetables and fruits are high in vitamin A.

□ Fats are important in the diet but need to be limited.

Additional Information

REHEATING

One of the biggest advantages of the microwave oven is the way it can reheat foods without changing their fresh-cooked flavor. Many foods can be prepared in advance when it's most convenient and then popped into the microwave just before serving time. Thrifty cooks are well aware that because reheated food is so delicious, few leftovers go to waste.

Less than 100% power is often recommended for reheating to

avoid overcooking food and to aid in even reheating. Some guidelines are given in the Member's Guide on page 34. Here are some additional suggestions:

- Foods at room temperature reheat faster than refrigerated or frozen foods.
- To reheat plates of food, arrange thicker or denser foods around the outside of the plate and thinner, more delicate foods, such as vegetables, in the center. Cover with waxed paper.
- Allow reheated food at least one minute standing time to assure even temperature.

DEFROSTING

Defrosting is one of the popular uses for the microwave oven. The main goal in defrosting food is to develop a method for quick thawing without cooking the food. Many microwave ovens have automatic defrost settings at either 30% or 50% power. Automatic defrosting is basically a cycling on and off of the microwaves. This can be done manually if needed. (Directions are on page 33 of the Member's Guide.)

Here are some helpful defrosting ideas:

• The length of time it takes for a food to defrost depends on its density. For example, rolls defrost more quickly than ground meat.

- If a food is not completely defrosted, allow it to stand for a few minutes at room temperature.
- It is helpful to turn food over (top to bottom) halfway through the defrosting time for the most even results.
- Waxed paper makes a good covering when defrosting meat, fish, poultry and casseroles. Rolls may be wrapped in paper towels. Frozen cakes and pies should be left uncovered.
- If cooking is occurring, decrease the length of the microwave defrosting time.

VITAMIN A

If your 4-H members choose to prepare carrots or broccoli as the Easy-Does-It Vegetables for their "Microwave Show-Off Dinner" meeting, they will have chosen a good source of vitamin A! This nutrient helps eyes adjust to dim light, keeps skin healthy and promotes growth. It also helps keep the linings of the mouth, nose, throat and digestive tract healthy and resistant to infection.

A general rule to make sure your body gets the vitamin A it needs is to eat a dark green or deep orange vegetable or fruit every other day. Vegetables and fruits such as broccoli, carrots, sweet potatoes, winter squash, apricots, peaches, greens and cantaloupe are high in vitamin A. Other foods that are good sources include liver, egg yolk and milk.

FATS

You may think that this is one nutrient you can do without! But including some fat in your diet is absolutely necessary for good health. Fat in food supplies energy for your body, and it acts as a carrier for vitamins A, D, E and K, and for other essential nutrients.

Problems may occur when too much fat and fatty foods are included in the daily diet. High fat diets have been linked to heart attacks, strokes and certain cancers; therefore, it is currently recommended that people lower the amount of fat they eat. Foods that are high in fats include cooking fats and oils, butter, margarine, salad dressing, fried foods, poultry skin, and some meats and cheeses.

To help lower your fat intake, eat plenty of vegetables, fruits and grain products; choose lean meats, fish, poultry without skin and lowfat dairy products most of the time; and use fats and oils sparingly.

Meeting Guide

GETTING STARTED

As you start the meeting today, you are actually beginning to "wrap-up" this **Microwave Connection** experience. Try to convey to 4-H members both the feeling of accomplishment and the anticipation of experiences to come. Quickly have members share microwave highlights of cooking they have done since the group last met and also take care of routine "housekeeping details."

If the "Microwave Show-Off Dinner" is going to be served to a guest or two, some of the organizational matters may have been taken care of ahead of time by telephone. It might be helpful to have guests arrive just for the tasting time (unless they would like to see microwave cooking in action).

This would be a good time to make certain that each person has an idea of the material that has been covered in these six lessons. If anyone has been absent, that person could be quickly updated by members who were present. Keep this introduction time short, lively and under control.

CONNECTING QUESTIONS

The following questions pertain to the "Microwave Show-Off Dinner" lesson. If your group has a creative flair, set the stage for "quick graphics." Provide such supplies as pieces of paper, cardboard, crayons and markers, and ask members to draw a picture to explain each question. This idea can be expanded to serve as a review exercise of microwave material, if time permits.

Questions

1. What process takes place when food is defrosted in a micro-wave oven?

Defrosting food in the microwave is a combination of cooking and resting time. During the resting time heat travels to the center of the food to defrost in an even way.

2. What is a good covering for foods during defrosting? Waxed paper or other nonstick cooking paper.

3. Why do many microwave ovens have various power levels? A selection of power levels gives flexibility to microwave cooking and is helpful for cooking delicate foods and defrosting.

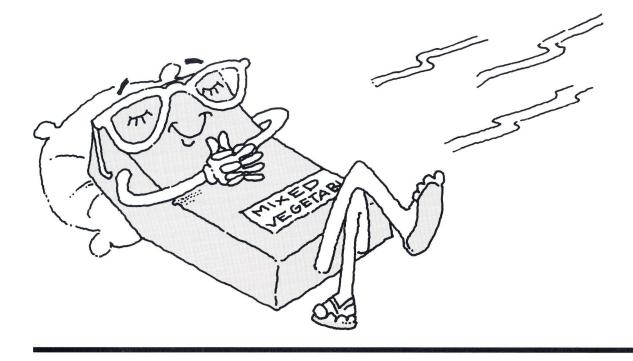
4. If there are different power settings on a microwave oven, how should bread products be reheated? Wrap the bread product in a paper towel or napkin and microwave at 30% power (one roll would take approximately 30 seconds).

5. Why is it suggested that some foods should be reheated in the microwave oven on less than 100% power?

Foods will reheat more evenly on less than 100% power.

6. What is accomplished when the skin is removed from chicken before cooking?

The excess fat in the chicken skin and just beneath the skin is easily



removed. This reduces the amount of fat you eat. It also helps the chicken absorb more flavor from the coating and cook more evenly in a microwave oven.

7. How can you tell when chicken cooked in the microwave is done? Pierce the chicken with a fork. If there are no juices or the juices are clear or golden, the chicken is done. If the juices are pink, microwave the chicken on 100% power for 2 more minutes. Check the chicken juices again. Also, always observe the standing times given in chicken recipes.

8. What colors of vegetables and fruits are bigb in vitamin A?
Dark green or deep orange such as broccoli, carrots, sweet potatoes, peaches and mustard greens.
9. What types of vegetables cook well in a box in the microwave?
Small vegetables like peas, corn and chopped broccoli.

10. *How would you describe a "Microwave Show-Off Dinner"?* A dinner that is cooked in the microwave, tastes great and consists of foods that are good for you.

MICROWAVE COOKING IN ACTION

The "Microwave Show-Off Dinner" is an energetic effort for young microwave cooks, but it is very possible. Part of the secret of success will be to divide the duties so that everyone can participate in recipe preparation and yet have the meal ready to eat at serving time. Shared use of the microwave will be the key. Here is a possible plan:

- Cook the rice, remembering that rice reheats well in a micro-wave oven.
- Measure the barbecue sauce ingredients and heat in the microwave oven.
- Prepare the Fruit Crisp and bake in the microwave oven.
- Cook the Barbecued Chicken in the microwave oven.
- Make the Easy-Does-It Vegetables.

- Reheat the rice and any other food that should be served hot.
- Warm the Garlic French Bread if also serving this with dinner. Encourage clean-up and dish-

washing whenever there is time and as a part of the recipe preparation time. Many 4-H members take responsibility for the dirty dishes they create and enjoy sharing clean-up tasks.

Microwave Recipes

Barbecued Chicken (Member's Guide, page 32) Nice Rice (Member's Guide, page 33) Easy-Does-It Vegetables (Member's Guide, page 34) Fresh Fruit Crisp (Member's Guide, page 35) Garlic French Bread (Leader's Guide, page 24) Reheated Nice Rice (Leader's Guide, page 26)

CONNECTING THE GAPS

Even during this last busy session there may be a few idle moments when members can accomplish some of the following:

- 1. Set the table for the "Microwave Show-Off Dinner."
- **2.** Finish the "Connecting the Facts" word search (Member's Guide, page 36) as a good way to review the microwave information that has been covered.
- **3.** Write a paragraph or two that would explain defrosting or reheating foods in the microwave oven.
- 4. Do the Check Point for "Microwave Show-Off Dinner" (Member's Guide, page 35). The Check Point answers the leader needs to know include:
- When microwave cooking vegetables in the box, the box needs to be pierced before cooking to allow steam to escape.
- It is a good idea to remove the skin from chicken before cooking because this reduces the amount of fat you eat (there is much fat

in the skin of chicken). Eating too much fat can cause health problems. Also, removing chicken skin will help the chicken cook more evenly in the microwave and allow seasonings to penetrate the chicken more easily for added flavor.

SEND-OFF

The last few minutes of this meeting are especially important because you are not only wrapping up this particular microwave lesson, but you are also summarizing the entire **Microwave Connection** project. During this short time span, share good feelings about microwave cooking as well as the general positive attitude that comes in learning to cook for oneself.

If there is time, members and leaders may set some short-term goals about things that could be accomplished as a result of this **Microwave Connection** experience. One goal may be to share with others the information they learned. This can be done by demonstrations, exhibits or posters that can be displayed at county fairs or other community events. Although this is the final lesson, leave the door open for continued microwave cooking experiences.

Check on the record-keeping one last time and make certain all clean-up tasks are completed. Express your appreciation for the cooperative attitude the 4-H members have shown during this experience.

During these six sessions, many ideas have been presented. When you connect tasty recipes, speedy cooking, penny-wise purchases and healthy foods, you can truthfully say, "Welcome to the wonderful world of the 4-H **Microwave Connection.**"



Sometimes leaders look for additional recipe ideas to meet time needs or taste preferences of 4-H members. Included in this section are recipes that can be used as supplements or substitutes for those in the Member's

Guide. With your guidance, you may want to have 4-H members decide ahead of time which recipes they would like to try.

RECIPE

Pizza Sauce (makes 11/2 cups)

One way to stretch the food dollar is to make your own pizza sauce to use on "Pizza Snacks." By keeping tomato paste and a few spices in your cupboard, you can produce pizza sauce in a matter of minutes. If there is sauce left over, pop it in the freezer for use on another day. A 4-H member may want to demonstrate how to prepare the sauce.

You need:

□ 1 cup water

- \Box 1 can (6 ounces) tomato paste
- \Box 1¹/₂ tablespoons dried parsley flakes
- \square 2 teaspoons dried instant minced onion
- Equipment:
- □ 1-quart glass measurer
- □ can opener
- □ rubber scraper

garlic powder \square 1/2 teaspoon dried

 \square 1/8 teaspoon

- oregano leaves, crushed
- \square 1/2 teaspoon dried basil leaves, crushed
- \square 1/2 teaspoon salt

- □ measuring spoons □ wooden spoon
 - for stirring

1. Measure the water in a 1-quart glass measurer. Add the tomato paste, parsley flakes, onion, garlic powder, oregano, basil and salt. Stir with a wooden spoon to mix.

2. Microwave for 2 minutes on 100% power. Stir. Microwave another 2 minutes on 100% power. Stir. Microwave another 1-2 minutes until thick. Stir. **3.** Use on pizza snacks or in your favorite recipe.

Nutrients: vitamin A, vitamin C, carbohydrates

RECIPE

Hurry-Up Nachos

(makes 1 serving)

You need:

- □ 1 large flour tortilla
- □ cooking spray
- \square ¹/₄ cup refried beans
- \Box l tablespoon taco sauce
- \square 2 tablespoons shredded Monterev Jack or other favorite cheese

Equipment:

🗆 kitchen shears or	□ dry measuring cups
bread knife and	measuring spoons
cutting board	🗆 spoon
□ microwave-safe plate	🗆 table knife

1. Cut the tortilla into 8 pie-shaped pieces with the kitchen shears or with a bread knife on a cutting board.

2. Lightly spray the microwave-safe plate with the cooking spray.

3. Arrange the tortilla pieces on the plate.

4. Microwave on 100% power for $1^{1/2}$ -2 minutes until slightly crisp.

5. Spoon a small amount of refried beans onto each tortilla piece. Spread the beans on each piece with the table knife.

6. Drizzle a few drops of taco sauce over each piece.

7. Sprinkle the cheese over the pieces.

8. Microwave on 100% power for 30 seconds. Check to see if the cheese is melted. If not, microwave on 100% power for 10-15 seconds more until the cheese is melted.

9. Let stand for 1 minute before eating so that you don't burn your mouth (the cheese gets very hot).

Nutrients: vitamin A, B vitamins, vitamin C, calcium, iron, carbohydrates, fiber, fat, protein

RECIPE

A Scrambled Egg for Me

(makes 1 serving)

You need:

- □ cooking spray
- □ l egg
- \Box 2 teaspoons milk

Equipment:

□ small microwavesafe bowl, casserole or mug

□ measuring spoons

□ fork □ waxed paper or other nonstick cooking paper

 \Box dash salt,

if desired

 \Box dash pepper

□ knife

1. Use the cooking spray to lightly spray the small bowl.

2. Place the egg and the milk in the sprayed bowl and stir briskly with a fork.

3. Microwave on 100% power for 30 seconds. Stir with a fork.

4. Microwave for another 30 seconds on 100% power. Fluff the egg with a fork. (Eggs should be set but still moist. Eggs continue to cook after the microwave power is off.)

5. Cover with waxed paper or other nonstick cooking paper. Let stand 1 minute. If after standing, the egg is not thoroughly cooked, microwave on 100% power for a few more seconds.

6. Season with salt and pepper.

Nutrients: B vitamins, fat, protein

RECIPE

Corn-on-the-Cob (makes 1 serving)

You need:

□ l ear fresh corn

□ margarine or butter, if desired

Equipment:

□ Waxed paper or other \Box plastic rack, nonstick cooking if available paper

□ pot holders 1. Take the husks off of the corn. Carefully re-

 \Box salt and pepper,

if desired

move the silks. Wash under cold water, gently shaking off excess water.

2. Wrap the corn in waxed paper or nonstick cooking paper, twisting the ends to close. Place the corn on a plastic rack, if available.

3. Microwave on 100% power for $1^{1/2}$ minutes. Turn the corn over. Microwave for another $1^{1/2}$ minutes on 100% power or until steaming hot. (Remember that very large ears may take longer.) 4. Using the pot holders, remove the corn from the oven. The corn will be very hot and steamy so be careful not to burn yourself. Season with margarine, salt and pepper, if desired.

Nutrients: B vitamins, vitamin C, carbohydrates, fiber

RECIPE

Garlic French Bread (makes 4-6 servings)

You need:

- \square 2 tablespoons margarine or butter
- \Box 1 (8-ounce) loaf French bread

Equipment:

- □ small microwavesafe bowl
- □ serrated knife
- □ cutting board
- □ butter spreading
- knife
- □ spoon or fork

 \square 1/8 teaspoon garlic powder

- □ pastry brush
- □ paper napkin
- □ wicker French bread basket (without staples in bottom) or serving dish

1. Place the margarine in the small microwavesafe bowl and microwave on 30% power for 15 seconds or until melted.

2. Stir the garlic powder into the melted margarine. **3.** Slice the bread as thick as desired. Brush the slices with the garlic mixture on one side and reform the loaf on a paper napkin in a basket.

4. Microwave on 30% power for 1 minute. Rotate the basket one-half turn. Microwave for 1 minute more on the defrost setting. The bread will be warm and fragrantly delicious, but not hot. Note: The French bread basket may fit best if placed diagonally in the microwave oven.

Nutrients: B vitamins, carbohydrates, fat

RECIPE

Easy Microwaved Lasagna (makes 8 servings)

You need:

- □ 1 pound lean ground beef or ground turkev
- \Box 1 can (14¹/₂ ounces) tomatoes, undrained, or 1 pint homecanned tomatoes
- \Box 1 can (6 ounces) tomato paste
- \Box 1 teaspoon salt
- \Box 1¹/₂ teaspoons dried basil leaves, crushed
- \square 1/2 teaspoon dried oregano leaves. crushed
- \square 1/8 teaspoon garlic powder

Equipment:

- □ hard plastic colander
- □ l-quart glass measurer or microwave-safe bowl
- □ fork
- □ 2-quart microwavesafe casserole (with lid, if available)
- □ dry and liquid measuring cups

- \Box 1/2 cup water
- □ 2 cups lowfat cottage cheese
- \Box 1/4 cup Parmesan cheese
- \Box 1 egg
- □ 1 tablespoon dried
- parsley flakes □ 8 uncooked lasagna
- noodles
- \Box 1¹/₂ cups (6 ounces) shredded mozzarella cheese
- \square 2 tablespoons Parmesan cheese
- □ measuring spoons
- □ can opener
- \square 2 rubber scrapers
- □ medium-sized mixing bowl
- □ 8- by 12-inch glass baking dish
- □ plastic wrap
- □ pot holders

1. Rest a plastic colander in the quart glass measurer or microwave-safe bowl. Crumble the ground meat into the colander.

2. Microwave on 100% power for 3 minutes. Stir with a fork to break the meat into small pieces. Microwave another 1¹/₂-3 minutes on 100% power until the meat is cooked. Stir again with a fork. Pour the grease into an empty can or other suitable container.

3. Put the drained meat into a 2-quart microwavesafe casserole. Stir in the tomatoes, tomato paste,

salt, basil, oregano, garlic powder and water. Cover with the casserole lid or plastic wrap that is vented. The plastic wrap should not touch the food. Microwave on 100% power for 3 minutes. Stir. Recover. Microwave another 2 minutes on 100% power until mixture boils.

4. In a medium-sized mixing bowl, combine the cottage cheese, 1/4 cup Parmesan cheese, egg and parsley. Mix well.

5. Pour $1^{1/2}$ cups of the tomato sauce mixture into an 8- by 12-inch glass baking dish. Spread the mixture evenly in the dish. Place four uncooked noodles evenly over the sauce (they may overlap slightly).

6. Top with half the cottage cheese mixture, spreading evenly. Sprinkle with half the mozzarella cheese. Spoon 1 cup of sauce evenly over the cheese. Place four more noodles over the sauce. Top with even layers of remaining cottage cheese mixture, mozzarella cheese and tomato sauce. Cover tightly with the lid or plastic wrap that is vented. The plastic wrap should not touch the food. 7. Microwave on 100% power for 15 minutes. rotating the dish one-half turn halfway through the cooking time.

8. Microwave at 50% power for 15-20 minutes more or until the noodles are tender. Carefully remove the lid or the plastic wrap away from you to avoid steam burns.

9. Sprinkle the lasagna with 2 tablespoons of Parmesan cheese.

10. Microwave on 100% power, uncovered, for $1-1^{1/2}$ minutes or until the cheese is melted. Let stand about 10 minutes before cutting into squares for serving.

Nutrients: vitamin A, B vitamins, vitamin C. calcium, iron, carbohydrates, fat, protein

RECIPE

Chili-Topped Potatoes

(makes 4 servings)

You need:

- □ 1/2 pound lean ground □ 1/4 cup water beef or ground □ 1 tablespoon turkey chili powder
- □ ¹/₃ cup finely chopped onion
- □ ¹/8 teaspoon garlic powder
- □ 1 can (8 ounces)
 tomato sauce

Equipment:

- □ hard plastic colander
- l-quart glass measurer or microwavesafe bowl
- □ fork
- 🗆 paring knife
- cutting board
- \Box paper towel

- 1 tablespoon chili powder
 1/4 teaspoon salt
 1/8 teaspoon pepper
 1/8 teaspoon pepper
 1/4 cup shredded cheddar cheese
 4 baked potatoes
- 🗆 can opener
- dry and liquid measuring cups
- measuring spoonswooden spoon
- for stirring
- □ pot holders

1. Rest a hard plastic colander in the quart glass measurer or microwave-safe bowl. Crumble the ground meat into the colander. Add the onion and garlic powder.

2. Microwave on 100% power for 2 minutes. Break up the meat with a fork. Microwave for another 1-2 minutes at 100% power until the meat is cooked. Stir again with a fork. Pour the grease into an empty can or other suitable container.

3. Wipe the measurer with a paper towel to remove any leftover grease. Put the cooked, drained meat into the measurer.

4. Stir in the tomato sauce, water, chili powder, salt and pepper. Microwave on 100% power for 3 minutes. Stir. Microwave for another 2-3 minutes on 100% power until piping hot.

5. Split open the tops of the baked potatoes and fluff the pulp with a fork. Spoon the topping over the potatoes. Sprinkle with cheddar cheese. Enjoy.

Nutrients: vitamin A, B vitamins, vitamin C, iron, carbohydrates, fiber, protein

RECIPE

Reheated Nice Rice

(makes 4 servings)

You need:

 cooked rice prepared from 1 cup long grain rice according to package directions or instructions on page 33 in The Microwave Connection Member's Guide.

□ pot holders

Equipment:

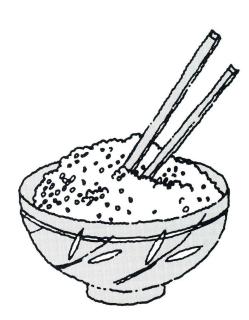
I - or 1¹/₂-quart microwave-safe casserole or serving dish (with lid, if available)

1. Put the cooked rice in a casserole. The length of time it takes to reheat the rice will depend on its starting temperature. It takes longer to reheat refrigerated rice than it does to reheat partially cooled rice.

2. Cover the rice-filled casserole or serving dish with the lid or plastic wrap that is vented. The plastic wrap should not touch the food.

3. Reheat the rice at 50% power for 5-10 minutes depending on the starting temperature of the rice. By using less than 100% power, the rice will heat very evenly.

Nutrients: B vitamins, carbohydrates



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