

# 4-H Cooking 301



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# ACKNOWLEDGEMENTS

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All recipes in this book were tested by University of Illinois Extension Nutrition and Wellness Educators.

- Recipes were analyzed using The Food Processor SQL, Version 10.0.
- 2% milk was used unless another kind of milk was specified in the recipe.
- When a range was given for ingredient amount or number of servings, the largest number was used in the analysis.
- When options were listed for ingredients in a recipe, the first ingredient listed was analyzed.

Codes for Nutrition Facts: g = gram and mg = milligram.

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**For ordering information** contact National 4-H Council Supply Service at: (301) 961-2934 or [www.4-Hmall.org](http://www.4-Hmall.org).



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# A NOTE TO PROJECT HELPERS



The *4-H Cooking 301* project builds on the skills young people learned in the beginning level *4-H Cooking 101* project and *4-H Cooking 201*. Members should complete those projects before beginning *4-H Cooking 301*. This project provides an in-depth exploration of outdoor cooking, party planning, cooking with slow cookers, and making yeast breads and shortened cakes.

After completing the first two 4-H Cooking projects, the 4-H member can begin to work more independently on this project. Even so, you still have a very important role as the Project Helper. You can continue to guide, assist, and mentor the young person in the project as he/she needs your help, but you can also encourage the confidence that develops as he/she completes tasks on his/her own. While working on this project youth can begin an in-depth exploration of cooking techniques and learn how to express cooking and baking as an art.

The project book is organized into sections by the **MyPlate** Food Groups. At the beginning of each section, background information is provided to help the young person learn more about the science behind food preparation, the nutritional contribution of each food group, or some basic information about preparing foods in the food group. Recipes are included for each food group. The recipes help the young person learn and apply the background information included in each section. Some of these skills will be used when preparing recipes from other food groups. For example, members learn to prepare meats on a charcoal or gas grill. They also prepare vegetables on the grill. Any of these grilling recipes could be used for the party planning portion of the project. This allows youth to practice and build their skills in some basic food preparation techniques. It also helps them understand that food preparation skills can be used in many different ways. This builds their confidence and expands the repertoire of foods they can prepare.

Learning by doing is the best way to learn food preparation skills. Young people will learn important life skills that they will use as they grow and become independent, responsible adults. Instead of always telling the youth the right answer or the correct way to do something, ask the young person what he/she thinks and allow the youth to learn from trial and error. With support from you as a caring person, he/she will remember these lessons and the impact that you had on his/her life.

As you work with the young person on this foods project, remember to focus on the positive. If the youth doesn't do things quite the way you would, compliment on what is done well rather than criticizing. If something doesn't turn out quite right, use it as a learning opportunity to find out what the youth might do differently next time. Your positive feedback and encouragement as the Project Helper is important to the youth.



# PROJECT PLANNING

Welcome to *4-H Cooking 301*. This project builds on many of the skills you learned in the beginning level *4-H Cooking 101* project and *4-H Cooking 201*. You should complete both of those projects before beginning *4-H Cooking 301*. The project is divided into sections based on **MyPlate** Food Groups. The skills and knowledge you learn and practice in one section may be applied in other sections. This will help you to expand your food preparation skills and techniques.

We suggest that you work for two or three years to complete the project. That will give you an opportunity to spend more time learning about some of the topics, such as yeast breads, shortened cakes, slow cookers, grilled foods, and party planning. Each year you could focus on one or two of these food preparation areas. You have over 70 different recipes to choose from and several learning activities to complete as part of the project.

It is important to have a Project Helper to guide you through the things you will learn in this project. Your helper can be a parent, grandparent, club leader, or another adult or older youth who has a lot of experience in food preparation and safety. Show the person your project book and ask if he/she would be willing to help you with the project. Ask your helper to complete the following information:

My Project Helper \_\_\_\_\_

Phone number \_\_\_\_\_ E-mail address \_\_\_\_\_

## For each year of the *4-H Cooking 301* project, you should:

- Prepare 2 to 3 dishes from **each** of the recipe sections: Fruit Group and Vegetable Group, Grains Group, Protein Foods Group, Dairy Group, and Desserts (10 to 15 dishes total)
- Demonstrate your knowledge on cooking or baking techniques. Give 3 to 5 “How To” demonstrations to your helper, leader, or club. Suggested topic areas include yeast breads, shortened cakes, slow cookers, grilled foods, and party planning.
- Complete 1 or 2 food science experiments.
- Complete at least one community service project such as, planning and hosting a holiday party for children in need or baking cakes or cupcakes for a homeless shelter.





# WHAT Do You Know?

Welcome to *4-H Cooking 301*! In this project, you will build on many of the skills that you learned in *4-H Cooking 101* and *201*. You should complete both of those projects before beginning this one. It may take two or three years for you to complete all of the activities in this project.

Following is a list of the skills you will learn in *4-H Cooking 301*. Before you start working on the project, read through the list of skills and rate yourself on how much you know now. Then at the end of each project year, rate what you know after completing the activities. Use the following rating scale:

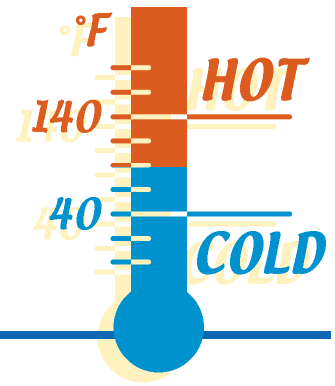
Begin each statement with the phrase, "I know..." then circle 1 = not at all; 2 = a little; 3 = a lot

I know...	Before			After		
Why FAT TOM is important for food safety	1	2	3	1	2	3
Important practices for outdoor cooking fire safety	1	2	3	1	2	3
How to keep food safe when cooking outdoors	1	2	3	1	2	3
How to plan a successful party	1	2	3	1	2	3
How to plan food preparation for a party and other meals	1	2	3	1	2	3
How to keep food safe when using a slow cooker	1	2	3	1	2	3
Different methods for making yeast breads	1	2	3	1	2	3
How to determine if yeast dough is ready to be shaped	1	2	3	1	2	3
How to shape dough into loaves, rolls, rings, or braids	1	2	3	1	2	3
How to evaluate yeast breads and rolls for quality	1	2	3	1	2	3
Different grains used for breakfast foods	1	2	3	1	2	3
Why fiber is important in your diet	1	2	3	1	2	3
How and why different flour affects yeast bread	1	2	3	1	2	3
How kneading affects yeast bread	1	2	3	1	2	3
How sugar and salt affect yeast growth and yeast bread	1	2	3	1	2	3
Different salad greens that can be used for salads	1	2	3	1	2	3
How to grill meats, vegetables, and fruit	1	2	3	1	2	3
How to use marinades to tenderize meat and add flavor	1	2	3	1	2	3
How to purchase, store, and prepare fish	1	2	3	1	2	3
Sources of saturated fats and <i>trans</i> fats	1	2	3	1	2	3
How saturated fats and <i>trans</i> fats affect health	1	2	3	1	2	3
How partially hydrogenated fats are made and why	1	2	3	1	2	3
How to make butter and flavored spreads	1	2	3	1	2	3
How to cream ingredients	1	2	3	1	2	3
How to beat eggs whites and check for stiff peaks	1	2	3	1	2	3
How to test cakes for doneness	1	2	3	1	2	3
How to evaluate a cake for quality	1	2	3	1	2	3
How to troubleshoot problems with cakes	1	2	3	1	2	3
How gluten affects different baked goods	1	2	3	1	2	3





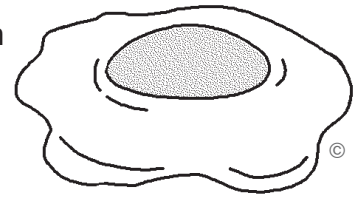
# FOOD SAFETY



As you learned in *4-H Cooking 101* and *201*, you must practice good food safety habits when preparing food. Bacteria can grow and multiply in food and cause foodborne illnesses. You may have learned in science class that bacteria need certain conditions to grow and multiply. An easy way to remember those conditions is using the phrase “**FAT TOM**.” The phrase helps you remember the first letter of the conditions bacteria need to grow — **F**ood, **A**cid, **T**ime, **T**emperature, **O**xygen, and **M**oisture. That spells **FAT TOM**. Let's find out how each of these conditions contributes to the growth of bacteria.

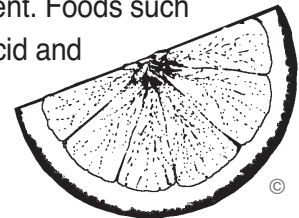
## “F” is for Food

Bacteria feed off the substances in food and that allows them to grow. Bacteria especially like foods that contain protein, such as meat, milk, eggs, and fish.



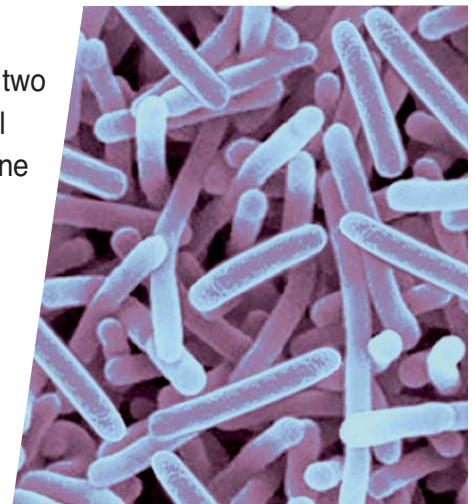
## “A” is for Acid

Bacteria can't grow in an environment that has a high acid content. Foods such as fresh fruits — especially citrus fruit, and fruit juices contain acid and prevent the growth of bacteria. Vinegar is acidic and is used to preserve foods such as, pickles, salad dressings, mayonnaise, and ketchup.



## “T” is for Time

Bacteria reproduce by dividing — one becomes two; two become four; and so on. Foods many contain a small amount of bacteria, but not enough to cause foodborne illness. But when low acid and high protein foods remain in the Food Safety Danger Zone (see *4-H Cooking 201*, page 11 for more information) the bacteria begin to grow rapidly. If food remains in the Food Safety Danger Zone for more than two hours, the bacteria may multiply to unsafe levels and cause foodborne illness for anyone who eats the food.





## “T” is for Temperature

As you learned in 4-H Cooking 201, bacteria grow and reproduce quickly between the temperatures of 40 and 140 degrees F — the Food Safety Danger Zone. Limit the time foods are stored at these temperatures. Keep foods refrigerated until time to prepare. Cool and refrigerate leftover foods quickly.

### Danger Zone



## “O” is for Oxygen

Like us, most bacteria need oxygen to survive. Canning removes oxygen from foods and preserves them. That is why canned foods — whether in cans or glass jars — can be stored at room temperature.

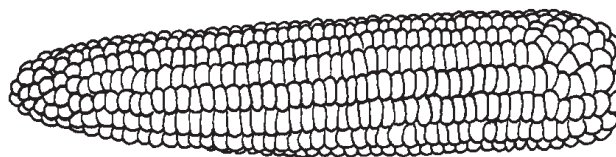
Some microorganisms do grow only in the absence of oxygen. **Botulism** — a rare type of foodborne illness — is caused by bacteria that grow without oxygen.

When canning food at home, follow recommended methods to prevent the growth of dangerous bacteria.

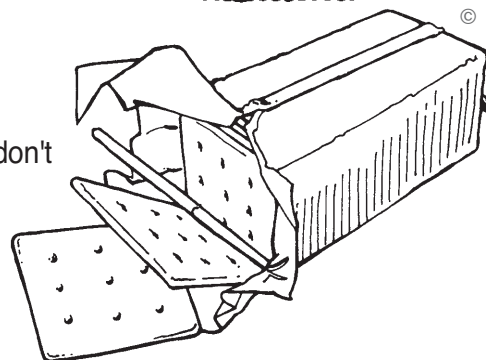


## “M” is for Moisture

Bacteria need water to grow. Foods that contain lots of water, such as fresh vegetables, provide the moisture bacteria need to grow.



Bacteria can't grow in foods such as dry noodles, flours, candies, and crackers that don't contain much moisture.



# OUTDOOR COOKING



Outdoor cooking is a fun way to liven up a special occasion, a picnic with friends, or a simple family meal. Cooking and eating outdoors can be relaxing and allow others to join in the preparations. Just be careful to practice what you learned in *4-H Cooking 101* and *201* about food safety. You should also practice fire safety around the grill, no matter what type you are using.

## Outdoor Cooking Fire Safety

- **Never** use charcoal for indoor cooking. The fire gives off carbon monoxide gas, which can cause sickness and possibly death if the gas accumulates in an enclosed space.
- **Never** squirt liquid starter fluid on a burning fire. The stream of liquid from the can may catch on fire and cause the can to explode.
- **Never** use gasoline to start a fire. Gasoline gives off fumes that can unexpectedly burst into flames.
- Keep the grill at least ten feet away from the house or other flammable materials.
- Place the grill on a level area to prevent it from tipping over and spilling the food and fire.
- Use long handled tongs or other cooking utensils to keep from burning your hands and arms.
- Wait until the coals from the fire are cool before disposing of them. Hot coals can continue to burn and cause fires.

## Outdoor Cooking Food Safety

- Make your own sanitizer by mixing one tablespoon of bleach in a gallon of water. Use this sanitizing mixture to clean the food preparation area, tables, etc.
- Keep cold foods cold. Fill a cooler with ice and place cold foods on the ice to keep cold until time to serve. Have a separate cooler of ice for beverages. Place coolers in a shady or cool location.
- Prepare cold dishes and chill thoroughly before adding to the cooler.
- Leave the meat in the cooler until it is ready to be cooked.
- Wash and sanitize cutting boards and equipment after cutting or handling meat.

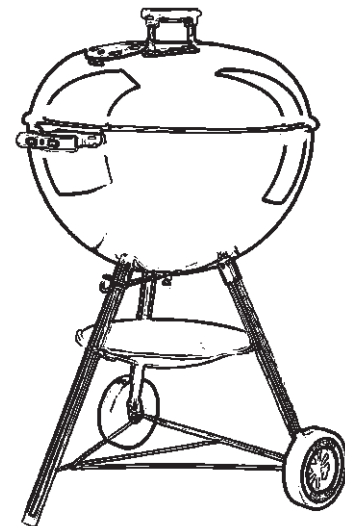


- Wash your hands with soap and water after handling uncooked meats.
- Thaw and marinate foods in the refrigerator. Use a non-metal container for marinades. Do not marinate for more than 24 hours to prevent food from becoming mushy.
- Do not reuse meat marinade. If desired, save some marinade for a sauce or **basting** before adding it to the meat.
- Keep juices from uncooked meat from coming into contact with cooked meat or ready-to-eat food. Use a clean plate for cooked meats.
- Use a thermometer to be sure meat is fully cooked. (See *4-H Cooking 201* page 10 for cooking temperatures).
- Clean the grill grates after each use. Place the grates in a tub of warm, soapy water and allow them to soak to loosen any grease or food. Wash, rinse, and return to grill.
- Discard any perishable food that has been out of refrigeration for more than two hours. For temperatures above 90 degrees F, one hour is the limit.

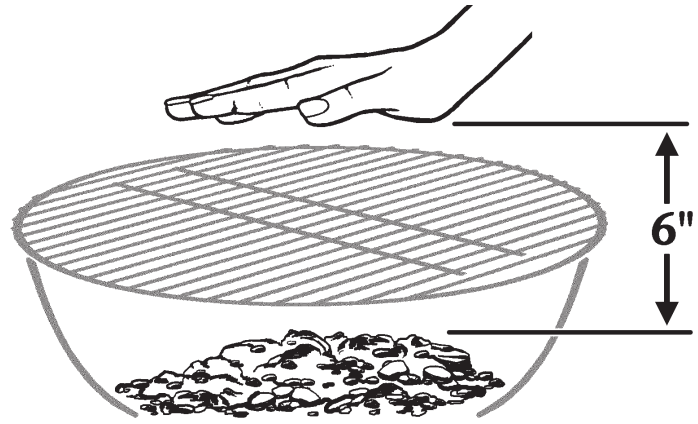
## Grill Safety

### Charcoal Grills

- Clean the grill and remove any ashes or grease. Place it in a well-ventilated area.
- Line the **firebox** with foil.
- Pile the charcoal briquettes in the shape of a pyramid.
- Saturate the briquettes with charcoal lighter fluid and let it soak in for about 30 seconds. Note: the fluid used to ignite the charcoal may cause an off flavor in food prepared on the grill. You may choose to use a starter box or “chimney” to light the charcoal since these do not use lighter fluid. Check the manufacturer's directions.
- Use a long match or grill lighter to light charcoal from the bottom of the pyramid.
- Wait until the flames go out and the coals turn light gray before cooking (about 15-20 minutes).
- Use a long handled utensil to spread the coals evenly in the firebox.
- Don't spray additional starter fluid onto lighted coals. The flame could travel up the stream of flammable liquid and cause an explosion.
- Use long handled tongs to add or turn food.
- Keep a spray bottle filled with water close by while you're cooking. Use a quick spray at the base of the flame to put out any flare-ups. If the flames continue, close the lid of the grill immediately.



- To estimate the temperature of your grill, hold your hand, palm side down, about six inches above the coals. Time how long it takes before the temperature becomes too hot and you must remove your hand. If you can only hold your hand over coals for



**Two** seconds — it's hot, about 375 degrees F or more.

**Three** seconds — it's medium-hot, about 350 to 375 degrees F.

**Four** seconds — it's medium, about 300 to 350 degrees F.

**Five** seconds — it's low, about 200 to 300 degrees F.

### Tips for Successful Grilling

- When lighting gas grills, leave the grill lid open to avoid “explosions” from gas fumes.
- The grill should be hot before adding food. For a charcoal grill, the coals should be grayish-white.
- Keep a spray bottle filled with water available to put out flare-ups.
- Spray cooking grates with nonstick cooking spray before lighting the fire to prevent food from sticking.
- Cook at lower temperatures to produce juicier meats.
- Marinate food to add flavor, tenderize meat, and maintain the food's juiciness.