

# Grill and Chill

**Theme Overview:** Most of us would agree that a burger, brats and even veggies taste better on the grill. The backyard ritual of grilling became popular in the United States after World War II. Families began moving out of the cities and into the suburbs where open-space backyards welcomed outdoor pastimes and grilling caught on in the 1950s.

There is often much debate around grilling: gas vs. charcoal, direct heat vs. indirect heat, ketchup-based BBQ sauce vs. vinegar-based BBQ sauce. Grilling can be as easy as throwing a couple of hot dogs on the grill or a battle over the National BBQ Championship. Grilling today is no longer reserved just for basic meats but can include fish for tacos, corn for a salad, peaches and much more.

Grilling is fun and very delicious, but each year grilling results in injuries usually caused by not using products correctly. Watch the video below for tips on keeping you and your family safe! For this month's recipes, it is important to work with an adult while grilling.

**Food allergies:** Recipes can be modified to accommodate food allergies and preferences.

**Reporting:** To receive the June Food, Fun & 4-H mailing of utensils, 4-H members must submit their answers and pictures at <https://forms.gle/o7TFqtjhMbRgnzY2A> by May 25th. The form requires an answer to the following statements about this month's theme, activities, and recipes:

"I like...."

"I wish...."

"I wonder...."

And requires you to upload

1 photo preparing one of the dishes

1 photo of family meal

When uploading the photos, choose to upload the smallest file size possible.



# Grill and Chill

## Dinner Conversation Topics:

- What is your favorite book and why?
- What is one thing you could have done better today?
- If you could make any vegetable against the law, which one would it be? What three words would you use to describe yourself?
- What is your favorite food cooked on the grill?

## Family Physical Activity Ideas:

- Play a family game of flashlight tag and enjoy the night's fireflies.
- Get some high-flyin' entertainment playing frisbee with family.
- Grab some sidewalk chalk and create a driveway/sidewalk hopscotch.

**Fair Entry Ideas:** Now that you have learned a little about grilling and using a meat thermometer, share with others what you have learned by creating a poster for the fair. For grades 3-5, create an educational poster based on food or kitchen safety. For grades 6-8, create an educational poster based on protein food safety. For grades 9-12, create an educational poster based on outdoor cookery or grilling.

# Measure Up!

Measuring carefully and using the right tools can make cooking much easier. Your meals will turn out better, too!

## **Don't guess or "eyeball" measurements**

If you are new to cooking or if you are using a new recipe. Even if you're an experienced cook, never estimate measurements when you're baking. Baking is a science and not measuring correctly can make your baked goods not turn out.

## **Use the right tools**

Coffee cups, tea cups, and the spoons you eat with are not good for measuring when you are cooking or baking. These items are not consistent in size or volume and can cause you to add too much or too little of an ingredient. Use actual measuring cups and measuring spoons. A well-stocked kitchen will have a liquid measuring cup, a set of dry measuring cups, and a set of measuring spoons.

## **Use the tool that lets you make the fewest measurements possible**

For example, if you try to measure 2 cups of flour with a  $\frac{1}{4}$ -cup scoop, you will have to measure out 8 scoops. You can easily lose track of how many scoops you have added! Use a 1-cup scoop, so that you have to measure out only 2 scoops.

## **Know basic equivalents**

These can help you easily convert measurements on containers in the grocery store to the amounts you need for a recipe. For example, if your recipe calls for 2 cups of milk, you will know you need to buy at least a 1-pint carton of milk at the grocery store.

1 Tablespoon = 3 teaspoons

4 Tablespoons =  $\frac{1}{4}$  cup = 2 fluid ounces

5 Tablespoons + 1 teaspoon =  $\frac{1}{3}$  cup

8 Tablespoons =  $\frac{1}{2}$  cup = 4 fluid ounces

16 Tablespoons = 1 cup = 8 fluid ounces

2 cups = 1 pint = 16 fluid ounces

4 cups = 1 quart = 32 fluid ounces

8 cups = 2 quarts =  $\frac{1}{2}$  gallon = 64 ounces

4 quarts = 1 gallon = 128 ounces

For measuring solid stick butter or margarine

$\frac{1}{2}$  stick =  $\frac{1}{4}$  cup

1 stick =  $\frac{1}{2}$  cup

2 sticks = 1 cup

Food Fun  
4H

### **Measuring Dry or Solid Ingredients**

To measure large amounts of dry or solid ingredients, like flour or butter, use dry measuring cups. To measure smaller amounts, use measuring spoons. When purchasing your dry measuring cups and spoons, choose cups with the measurements molded or engraved onto them, so that you can still read the measurements if the ink wears off over time.

### **Use a measuring cup that is exactly the size you need**

Most sets of dry measuring cups will include ¼-cup, 1/3-cup, ½-cup, and 1-cup sizes. Some sets will also include 1/8-cup and 2/3-cup sizes.

### **Fill the measuring cup all the way to the top**

Here are tips for different types of ingredients:

- For most dry ingredients, like sugar or rice: use the measuring cup to scoop the ingredient out of the container, or pour from the container into the measuring cup.
- For flour: hold the measuring cup over the container of flour or over the sink. Use a large spoon to scoop flour out of the container and into the measuring cup until the cup is overflowing. Do not pack the flour into the cup. Use the flat side of a knife (not the sharp side) to run over the top of the cup, scraping off the extra flour.
- For dense, semi-solid ingredients like softened butter, margarine, or peanut butter: use a spoon to scoop the ingredient from the container. Use the spoon to press the ingredient into the cup to prevent air pockets. Continue to add and press until the measuring cup is full.
- For brown sugar: use a spoon to scoop the brown sugar from the container. Use the spoon to press the brown sugar into the measuring cup. If your recipe calls for “lightly packed” brown sugar, press lightly. If it calls for “packed” or “firmly packed” brown sugar, press harder until all the air spaces are filled. When the cup is turned over, the brown sugar should come out in the shape of the measuring cup.

### **Level the ingredients with the top edge of the measuring cup**

Run the flat edge of a knife across the top of the cup to scrape off any excess ingredient. Do this over the original container or over the sink, to make cleanup easier.

### **Measuring Liquid Ingredients**

You can measure tablespoons and teaspoons of liquids with the same measuring spoons you use for dry ingredients. But measuring larger amounts of liquids is not the same as measuring dry or solid ingredients. To measure liquids correctly and get them out of the cup easily, use a liquid measuring cup with a pouring spout.

**Choose clear measuring cups** so that you can easily see the level of the liquid inside.



**Choose measuring cups with large, easy-to-read markings** to show the measurements. If possible, choose cups with the measurements molded or etched onto the cup, so that you can still read the measurements if the ink wears off over time.

**Place the measuring cup flat on the countertop or table** so the liquid inside will be level and you will get an accurate measurement. When reading the measurement, keep your face at eye level with the cup. Looking at it from above will cause you to get an incorrect measurement.

**Use a spoon or a rubber spatula** to get thick liquids, like molasses, out of the cup.

# Pass the Taste Test ... Use a Thermometer!

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Home recipe directions often say to cook a food until “done.” What is “done?”

While we worry about cooking a food long enough for safety, we also should be concerned about cooking it too long to taste good. We can assure 100% safety if food is cooked until it tastes and looks like cardboard, a piece of shoe leather or a hockey puck — no one will eat it!

Webster’s dictionary defines “doneness” as “the condition of being cooked to the desired degree.” Besides a safe temperature, another aspect of “doneness” deals with subjective qualities such as the appearance, texture and optimum flavor of a food.

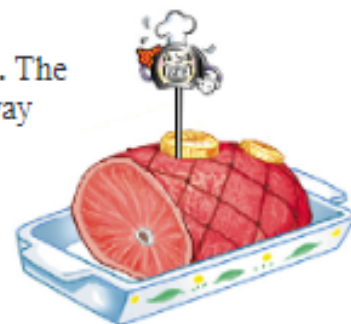
**Using a food thermometer is the only way to accurately determine a safe internal temperature is reached.**

Here are some temperature guidelines, using U.S. Department of Agriculture (USDA) and U.S. Food and Drug Administration (FDA) recommendations. These will help ensure cooking to a “doneness” that is both SAFE and GOOD-TASTING.

## Inserting a Thermometer

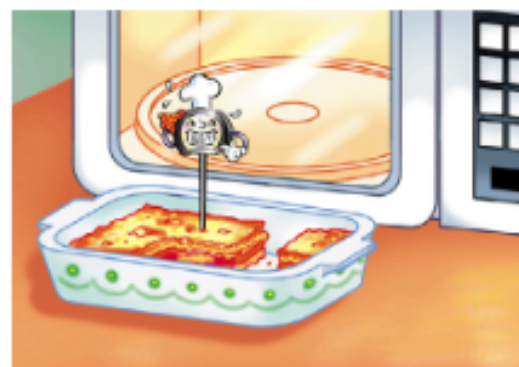
Insert thermometer in the center at the thickest part of the food away from bone, fat or gristle.

**BEEF, PORK or LAMB ROASTS.** The food thermometer should be placed midway in the roast, avoiding the bone. Irregularly shaped foods, such as beef roasts, should have their temperature checked in several places.



**THINNER FOODS** such as **MEAT PATTIES, PORK CHOPS and CHICKEN BREASTS.** An instant-read thermometer may be inserted sideways — if necessary — in the thickest part, away from bone, fat, or gristle. Insert so the entire sensing area is positioned through the center of the food. USDA encourages people to use digital instant-read thermometers for thinner foods — digital thermometers don’t need to be inserted as far as dial instant-read thermometers.

**CASSEROLES and other COMBINATION DISHES.** Place a thermometer into the thickest portion of the food or the center of the dish. Egg dishes and dishes containing ground meat and poultry should be checked in several places.



*Check manufacturer’s instructions as to how far the thermometer must be inserted in a food to give an accurate reading. If instructions are not available, check the stem of the thermometer for an indentation or “dimple” that shows the end of the sensing device. The probe must be inserted the full length of the sensing area. For dial instant-read thermometers, this is usually 2 to 3 inches and less for digital instant-read thermometers.*

**Know how. Know now.**

# Common Food Thermometers

Some types of thermometers commonly used in the kitchen include:

**Dial Oven-Safe (Bimetal)**  
Designed to stay in food during cooking. Insert 2 to 2-1/2 inches deep in the thickest part of the food, at the beginning of the cooking time. It remains there throughout cooking and is not appropriate for thin food.



**Dial Instant-Read (Bimetal)**  
Not designed to stay in food during cooking. Insert probe the full length of the sensing area, usually 2 to 2-1/2 inches. If measuring the temperature



of a thin food, such as a hamburger patty or boneless chicken breast, insert probe sideways with the sensing device in the center. About 15 to 20 seconds are required for the temperature to be accurately displayed.

**Digital Instant-Read (Thermistor)**  
Not designed to stay in food during cooking. The heat sensing device is in the tip of the probe. Place the tip of the probe in the center of the thickest part of the food. About 10 seconds are required for the temperature to be accurately displayed.



**Oven Cord** — Frequently used in foods such as roasts and turkeys during cooking in the oven. The base unit sits on stovetop or counter and the thermometer probe is placed in

the food. An advantage of this thermometer is the ease of tracking food temperatures while maintaining oven heat.



**Disposable Temperature Indicators (Single-use)** — Designed to be used only once for a specific temperature range. Temperature-sensitive material changes color when the desired temperature is reached. Should only be used with food for which they are intended. Place approximately 1/2" deep (follow manufacturer's directions). Reads in 5-10 seconds.



## Tips for Using Thermometers at Home

- ✓ Use a clean thermometer that has been washed in hot soapy water and hot rinse water before and after use. Most thermometers should not be immersed in water — check manufacturer's directions.
- ✓ To prevent overcooking, begin checking the temperature toward the end of cooking but before the food is expected to be "done."
- ✓ Bacteria normally are found only on the external surface of larger cuts of meat like beef roasts and beef steaks. Beef roasts and beef steaks can be considered safe if cooked to 145° F in the center since the outside will reach a temperature high enough to kill bacteria on the surface. When foods are cooked to less than 160° F, wait until toward the end of the cooking period before inserting a thermometer. Otherwise, it is possible bacteria from the outside could be transmitted to the inside.

When meat is ground up, bacteria on the surface can get mixed throughout the meat. Mechanically tenderized meat has been punctured or injected, which can introduce bacteria into the center of the meat. Ground beef, veal, lamb, pork, bison and game meat must be cooked to an internal temperature of 160° F. Ground poultry must be cooked to an internal temperature of 165° F.

# RECOMMENDED FOOD TEMPERATURES

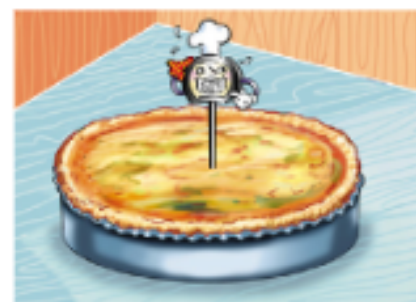
These temperatures are recommended by the U.S. Department of Agriculture and U.S. Food and Drug Administration for consumers. They are not intended for processing, institutional or foodservice preparation. Foodservice workers should consult their state or local food code, or health department.

Never partially cook food for finishing later because this increases the risk of bacterial growth on the food. Bacteria are killed when foods reach a safe internal temperature. When preparing food in the oven, set the oven to at least 325° F.



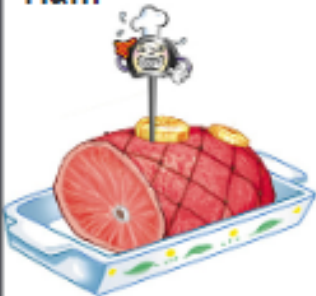
## Celsius Conversion Table



32° F	=	0° C
140° F	=	60° C
145° F	=	63° C
160° F	=	71° C
165° F	=	74° C
170° F	=	77° C
180° F	=	82° C
325° F	=	163° C

FOOD	TEMP. (°F)	TIPS
<b>Casseroles/Combination Dishes and Leftovers</b>		
<b>Casseroles/Combination Dishes and Leftovers</b>	165° F	At this temperature, the food will be hot and steamy throughout, a measurement that can only be determined by a food thermometer. Thoroughly cook meat and poultry before combining with other ingredients in casseroles and combination dishes.
<b>Eggs and Egg Dishes</b>		
<b>Eggs</b> (poached, fried, scrambled and hard-cooked eggs)	160° F	It's difficult to insert a thermometer into these forms of eggs to measure if they've reached 160 F. It's necessary to rely on a visual indicator: Cook so both yolks and whites are firm, not runny.
<b>Egg Dishes</b> (soft stirred custard, baked custard, pumpkin pie, strata, quiche, bread pudding, hollandaise sauce, etc.)	160° F	At 160° F, eggs will be thick enough to coat a metal spoon with a thin film for soft stirred custards. For other egg dishes, such as quiche, a knife inserted near the center should come out clean.
<b>Ground Meat and Poultry</b>		
<b>Ground Beef, Veal, Lamb, Pork, Bison and Game Meat</b> (game meat includes deer, elk, moose, caribou, antelope and rabbits)	160° F	Cutting into cooked ground meat and using color as an indicator of safety is no longer considered reliable. Some ground meat may turn brown before it has reached a temperature that destroys bacteria. A hamburger cooked to 160° F, measured with a food thermometer throughout the patty, is safe regardless of color. Hamburger patties are a common ground meat food. A 1/2 inch thick ground beef patty is more likely to cook thoroughly in the middle without being overdone on the outside than one that is too thick. A pound of beef, before cooking, yields 4 patties measuring approximately 1/2" by 4."
<b>Ground Poultry</b> (turkey and chicken)	165° F	Ground poultry is cooked 5 degrees higher than ground beef, veal, lamb and pork.





FOOD	TEMPERATURE	TIPS
<b>Hot Dogs, Luncheon Meats, Cold Cuts, Fermented and Dry Sausage, and other Deli-Style Meat and Poultry Products</b>		
<b>Hot Dogs</b>	165° F	Although all hot dogs are fully cooked, always reheat before eating. Use a food thermometer to make sure hot dogs reach 165 °F or are steamy hot throughout.
<b>Luncheon Meats, Cold Cuts, Fermented and Dry Sausage, and Other Deli-Style Meat and Poultry Products</b>	Heat these ready-to-eat foods until steamy hot throughout to help protect susceptible populations from listeriosis (see right).	<p>People at risk for listeriosis include: pregnant women and newborns, older adults, and people with weakened immune systems caused by cancer treatments, AIDS, diabetes, kidney disease, etc.</p> <p>Although these foods are fully cooked, they can become contaminated with <i>Listeria monocytogenes</i>. Heat these foods until they are steamy hot throughout.</p>
<b>Large Cuts of Beef, Veal, Lamb, Bison</b>		
<b>Large Cuts of Beef, Veal and Lamb: Roasts and Steaks</b> 	145° F - medium rare 160° F - medium 170° F - well done 160° F - all rolled, tenderized or scored meats.	<p><b>CAUTION:</b> Do not serve any rolled, tenderized or scored large cuts of beef, veal or lamb below 160° F. The process of cutting or puncturing meats before cooking may force any surface bacteria into the center. When in doubt as to how a piece of meat has been handled, cook to 160° F.</p> <p>Large cuts of beef, veal or lamb — like roasts and steaks — can stay slightly pink in the center if they have reached at least 145° F. Beef roasts cooked to 160° F will generally have very little pinkness to the meat, and the juices will not be pink or red.</p> <p>A consumer would not be able to determine if a roast that was pink in the center had reached 145° F without a food thermometer.</p>
<b>Pork</b>		
<b>Pork Chops and Roasts</b>	160° F 	Pork chops may have just a trace of pink color at this temperature. Pork roasts are safe when cooked to 160° F even though the center of the roast may be somewhat pink. A consumer would not be able to determine visually if a pork roast that was pink in the center had reached a safe temperature.
<b>Ham</b> 	160° F - purchased “fresh” or described as “cook-before-eating” 140° F - purchased fully cooked 165° F - reheated or repackaged	<p>Both vacuum-packaged fully cooked hams and canned hams can be eaten cold just as they come from their packaging. However, if you want to heat these fully cooked hams, set the oven no lower than 325° F and heat to an internal temperature of 140° F.</p> <p>For fully cooked ham that has been repackaged from its original manufacturer’s packaging or for leftover fully cooked ham, heat to 165° F for greatest safety.</p>

FOOD	TEMPERATURE	TIPS
<b>Poultry</b>		
<b>Chicken, Turkey, Duck and Goose</b>	165° F 	<p>When cooking whole poultry, the food thermometer should be inserted into the thickest part of the thigh (avoiding the bone).</p> <p>If cooking poultry parts, insert food thermometer into the thickest area, avoiding the bone. The food thermometer may be inserted sideways, if necessary. When the food is irregularly shaped, the temperature should be checked in several places.</p>
<b>Stuffing</b>	165° F - in casserole or in turkey 	<p><b>CAUTION:</b> The safest way to cook stuffing is in a casserole in a 325° F oven. The internal temperature of the stuffing must reach 165° F.</p> <p>Today's turkeys cook faster than in the past as they now are bred to have a greater portion of breast meat that cooks faster than dark meat. If you stuff your bird, you take the chance of your turkey becoming overdone before your stuffing has reached a safe temperature.</p> <p>The ingredients for the stuffing can be prepared ahead of time. Keep wet and dry ingredients separated and chilled. Mix wet and dry ingredients just before putting stuffing into a casserole or filling the turkey cavity. If you choose to stuff your turkey, make sure it is stuffed loosely. The stuffing should be moist, not dry, since heat destroys bacteria more rapidly in a moist environment.</p> <p>Cook a turkey immediately after stuffing it. Check the temperature in the center of the stuffing. Even if the turkey has reached a safe internal temperature of 165° F, the center of the stuffing inside may not have reached 165° F and can cause food-borne illness. BOTH temperatures of 165° F for the turkey and the stuffing must be met.</p>
<b>Seafood</b>		
<b>Fin Fish</b>	<i>The FDA 2009 Food Code recommends cooking most seafood to an internal temperature of 145° F for 15 seconds. When using the microwave, rotate the dish several times to ensure even cooking. Follow recommended standing times. After standing time is completed, check seafood in several spots with a meat thermometer to be sure the product has reached the proper temperature.</i>	<p>When you slip the point of a sharp knife into the flesh and pull aside, the edges should be opaque and the center slightly translucent with flakes beginning to separate. Let the fish stand three to four minutes to finish cooking.</p>
<b>Shrimp, Lobsters and Crab</b>		<p>Should turn red and the flesh should become pearly opaque.</p>
<b>Scallops</b>		<p>Should turn milky white or opaque and firm.</p>
<b>Clams, Mussels &amp; Oysters</b>		<p>Watch for the point at which their shells open. That means they're done. Throw out those that stay closed.</p>

# Calibrating a Thermometer

To assure the accuracy of a thermometer, check — and adjust if necessary — by comparing its temperature reading with the temperature of a known standard. This process is called calibrating a thermometer.

How often a thermometer is calibrated will depend on use. Calibrate a thermometer whenever it is dropped and when first purchased. If a thermometer is used frequently, calibrate it weekly or monthly. On the other hand, if it has been several months since it has been used, calibrate it before use.

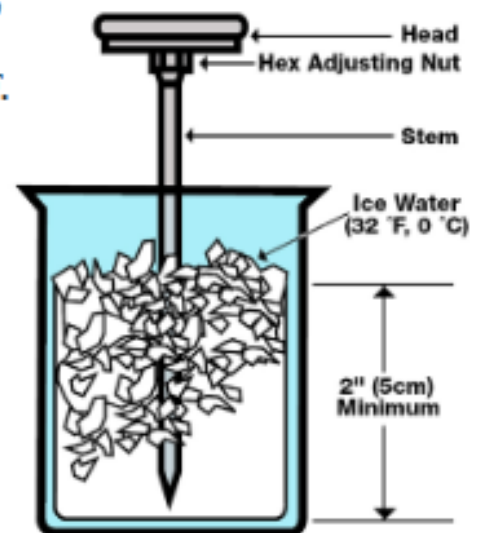
Some thermometers can be calibrated by turning an adjusting nut under the head of the thermometer. Check manufacturer's instructions. The easiest way to calibrate a thermometer is with the ice water method.

Even if a food thermometer can't be calibrated, it should still be checked for accuracy, as described in the ice water method. Any inaccuracies can be taken into consideration when using that food thermometer, or the food thermometer can be replaced.

For example, if a thermometer is checked by the ice water method and reads 34° F instead of the recommended 32° F, it is reading 2 degrees too high and 2 degrees would need to be ADDED to final cooking temperatures.

## Ice Water Method

1. Fill a large glass with finely crushed ice.
2. Add clean tap water to the top of the ice and stir well.
3. Immerse the food thermometer stem a minimum of 2 inches into the mixture, touching neither the sides nor the bottom of the glass. Wait a minimum of 30 seconds before adjusting. TIP: For ease in handling, the stem of the food thermometer can be placed through the clip section of the stem sheath and, holding the the sheath horizontally, lowered into the water.
4. Without removing the stem from the ice, hold the adjusting nut under the head of the thermometer with a suitable tool and turn the head so the pointer reads 32° F.



## Resources:

- FDA. Food Code 2009. <http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/FoodCode/FoodCode2009> (Accessed June 25, 2010).
- USDA. Kitchen Thermometers. [http://www.fsis.usda.gov/factsheets/Kitchen\\_Thermometers/index.asp](http://www.fsis.usda.gov/factsheets/Kitchen_Thermometers/index.asp) (Accessed June 25, 2010).
- USDA. Is It Done Yet? [http://www.fsis.usda.gov/is\\_it\\_done\\_yet/brochure\\_text/index.asp](http://www.fsis.usda.gov/is_it_done_yet/brochure_text/index.asp) (Accessed June 25, 2010).
- USDA. Be Food Safe. [http://www.fsis.usda.gov/Be\\_FoodSafe/index.asp](http://www.fsis.usda.gov/Be_FoodSafe/index.asp) (Accessed June 25, 2010).
- USDA. Thermy. [http://origin-www.fsis.usda.gov/Food\\_Safety\\_Education/Food\\_Thermometer\\_Research/index.asp](http://origin-www.fsis.usda.gov/Food_Safety_Education/Food_Thermometer_Research/index.asp) (Accessed June 25, 2010).
- USDA. Food thermometers are key to food safety. [http://origin-www.fsis.usda.gov/PDF/Thermometers\\_Are\\_Key\\_FactSheet.pdf](http://origin-www.fsis.usda.gov/PDF/Thermometers_Are_Key_FactSheet.pdf) (Accessed June 25, 2010).

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