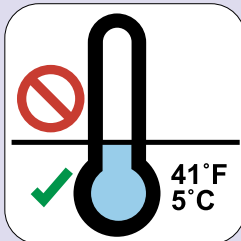


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Cook–Chill

Lesson Plan - Class No. 2

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Target Group: Adolescents to adults, including multicultural and limited-literacy audiences

Time Needed: 1.5 to two hours

Note: This lesson can be divided into two shorter lessons based on the “cook” and “chill” concepts. To adjust time, choose one or two recipes to illustrate the concepts.

Overall goal: To improve knowledge and behavior related to safe food handling to reduce the risk of foodborne illness

Objectives

- Participants will know that leftovers and all perishable food must be refrigerated within two hours of purchase or preparation.
- Participants will know the “danger zone” temperatures in which bacteria grow rapidly.
- Participants will know that a clean food thermometer should be used to check the internal temperature of meat, poultry, eggs, mixed dishes and perishable leftovers.
- Participants will be able to recognize safe thawing techniques.
- Participants will know that hot foods must be placed in shallow containers and then refrigerated.

Key Concepts

The best way to avoid foodborne illness is to prevent it. Preventing foodborne illness requires the practice of safe food handling at home.

- **Clean/wash** hands and surfaces often.
- **Cook** to recommended internal temperatures.
- **Separate, don’t cross-contaminate** at any point from grocery store/garden to home.
- **Chill** promptly, using an appliance thermometer to be sure that your refrigerator is at 40 degrees Fahrenheit (4.5 degrees Celsius) or below and your freezer is at 0 degrees Fahrenheit (minus 18 degrees Celsius) or below.

Lesson Preparation

This class will focus on Cook and Chill.

Supplies Needed

See page 2 for ingredients to purchase and materials and equipment to gather.

Take-home incentives, one per participant (optional, but encouraged)

- Calibrated food thermometer and refrigerator magnet
- Refrigerator/freezer thermometer
- “Steps to Healthy Economical Meals” cookbook

Optional Activities

See “Skit Cards.” Use the cards that pertain to the concepts of “Cook” and “Chill” as ice breakers or review. See the directions and props needed on the cards.

Note to instructor: Know your audience and its cultural foodways.

- If you know you have Hindu participants, substitute ground turkey for ground beef in the sloppy Joes.
- If you know you have Muslim participants, refrain from referring to pork products.
- If you know your participants will be vegetarian, you may choose to skip the foods containing meat and meat-related questions/discussion items.

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Supplies Needed

Purchase Ingredients

	Produce	Packaged and Canned Goods	Dairy	Fresh Meat
Fruit Salad		1 pkg. instant vanilla pudding 2 (7-oz.) cans mandarin oranges, light 15-oz. can pineapple chunks, light	Small container buttermilk 16-oz. container whipped topping	
Sloppy Joes	1 medium onion	1 pkg. whole-grain hamburger buns Ketchup Small can/bottle tomato juice	¼ lb. block cheddar cheese	2 lbs. ground beef
Apple Cranberry Toss	1 bunch green onions 1 head lettuce 2 medium apples	Small bag dried cranberries Small bag walnuts Vinaigrette dressing		

Gather Materials and Equipment

- Recipes for each participant*
- Food thermometer for each participant
- Refrigerator thermometer for each participant
- Temperature magnet for each participant
- Thermometer calibration supplies: food thermometer, large insulated cup or measuring cup, crushed ice, pliers or other tool needed for calibration and pictures illustrating how adjustment of thermometers are accomplished (two 8 ½- by 11-inch sheets).
- Illustration of “**danger zone**” (8½- by 11-inch sheet).
- Small plates
- Small bowls
- Napkins
- Spoons
- Forks
- Plastic glasses for water or juice
- Paper towels
- “**Rate of bacterial growth activity:**” You will need five clear, heavy-duty, gallon-size zip-top bags. Count out dried beans, which represent bacteria, into the bags as follows:
 - Bag 1 contains 10 beans.
 - Bag 2 contains 40 beans, representing 30 minutes at room temperature.
 - Bag 3 contains 160 beans, representing one hour at room temperature.
 - Bag 4 contains 640 beans, representing one hour and 30 minutes at room temperature.
 - Bag 5 contains 2,560 beans, representing two hours at room temperature.

*Picture recipes are available.

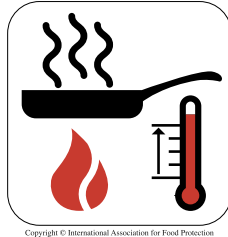
Calibration Activity	Fruit Salad	Sloppy Joes	Apple Cranberry Toss
Large insulated cups filled with crushed ice Food thermometers	Mixing bowl Mixing spoon Liquid measuring cup Measuring spoons Wisk Can opener Strainer or colander	Electric skillet (unless stove is available) Cutting board Dry measuring cup (1 c.) Measuring spoons Cheese grater Mixing spoon	Cutting board Chef's knife Dry measuring cups (1 c., ½ c.) Liquid measuring cup Large bowl Mixing utensils

Talking Points

Last time, we talked about the importance of “clean” and “separate” for preventing foodborne illness. Today we will talk about the value of “cook” and “chill.”

Cook

- Disease-causing bacteria in foods can be destroyed through proper cooking (cooking to a safe temperature). The best way to be sure that meat, fish and egg dishes are cooked to a safe internal temperature is by using a food thermometer.
- Discuss safe internal temperatures of different foods. **(Hand out magnets.)**
- Show pictures of how to place the food thermometer in various foods to attain an accurate temperature reading.
- Once food has reached the proper internal temperature, keep the food hot – above 140 degrees Fahrenheit (60 degrees Celsius). **(Hand out food thermometers.)**



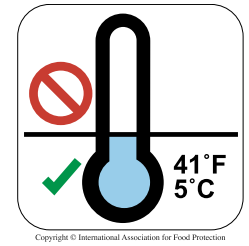
Activity – Calibration (Ice Point Method)

- Invite participants to fill an insulated cup with crushed ice and water. You must have enough ice to provide an environment of 32 F (0 C), so you may need more ice during the process.
- When the ice-water mixture has stabilized (four to five minutes), ask participants to insert their thermometer to be calibrated.
- Demonstrate how to hold the stem of the thermometer an inch from the sides of the cup to avoid error.
- If the thermometer is not accurate -within +/- 2 degrees of 32 F (0 C) - ask participants to adjust their thermometer. Use pictures of two types of food thermometers to illustrate how they can be adjusted if needed.

Activity (optional) – Distribute Skit Cards relating to the concept of “Cook.” See directions on cards.

Chill

- Cooking to a safe internal temperature kills bacteria; cooling foods to temperatures below 40 degrees Fahrenheit (4.5 degrees Celsius) slows bacterial growth.
- Freezing food to 0 degrees Fahrenheit (-17.8 degrees Celsius) stops bacterial growth. **(Hand out appliance thermometers.)**



Two-hour rule - Perishable food such as fruits and vegetables, especially cut fruits and vegetables; opened canned foods; cooked food; and raw meats and fish must be refrigerated within two hours. If the foods are in a hot car or out in the sun, they need to be refrigerated within one hour. **(Show picture of thermometer indicating “danger zone.”)**

- The danger zone is between 40 degrees Fahrenheit (4.5 degrees Celsius) and 140 degrees Fahrenheit (60 degrees Celsius).
- These are the temperatures between which bacteria thrive when food and moisture are available; under these conditions, bacteria can double every 15 to 20 minutes. The higher the temperature, the faster they can multiply.
- When perishable food is left in the danger zone for two hours or longer, it should be thrown out.
- **True or False?** If it tastes good, it’s safe to eat.
This is False.
Bacteria that make people sick usually do not affect the taste, smell or appearance of food.

Activity – Bacterial Growth

- Show participants the bags containing dried beans (“bacteria/germs”) in the following order: 10 germs, 40 germs, 160 germs, 640 germs and finally 2,560 germs.
- Explain that most of us can fight off bacterial growth that takes place before two hours, but remember, this amount will double in another 15 to 20 minutes.
- Very young children, the elderly, the ill and surgical patients may not be able to fight off smaller numbers of disease-causing bacteria
- Some strains of bacteria will cause serious illness in almost anyone.

Talking Points

- If meat or cooked rice is left in the danger zone for more than two hours, can cooking kill the bacteria and make it safe? (***No. If bacteria multiply too long, they may produce a toxin/poison that can cause illness.***)
- When shopping for food, gather the canned foods and other nonperishable items into your cart before dairy, meat and other perishable foods.
- In hot weather, bring a cooler with ice if you are more than an hour from the grocery store. Transport meat, dairy products and other perishable foods in the cooler. Make grocery shopping the last stop before leaving for home.
- Thaw food in the refrigerator, in cold water or in a microwave. If thawed in cold water or a microwave, it must be cooked immediately.
- Fresh fruit need not be refrigerated but must be eaten soon. Avoid waste by purchasing only what you will use.
- Refrigerate cut, peeled or cooked fresh fruits and vegetables within two hours of purchase. Do not purchase bruised or damaged fruit or vegetables.
- Divide cooked food into shallow containers and refrigerate promptly. Thick, cooked food such as sloppy joes and tacos should be no more than 2 inches deep. Foods such as soup should be no more than 3 inches deep. Cake pans make excellent cooling pans because they are shallow.
- Do not store milk and eggs in the refrigerator door because they can get too warm. They must be in coldest area of refrigerator (not freezer).
- Don't pack the refrigerator or freezer full. The foods in these appliances need air circulation to cool properly.

Activity (optional) – Distribute Skit Cards relating to the concept of “Chill.” See directions on cards.

Today we will be preparing three dishes: Fruit Salad, Sloppy Joes and Apple Cranberry Toss.

Teaching Tips

- Demonstrate the use of a food thermometer before Sloppy Joes are served.
- Ask for volunteers throughout the class to help prepare the meal. They can chop, season, mix, etc.
- Make the class as interactive as possible.
- Probe for questions throughout the class.
 - Ask participants about what kinds of food they prepare, like, etc.
 - What do your kids eat?
 - What would you like to learn to make?

Activity – Taste Testing

Leftover Ideas

- Serve leftover Sloppy Joe mix over rice or roll in a tortilla with cheese.
- Serve leftover Sloppy Joe mix over a baked potato.

Review main concepts. Let everyone sample the food. Ask if anyone has questions.

After you are done eating, remind participants that leftovers should be refrigerated within two hours.

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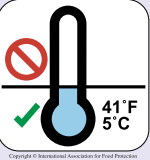
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Cook–Chill

RECIPE

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Fruit Salad

(makes 12 servings)

Ingredients

- 1 package instant vanilla pudding
- 1 cup buttermilk
- 1 (16-ounce) container light whipped topping
- 2 (7-ounce) cans mandarin oranges, drained
- 1 (15-ounce) can pineapple chunks, drained

Directions

1. Whisk pudding and buttermilk until well-blended.
2. Fold in whipped topping.
3. Toss in well-drained fruit and chill until ready to serve.

Apple Cranberry Salad Toss

(makes eight servings)

Ingredients

- 1 head of lettuce, chopped
- 2 medium apples, sliced
- 1 bunch green onions, sliced
- $\frac{3}{4}$ cup vinaigrette dressing
- 1 cup dried cranberries
- $\frac{1}{2}$ cup walnuts, chopped

Directions

1. Wash the lettuce, apples and green onions.
2. Chop the lettuce and slice the apples and green onions.
3. Toss the lettuce, apples, walnuts, cranberries and onion in a large bowl.
4. Add the dressing and toss to coat.

Sloppy Joes

(makes eight servings)

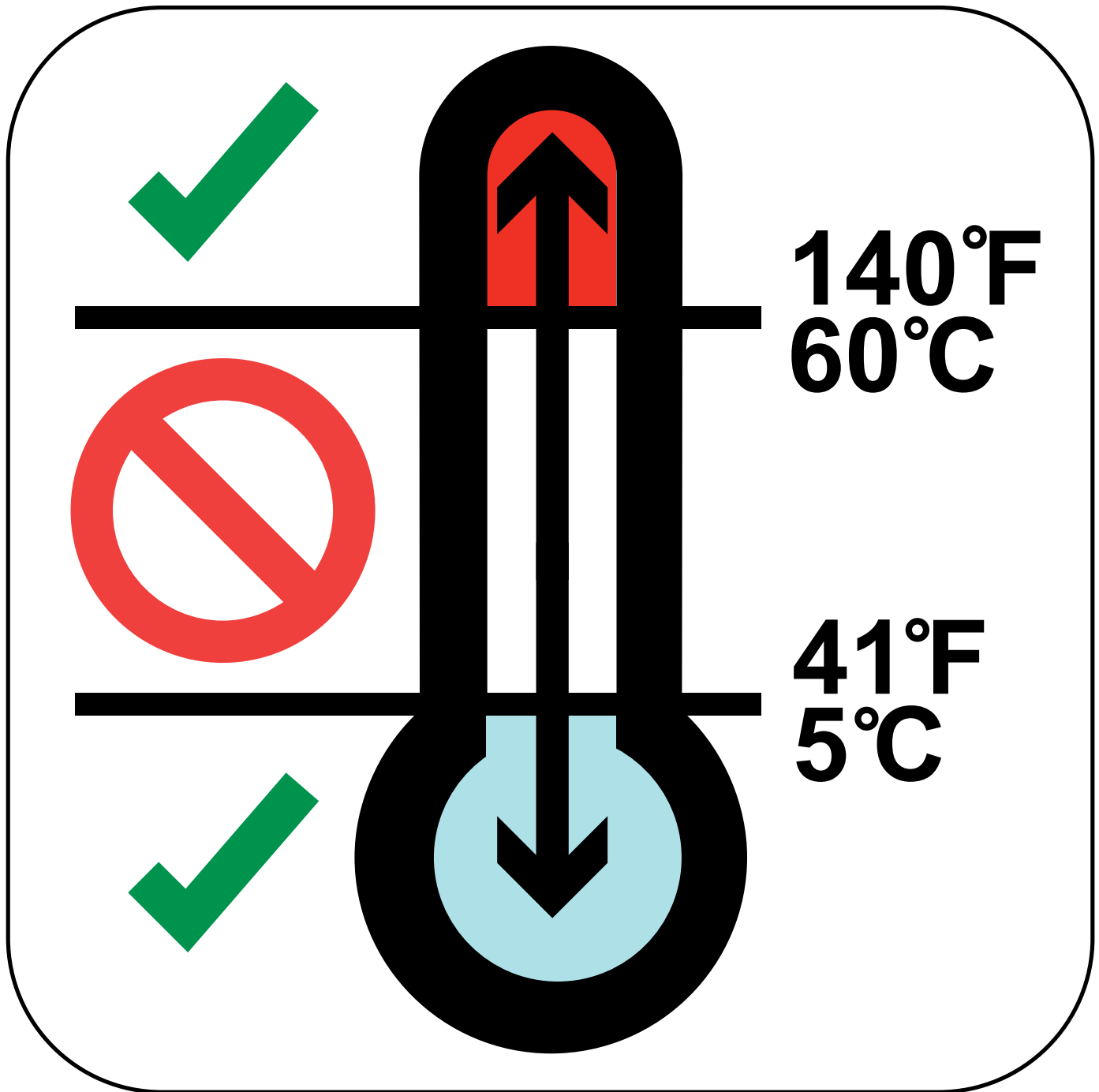
Ingredients

- 2 pounds ground beef (or turkey)
- 1 onion, chopped
- 1 cup ketchup
- 1 cup tomato juice
- 1 cup cheddar cheese, shredded
- 1 package whole-grain hamburger buns

Directions

1. Rinse and chop the onion.
2. Brown the ground beef and onion and then drain the fat off.
3. Stir in 1 cup ketchup, 1 cup tomato juice and 1 cup cheese.
4. Let food simmer while the rest of the meal is prepared.
5. Use a food thermometer to be sure the temperature of the Sloppy Joe mixture reaches the safe temperature of 165 degrees F (74 degrees C). Serve on hamburger buns.

Danger Zone



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