Lesson 12
Keeping Food Safe to Eat

Knowledge objectives
Students will define foodborne illness and identify methods to prevent it. They will understand the special risks of foodborne illness to pregnant mothers and their unborn babies.

Behavioral objectives
Students will wash hands correctly and will practice thinking critically about methods of preventing foodborne illness.

Review of Lesson 11
Ask students: How many of you went to the grocery store last week? Will someone give us an example of how they used the Nutrition Facts panel? What did you find out when you used unit pricing to compare prices?

Doing the lesson
What is foodborne illness? Have you ever had stomach cramps, headache, diarrhea, vomiting, fever and body aches? Did you think you had the flu? Could it have been foodborne illness?

Symptoms of foodborne illness are similar to the flu, but foodborne illness is caused by eating or drinking harmful microorganisms (bacteria, parasites, viruses) or chemical contaminants found in some foods or drinking water.

Microorganisms are a lot like us: they need food, water and a mild temperature to thrive. They grow best in protein- and water-rich foods, like eggs, meat, seafood, poultry, milk and other dairy products. These are called perishable foods. Handle them carefully — they spoil quickly!

Mold, odor, color and texture changes can be signs of spoiled food that can cause foodborne illness. But some spoiled foods look, smell and taste just fine. If you think food is spoiled, don’t even taste it. Wrap it carefully and dispose of it

Supplies needed
(Also see activities for supplies needed)
• soap, warm water and paper towels

Core activities
• Take a Taste for You and Your Baby
• Foodborne Risks for Pregnant Women
• Food Safety Trivia

Student handouts
• Which Lunch is Safe to Eat? (H-33)
• Clean, Separate, Cook, Chill Match-Up (H-38)
• Teen Parents Newsletter: Keeping food safe to eat*

Teacher references
• http://www.cfsan.fda.gov/pregnancy.html
• Clean-Cook-Chill-Separate Match-Up Answer Key
• Which Lunch is Safe to Eat? Answer Key
• Germs and Food Poisoning Answer Key
• Taking Care of Leftovers Answer Key
so that humans and animals cannot get to it.

Anyone can contract foodborne illness, but for some people, it can be very serious. You and your unborn baby are at high risk from some foodborne illnesses because your immune system is weakened while you are pregnant. This makes it harder for you and your unborn baby to fight off harmful foodborne microorganisms. For both mother and baby, foodborne illness can cause serious health problems, even death. Good sanitation and safe food handling can prevent most foodborne illness.

Tell students there are four simple steps to food safety: Clean, Separate, Cook, Chill. Give everyone a copy of the newsletter and refer to pages 1 and 2. Discuss each step.

When you are talking about handwashing, read the three critical handwashing steps while a student demonstrates handwashing. Tell students that handwashing is the number one way to prevent the spread of germs:

3 Critical Handwashing Steps:
1. Wet your hands thoroughly with warm water and add soap.
2. Thoroughly scrub your hands, wrists, fingernails, and in between fingers for at least 20 seconds.
3. Rinse, then dry hands with a clean cloth towel or use a paper towel so the germs are thrown away.

Ask students to think of some ways to make sure they wash their hands for at least 20 seconds.

After the discussion, give each student a copy of the Clean, Separate, Cook, Chill Match-up work sheet. Give them directions: On the right are examples of unsafe practices that could lead to foodborne illness. Draw a line to the word(s) on the left that describes the type of unsafe practice. Have them work individually or in pairs to complete the work sheet. Go over the correct answers.

Tell students that certain foodborne diseases can be harmful – even fatal – to pregnant women and their unborn babies.

Do Foodborne Risks for Pregnant Women activity
Do Take a Taste for You and Your Baby activity

The theme is desserts that are good for you, and baby too. Suggested foods for tasting include Apple Crisp Sundaes and Guiltless Chocolate Peanut Butter Dip.

Store food safely

Refer to the refrigerator and freezer storage chart on page 3 of the newsletter. Suggest that students hang this chart in their kitchens to remind them of how long foods should be stored. Storing food correctly helps prevent foodborne illness. Perishable foods (like meat, seafood, poultry, dairy products and eggs) must be kept cold to keep bacteria from growing and dividing.

Foods you should store in a freezer at 0 degrees: frozen juices; frozen fruits and vegetables; meat, fish, chicken and turkey; ice cream; and extra bread, flour, nuts and dried fruit.
Foods you should store in a refrigerator at 40 degrees or less: milk, cheese, butter or margarine; eggs; fresh fruits and vegetables; lunch meat; fresh and cooked meat, fish, chicken, turkey; leftover cooked food; and opened condiments such as salad dressing and ketchup.

Foods you should store in a cool, dry place: cereal, flour, sugar, spices, canned food, dry beans and peas, spaghetti, noodles, macaroni, bread, crackers, dry milk, potatoes, onions, and canned foods.

Keep food safe away from home
Ask students if they like to pack a lunch to bring to school or work. Refer to page 2 in the newsletter, Safe food – to go! Read the page together. After each section, ask the students if they have other suggestions or tips. Encourage them to write additional tips on the page.

Which lunch is safe to eat?
Give each student a copy of the Which Lunch is Safe to Eat? work sheet. Have students work in pairs to complete it. As a group, discuss the correct answers using the Which Lunch is Safe to Eat? Answer Key.

Review of Lesson 12
Do Food Safety Trivia activity
Teacher reference

Clean, Separate, Cook, Chill Match-Up

Answer Key

- Using the kitchen sponge to wash your child’s face. (Separate, Clean)
- Thawing food on the kitchen counter. (Chill)
- Waiting more than two hours after shopping to store groceries properly. (Chill)
- Leaving leftovers at room temperature to cool. (Chill)
- Using the same plate for raw and grilled meat when you barbecue. (Separate, Clean)
- Cooking eggs only until yolks are runny. (Cook)
- Using the same cutting board for meat and vegetables without washing it between uses. (Separate, Clean)
- Marinating meat at room temperature. (Chill)
- Stirring food and then tasting from same spoon. (Separate, Clean)
- Eating hamburgers that are still pink inside. (Cook)
- Eating Easter eggs that have been hidden for more than two hours. (Chill)
- Preparing food without washing hands first. (Clean)
- Leaving “doggie bags” full of leftovers from a restaurant at room temperature overnight. (Chill)
Core activity

Take a Taste for You and Your Baby

You can prepare desserts that taste great and are packed with nutrients for you and your baby.

Guiltless Chocolate Peanut Butter Dip
Makes 8 servings

Equipment:
• medium saucepan
• measuring spoons
• knife
• serving bowl
• platter

Ingredients:
• 2 medium bananas
• 16 large strawberries
• ½ cup unsweetened cocoa powder
• ½ cup sugar
• ½ cup low-fat milk
• 3 tablespoons corn syrup
• 2 tablespoons peanut butter
• ½ teaspoon vanilla

Instructions:
1. Wash and prepare fruit.
2. Mix cocoa, sugar, milk, corn syrup and peanut butter in saucepan.
3. Cook and stir over medium heat until hot.
4. Remove from heat and stir in vanilla.
5. Pour into a serving bowl. Serve warm with bananas and strawberries for dipping.

Apple Crisp Sundaes
Makes 4 servings

Equipment:
• knife
• mixing bowl
• measuring cups
• cutting board
• large spoon
• toothpicks
• measuring spoons
• 1-quart baking dish

Ingredients:
• 3 cups peeled and sliced apples (3 medium)
• ½ cup old-fashioned oatmeal, uncooked
• 1 tablespoon brown sugar
• 2 tablespoons water
• 1 teaspoon cinnamon

For topping:
• 4 ounces low-fat vanilla yogurt
• ¼ teaspoon cinnamon
• ⅛ teaspoon nutmeg
• ¾ cup light whipped topping

Instructions:
1. Mix apples with oats, brown sugar, water and cinnamon in baking dish. Bake in conventional oven or microwave oven using directions below.
   • Microwave oven: Stir ingredients together in a microwave-safe baking dish. Cover with wax paper and microwave on high (100 percent power) 5 to 7 minutes, rotating a quarter turn halfway through cooking.
   • Conventional oven: Stir ingredients together in an oven-safe baking dish. Bake at 350 degrees for 25 minutes.
2. In a separate bowl, stir seasonings into yogurt. Fold in whipped topping. Keep chilled until ready to use.
3. Serve warm with a spoonful of chilled topping.
Teacher reference
Which Lunch is Safe to Eat? Answer Key

**Lunch #1:** Yum — The turkey sandwich is frozen and packed with a frozen gel pack, which should help keep the milk cold.

- Frozen turkey sandwich packed with a frozen gel pack
- Carrot sticks
- Apple
- Cookie
- Cold carton of milk

**Lunch #2:** Yum — The peanut butter sandwich and juice box don’t need to be kept cold, but the yogurt was frozen and will keep celery sticks cold.

- Peanut butter sandwich
- Carton of yogurt (frozen)
- Celery sticks
- Plum
- Juice box

**Lunch #3:** Yuck — The pizza should be frozen and a frozen gel pack should be included. A cold juice box isn’t enough to keep the pizza safe to eat.

- Leftover pizza
- Applesauce
- Green pepper slices
- Cold juice box

**Lunch #4:** Yum — The meat sandwich was frozen and the frozen juice box also helps keep it cold.

- Frozen roast beef sandwich
- Chips
- Orange
- Frozen juice box

**Lunch #5:** Yuck — The meatloaf sandwich should have been frozen and packed with a frozen gel pack. A container of cold peaches isn’t enough to keep the meat safe until lunch.

- Leftover meatloaf sandwich
- Small container of cold peaches
- Lettuce and tomato slices
- Cookies
- Juice box
Core activity

Food Safety Trivia

1 Divide the class into two teams. Give each team a bell or clicker and have each team pick someone to sound the bell/clicker.

2 When you read a food safety trivia question, each team should consult and sound its bell/clicker when the team thinks it knows the correct answer. The first team to sound the bell/clicker gets the first chance to answer the question. If the first team answers correctly, it receives one point.

3 If the team answers incorrectly, the other team gets a chance to answer the question. If the other team answers the question correctly, it earns two points.

4 If time permits, continue playing until all questions have been answered.

Teaching tip
Scoring is optional. It’s not necessary to keep score for the students to have fun playing Food Safety Trivia.

Purpose
Students will review safety issues that prevent foodborne illness.

Supplies needed
• Food Safety Trivia Questions (H-34)
• Two bells or clickers (see Advance preparation)

Teacher reference
• Food Safety Trivia Answer Key

Advance preparation
• Purchase bells or clickers. It’s best not to use whistles, as they need to be sanitized after each game.
• Optional: Copy the Food Safety Trivia Questions, laminate them and cut them apart.
## Food Safety Trivia Answer Key

<table>
<thead>
<tr>
<th>Temperatures between 40 and 140 degrees F. are called the <strong>Danger Zone</strong> for food.</th>
<th>Symptoms of a <strong>foodborne</strong> illness are like the flu.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number one way to prevent the spread of germs is <strong>hand washing</strong>.</td>
<td><strong>True</strong>: Bacteria are everywhere including on your hands and everything you eat and touch.</td>
</tr>
<tr>
<td><strong>False</strong>: You don’t need to wash your hands before and after handling food.</td>
<td>Wash your hands in warm water for at least <strong>20</strong> seconds.</td>
</tr>
<tr>
<td>Meat, seafood, poultry, milk, butter, eggs, fresh fruits and vegetables should be stored in the refrigerator at <strong>40</strong> degrees F.</td>
<td>Cereal, flour, sugar, canned foods and pasta should be stored in a <strong>cool and dry</strong> place.</td>
</tr>
<tr>
<td><strong>True</strong>: You can’t see, smell or taste the bacteria that cause foodborne illness.</td>
<td><strong>False</strong>: Eggs freeze well.</td>
</tr>
<tr>
<td>Add a <strong>frozen gel pack</strong> to keep cold food cold in a lunch box.</td>
<td>Foods should not be left out at room temperature for more than <strong>2 hours</strong>.</td>
</tr>
<tr>
<td><strong>True</strong>: Moms-to-be and babies are at a higher risk from foodborne illness.</td>
<td><strong>Microorganisms</strong> need warmth, moisture and food to grow and multiply.</td>
</tr>
<tr>
<td>Most foodborne illness can be prevented by good sanitation and safe <strong>food handling</strong>.</td>
<td>The safest ways to thaw frozen meat are in the <strong>refrigerator and microwave</strong>.</td>
</tr>
<tr>
<td>To keep food safe, keep your freezer at <strong>0</strong> degrees F.</td>
<td><strong>True</strong>: Unopened containers of fruit or pudding do not need to be kept cold in a packed lunch.</td>
</tr>
</tbody>
</table>
**Teacher reference**

**Germs and Food Poisoning Answer Key**

Mary made baked custard at noon. She used milk, eggs, sugar, vanilla and raisins. She wants to serve the custard warm at dinner tonight. What should she do?

- Cover the custard and put it in a warm place in the kitchen until dinner.
- Refrigerate the custard and warm it up completely right before eating it.

Darren made a large pot of beef stew in the afternoon and wants to serve it at dinner tonight. What should he do?

- Turn the heat to low and let the stew simmer until dinner.
- Just turn off the heat and let the stew set. Right before dinner, heat it up.

Jana made banana cream pies for a church dinner. She needs to run some errands and it will probably be several hours before she gets the pies to her church. What should she do?

- Cover the pies and sit them on the car floor to keep them out of the sun.
- Put ice in the bottom of an ice chest and sit the pies on top of the ice before putting them in the car.

Tony came into the kitchen and found groceries he forgot to put away when he got home three hours ago. The bag contained cereal, apples, hamburger, milk, lettuce and cheese. What should he do?

- Throw away the hamburger and milk. The other food should be okay.
- Throw everything away.

Latisha forgot to put the spaghetti with meatballs in the refrigerator after dinner. She found it on the kitchen table three hours later. What should she do?

- Throw the spaghetti away.
- Put it in the refrigerator. Chilling the spaghetti will kill any germs that have grown.

This one is tricky! It's true that the cereal and apples would not spoil; however, it's likely that blood from the raw hamburger has dripped on them. There's no way to make them safe to eat, so everything must be thrown out. It's an expensive les-
Teacher reference
Taking Care of Leftovers Answer Key

Jolene cooked a big pot of chili so she would have enough for several meals. Should she:

- Let the chili cool on the counter before she puts it in the refrigerator.
- Put the pot of chili in the refrigerator right away.
- **Divide the chili into small, shallow containers and put it in the refrigerator or freezer right away.**

Sam cooked a wonderful Thanksgiving dinner of turkey and stuffing and all the trimmings. All the guests enjoyed the meal and left the table feeling stuffed. Should Sam:

- Cover everything with a clean towel and leave it on the table.
- **Divide all of the food into small containers and refrigerate right away.**
- Relax and put his feet up. If no one is hungry in a few hours, he can put the food away.

**Teaching tip**

This is a good time to talk about the 2-hour rule and how it includes time at the grocery store, preparation time and meal time. It all adds up!

Denise made spaghetti last week. There was a lot left over, so she stored it in the refrigerator. She found it today. Should she:

- **Throw it out. These leftovers are too old to be safe.**
- Heat the spaghetti up until it is really hot and serve it.

Henry made enough meat loaf for two meals. He froze the leftovers. He wants to serve the leftover meat loaf for dinner tonight. Should he:

- Go ahead and thaw it on the kitchen counter since it was cooked before he froze it.
- **Thaw it in the refrigerator to keep germs from growing. If it isn't completely thawed by dinner, he can heat it a little longer.**
Core activity

**Foodborne Risks for Pregnant Women**

1. Have the class divide into three groups: Listeria, Methylmercury and Toxoplasma. Give each group five minutes to discuss its foodborne illness using the chart on page 4 of the newsletter.

2. Groups should each select a member (the one with the closest birthday) to make notes to report the class. Notes should include:
   - Name of the foodborne illness
   - Where it is found
   - How it can be prevented

3. Groups should report to the class about their foodborne illnesses. After each report, ask students if they think they are at risk for this type of foodborne illness. If they say yes, ask them why. What are some steps they can take to prevent the illness?

**Purpose**

Helps students recognize and take precautions against special foodborne illness risks that affect moms-to-be and their unborn babies.

**Supplies needed**

- *Teen Parents Newsletter: Keeping food safe*
**Additional activity**

**Are You a Food Safety Sleuth?**

1. Divide the class into two teams. Toss a coin to see which team will read a food safety situation first.

   The team winning the coin toss should pick a student to draw a food safety situation from the basket and read it aloud to the other team.

2. The other team should consult and tell what it thinks should happen to the food. If the team picks a correct answer, it earns a point. If the team doesn’t answer correctly, give the other team a chance to answer.

   If the first team answers correctly, it earns two points and takes another turn reading a food safety situation. If the first team does not answer correctly, the other team then takes a turn reading aloud a food safety situation.

3. Play continues in this manner until all situations have been read and answered. The team with the most points wins.

**Purpose**

Students will practice critical thinking about common food safety mistakes.

**Supplies needed**

- *Food Safety Situations* (H-37)
- basket or other suitable container

**Teacher reference**

- *Food Safety Situations Answer Key*

**Advance preparation**

- Make a copy of the food safety situations. Cut them apart and put them into a basket or other container.
# Food Safety Situations Answer Key

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuna salad sandwich made last night and kept in the refrigerator.</td>
<td>Safe to eat</td>
</tr>
<tr>
<td>Tuna salad sandwich made last week and kept in the refrigerator.</td>
<td>Throw it out</td>
</tr>
<tr>
<td>Carton of yogurt, left on the kitchen counter for four hours.</td>
<td>Throw it out</td>
</tr>
<tr>
<td>Unwashed carrots kept in the refrigerator.</td>
<td>Can be washed and eaten</td>
</tr>
<tr>
<td>Peanut butter sandwich left on the kitchen counter all day.</td>
<td>Safe to eat</td>
</tr>
<tr>
<td>Carrots left on the kitchen counter all day.</td>
<td>Throw them out</td>
</tr>
<tr>
<td>Cheese sticks left on the kitchen counter for three hours.</td>
<td>Throw them out</td>
</tr>
<tr>
<td>Unwashed grapes left on the kitchen counter for five hours.</td>
<td>Can be washed and eaten</td>
</tr>
<tr>
<td>Turkey sandwich left in a lunch bag with no freezer pack for four hours.</td>
<td>Throw it out</td>
</tr>
<tr>
<td>Glass of milk left on the kitchen counter for 15 minutes.</td>
<td>Safe to drink</td>
</tr>
<tr>
<td>Leftover ham sandwich brought home from school in backpack.</td>
<td>Throw it out</td>
</tr>
</tbody>
</table>