

Food Safety Worksheet

Instructions

To learn more about keeping food safe and avoiding the risk of foodborne illness, follow these steps.

1. Discuss your family's experiences with foodborne illness.
2. Use the 3 Rs to evaluate how your family handles food.
 - a. Recognize
 - b. Reduce
 - c. Remember
3. Determine which of your family's food handling practices could be improved, if any.

Step 1: Discuss Experience with Foodborne Illness

1. Have you had an experience with foodborne illness? If you feel comfortable doing so, share it with the group. How do you think you became ill? What were your symptoms? Use the chart at the left to assist with your discussion.

Mild Symptoms of Foodborne Illness
<ul style="list-style-type: none">● Upset stomach● Stomach cramps● Nausea● Vomiting● Diarrhea● Fever
Severe Symptoms of Foodborne Illness (May require medical attention)
<ul style="list-style-type: none">● Bloody diarrhea● Fever over 102°F● Frequent vomiting● Signs of dehydration● Diarrhea that lasts more than 3 days
<small>Adapted from "Food Poisoning Symptoms," 2022. Center for Disease Control and Prevention https://www.cdc.gov/foodsafety/symptoms.html</small>

Step 2: Use the 3 Rs as a Guideline for Safe Food Handling

Recognize

1. Recognize that microbes naturally occur in the environment. Think about the foods your family likes to eat. Where are they likely to come in contact with (become contaminated with) microbes that could cause foodborne illness?

Common Terms Used to Describe the Organisms that Cause Foodborne Illness

- Bug: A colloquial description of germs
- Germ: A microorganism that can cause disease
- Microbe: A microorganism, especially bacteria that can cause disease
- Pathogen: A bacteria or virus that can cause disease

(These terms are used interchangeably and basically all mean the same thing.)

Adapted from Oxford Languages provided by Google's English dictionary.

2. Recognize that some foods provide an environment that makes it easy for microbes to multiply. When it refers to safety, these foods are called "sensitive foods." Among them are the following:
 - a. Raw meats
 - b. Raw, unpasteurized dairy products
 - c. Raw flour, cornmeal, and other grains
 - d. Eggs
 - e. Fresh fruits and vegetables

Reduce

1. There are actions you can take to reduce opportunities for harmful microbes to come into contact with food or to multiply on sensitive foods. These include the following:

- Handwashing
- Separating
- Preparing items in the proper order

a. Reduce through handwashing

- In what ways does handwashing reduce opportunities for harmful microbes to come into contact with food?

- What happens to microbes when they contact warm, soapy water?

- What are some situations where your hands may have touched a lot of harmful microbes and when washing your hands is especially important?

b. Reduce through separation

- How does separating foods reduce opportunities for harmful microbes to come into contact with other foods? The graphic below is a representation of a refrigerator with a freezer compartment at the top. Write or draw the best locations for the following foods:

Dairy and cold drinks

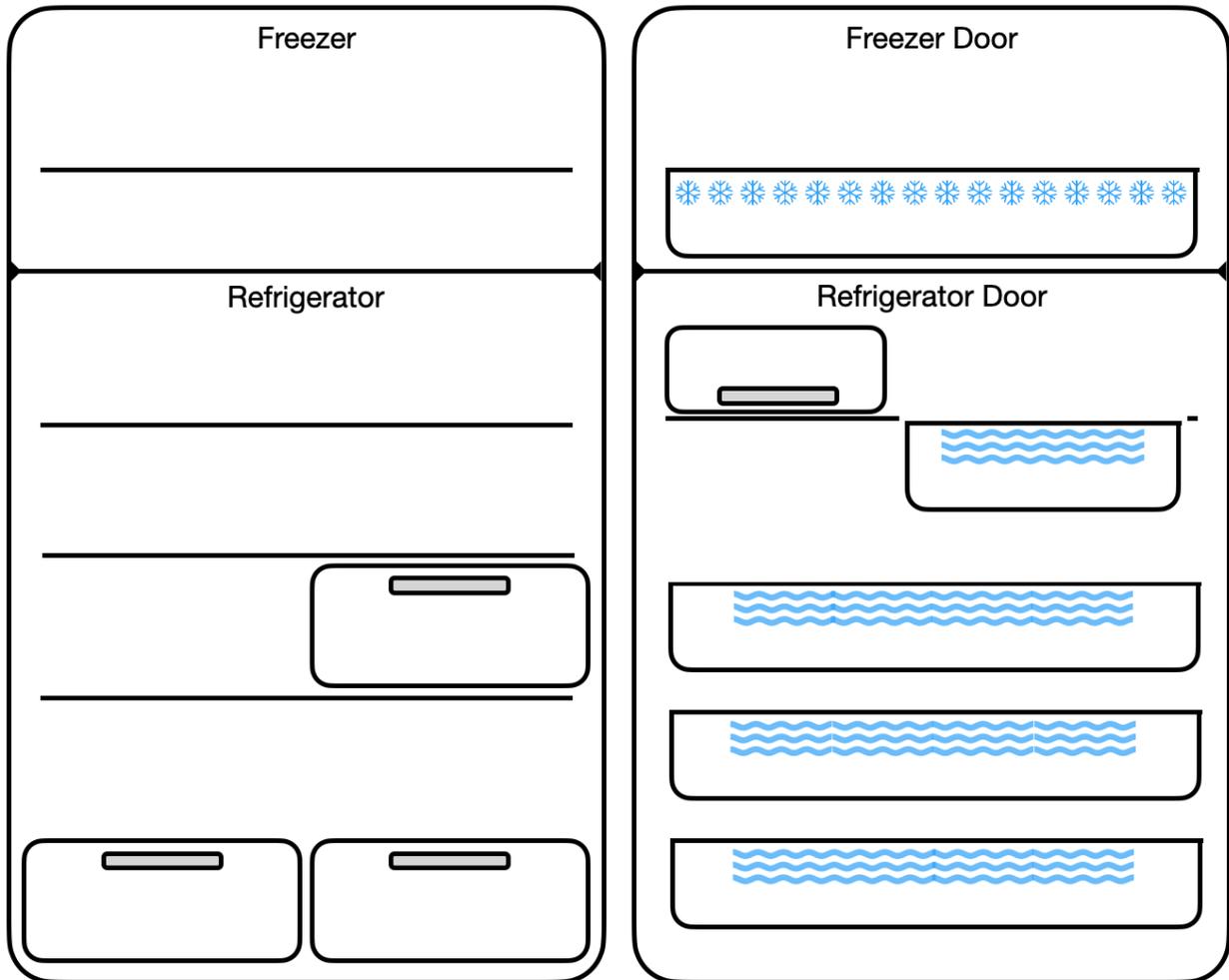
Raw meats

Eggs

Fresh fruits and vegetables

Packaged, cooked meats

Containers of leftovers



c. Reduce through Proper Preparation Order

- The order in which foods are prepared may reduce cross contamination. Order the cooking steps below to show steps which should be completed first, second, third, etc.

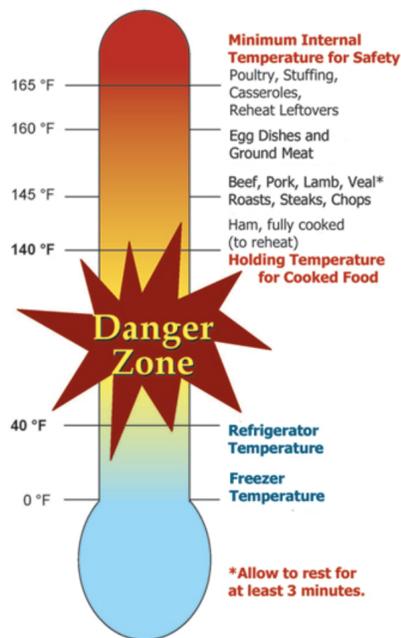
- _____ Cut up or crumble meat
- _____ Rinse fresh vegetables
- _____ Wash cutting boards
- _____ Store and chill leftovers as promptly as possible
- _____ Wash hands for at least 20 seconds
- _____ Assemble and serve cooked foods
- _____ Chop fresh vegetables
- _____ Cook meat
- _____ Set vegetables aside or place in a cooking pot
- _____ Wash surfaces and utensils that have come into contact with raw meat

- Why did you choose this order of preparation?
- What foodborne illness risks does it prevent?

Remember

Remember that microbes multiply rapidly when the temperature is in the danger zone and multiply most rapidly when the temperature is between 70°F and 125°F. Discuss the following with your group.

1. What is meant by the phrase “keep hot foods hot and cold foods cold?”



Copied from "Danger Zone" (40°F - 140°F), Food Safety and Inspection Service, U.S. Department of Agriculture. <https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/danger-zone-40f-140f>

2. What happens to microbes when they are heated to 140°F or above?

3. What happens to microbes when they are cooled to 40°F or below?

4. Why is the temperature range from 40°F to 140°F called the danger zone?

5. Discuss the precautions that can be taken with sensitive foods using the information on the table below.

Food	Food Safety Concern	Precautions that Reduce the Risk of Foodborne Illness
Raw meats	Naturally occurring pathogens due to handling and processing	Refrigerate within two hours of purchasing. Wash your hands after handling raw meat. Cook meats to a safe internal temperature as noted on the thermometer drawing on page 5. Also, see Question 6 below.
Raw, unpasteurized dairy products	Naturally occurring pathogens due to handling and processing	Use pasteurized products only. Keep dairy products refrigerated at 40°F or colder.

Food	Food Safety Concern	Precautions that Reduce the Risk of Foodborne Illness
Raw flour, cornmeal, and other grains	Naturally occurring pathogens due to handling and processing	<p>Store in a container that protects it from heat and moisture.</p> <p>When added to recipes, cook to 145°F or bake.</p> <p>Don't taste raw dough or batter.</p>
Eggs (Note: As the egg travels through the oviduct, it may pick up pathogens from inside the chicken. Also, pathogens may be found on the shell once the egg is laid.)	Naturally occurring pathogens due to handling and processing	<p>Buy refrigerated eggs only.</p> <p>Store at 40°F or colder.</p> <p>Cook until the yolks and whites are firm.</p> <p>Don't taste raw dough that contains raw eggs.</p>
Fresh fruits and vegetables	<p>Dirt or other foreign objects from the field where it was grown</p> <p>Naturally occurring pathogens due to handling and processing</p>	<p>Refrigerate within two hours of purchasing.</p> <p>Wash fruits and vegetables that are to be eaten raw.</p> <p>Boil or steam to a temperature of 165°F to kill pathogens.</p>
<p>Adapted from "Foods That Can Cause Food Poisoning" by the Centers for Disease Control and Prevention, 2022. https://www.cdc.gov/foodsafety/foods-linked-illness.html</p>		

6. Have you ever heard anyone ask for their hamburger or steak to be served rare, medium, or well? People may prefer varying levels of doneness, but the only safe level for red meats is 145°F and for ground red meats is 165°F which is well done.¹ What level of doneness do you prefer? Why?

¹ "Cook to a Safe Minimum Internal Temperature." <https://www.foodsafety.gov/food-safety-charts/safe-minimum-internal-temperatures>

Step 3: Improve Food Handling Practices

1. Using the 3 Rs, think about the risks represented by your family’s food handling practices. What can you do to reduce those risks? Use the chart below to stimulate your thinking.

Food Item	Purchasing and Bringing Home	Storing at Home	Preparing to Eat or Packing for a Lunch	Storing Leftovers
Raw meats				
Fresh fruits and vegetables				
Dairy products				
Eggs				
Grain products				
Packaged, boxed, or canned products				

2. Which packaged foods must be refrigerated after they are opened? Why?

Bonus Activity

In the table on pages 6 and 7, we used the term “naturally occurring pathogens.” This is an umbrella term for microbes that may cause illness. There are specific names for these microbes, and they make you sick in slightly different ways. Some are more likely to be found in sensitive foods than others.

If you are curious about this topic and would like more details, research “food safety,” “foodborne illness,” or “food poisoning.” Ask a librarian to help you find books on these topics. The reference used to develop the table on pages 6 and 7 may also be useful: “Foods That Can Cause Food Poisoning,” Centers for Disease Control and Prevention. <https://www.cdc.gov/foodsafety/foods-linked-illness.html>

Turning the Page to Safer Food Handling

If you could do one thing to improve your family’s food handling practices, what would it be and why?
