

**8.NPA.4.2 (Part 1) Differentiate methods of food preparation in terms of health and safety.**

- How do people get sick?
- How can you keep from getting sick or from making others sick?
- When should hands be washed?
- Can you see germs?
- What are germs and where are germs found in your home?
- What is the most germ-ridden place in your home? --
  - in reality more germs are found in the kitchen than in any other room in the house, and a kitchen sponge is considered to be the single-most germy item in most homes.
  - Although there are germs everywhere including the toilet, the dog and his bowl, a kitchen sponge is the ideal place for germs to grow.
  - We can't escape germs. They're everywhere! They're in the air, on doorknobs, and on every surface in our homes

# Cartoon - How to Wash Your Hands



# Statement of Objectives:

Upon completion of today's lesson, you will know that healthy food is not only nutritious but safe as well. You will be able to identify perishable foods, and know the importance of keeping hot foods hot and cold foods cold. You will be able to identify time and temperature principles that must be practiced in order to keep food safe. You will be able to take steps in your own home to assure that food safety rules are practiced.

- We can't escape germs, but we can take steps to keep them from growing, multiplying, and making us sick!
- The US food supply is among the safest in the world, but organisms you can't see, smell, or taste—bacteria, viruses, and tiny parasites, are everywhere in the environment and they can make you sick.
- Microbes (pathogens) can be seen only under a microscope.

- According to the Centers for Disease Control and Prevention (CDC), each year there are 48 million cases of food borne illness in the United States and over 3000 deaths are attributed to food borne illness.
- Symptoms of food borne illness are most often vomiting and diarrhea and many cases go undiagnosed each year.
- Someone may say, “It must be something I ate”, and many times, it is.
- Food borne illness costs Americans billions of dollars each year.

- Food borne illness is caused in many ways including
  - handling food with improperly washed hands
  - cross contaminating food by putting cooked food on a surface where raw food has been.
- Even kitchen sponges are very “contaminated” meaning having lots of germs present.
- When surfaces are not properly cleaned and sanitized, there is the potential for allowing the germs to get into our food.
- Work areas must be kept clean and free from germs.

- In order for germs to grow, conditions must be ideal, in that germs need food, moisture, and warmth in order to grow.
- Any food can be potentially hazardous or perishable, but especially moist foods that are high in protein such as meats, milk, and eggs



- Even foods that are not normally considered perishable such as fruits and vegetables, when not properly washed and handled improperly, can have germs grow on them.
- Also, kitchen surfaces that are not properly cleaned can have harmful microbes (germs) growing on them.

- It is extremely important that foods be kept out of the “Danger Zone” (40-140 degrees F).
- Room temperature is about 70 degrees and ideal for germ growth.
- This means that cold foods must be kept cold in refrigerators that are 40 degrees F or below and that hot foods must be cooked and held at 140 degrees F or above.
- It also means that foods must be defrosted in the refrigerator or microwave and never on the kitchen counter.

- Food must not remain in the “Danger Zone” longer than two hours.
- This is known as the “Two Hour Rule”.
- The “Time and Temperature Principle” means that no perishable food should be held in the Danger Zone for a period longer than two hours.
- Clean means no obvious dirt or contaminants are present. Sanitary means free from bacteria (pathogens) that could make you sick

- Surfaces may be sanitized by using a disinfectant (i.e., mild Clorox solution of 1 tablespoon of bleach in 1 quart of water) or by using hot water, soap and a clean towel.
- Food can be contaminated by placing it on a surface that has not been sanitized or by introducing bacteria from any object that is not sanitary.

# CLEAN

1. Always wash hands thoroughly before and after handling food — especially after using the bathroom or touching other things!
2. Clean counters and other surfaces before preparing food.
3. Always rinse fruits and vegetables before preparing and eating them.

# SEPARATE

1. Store meat, poultry and fish on a separate dish in the refrigerator. Don't let the juices drip on other foods!
2. Be sure to wash cutting boards with hot soapy water if you used them to cut meats, poultry or fish, before cutting vegetables or fruits.
3. Never use a "contaminated" towel without laundering it first. Better yet, use paper towels, so the bacteria go into the garbage!
4. Use a clean platter for cooked meat and poultry. Don't put them back on the platter with the raw juices!

# CHILL

1. Food should be refrigerated immediately upon returning from the store. (Leftovers should be, too.)
2. Food should not be left unrefrigerated for more than two hours.
3. If for any reason the period exceeds two hours, it's safer to get rid of the food. "When in doubt . . . throw it out!"

# COOK

1. Use a food thermometer to check temperature of meat, poultry & fish. (For proper use, check thermometer package directions.)



# FBI\* CASE: Perils at the Picnic

\*FBI = **f**ood**b**orne **i**llness

A white, torn-edge paper graphic is positioned at the bottom of the slide, partially overlapping the dark grey background. The paper has a rough, deckled top edge and contains faint, illegible markings and shadows, suggesting it might be a piece of evidence or a document related to the case.

Calling all agents!

The FBI Team has learned of a possible foodborne illness incident in progress! As an FBI detective, you must investigate the facts and give your expert conclusions. Because now that you're an expert on food safety — it's up to you to Fight Back for food safety!

It was a Saturday morning in early summer . . .

1. Tom gets a call from his friends to meet them in the park down the street to play ball. They tell him to bring food for a picnic lunch, so they can stay all day. (One of his buddies, Nick, is bringing his older brother along to help with the barbecue.) The boys can't wait to get to the park early so they can start playing before it gets too hot!

2. Tom looks in the refrigerator and finds some potato salad his mom made during the week. He also finds some cold cuts, leftover turkey, cheese, a tomato, an apple and some grapes in a drawer. He wraps the meat and cheese in plastic wrap and packs them in a big paper bag with some paper plates, bread, the fruit and tomato and a knife and fork. Just before he leaves, he checks the freezer and finds three hamburger patties wrapped in plastic — he throws them in the bag, too.

3. As Tom runs out the door, he tosses his baseball and glove in the bag and grabs his bat. When he gets to the park, several of his friends are already there. Nick's older brother, Stephen, is setting up a grill for cooking hamburgers.

4. Tom and his friends claim the last picnic table — a great spot in the sun! Tom grabs his baseball and glove out of the food bag and leaves the bag on top of the table. He figures that this way, the hamburger will be thawed enough to cook by lunchtime!

5. When it's time to break for lunch, Tom's friends go to find a bathroom while Tom unpacks the picnic food. The hamburgers are dripping on the outside, but still frozen on the inside and stuck together! So Tom sets them on a paper plate and uses the knife and fork he brought to pry them apart. When they're almost apart, he uses his fingers to separate them the rest of the way and then leaves them on the plate so they can thaw a bit more before he takes them over to the grill.

6. Tom then sets the cheese and the tomato on the plate and slices them to use on top of the burgers. That way everything will be ready to stick on top of the burgers!

7. When the other kids return, they brush off the surface of the picnic table with their hands and lay the bread out to make a couple of sandwiches from the cold cuts, cheese, and turkey. Nick's brother starts grilling the burgers.

8. Once the burgers have turned brown on the outside, Tom and his friends add cheese to the top of the burgers. Stephen says he wants to cook them a bit more, but the boys insist that they love to eat them rare.

9. Retrieving the fork Tom used to separate the frozen burgers, the boys serve themselves some potato salad. Using the knife, they cut up the apple which had been sitting on top of the picnic table and share it along with the grapes, which had also been sitting out on the top of the picnic table.

# Cracking the Case

1. What food safety mistakes did Tom make? • At home? • At the park before they played ball?
2. While getting the food ready?
3. While he and his friends were eating?
4. What questions do you have for Tom and his friends about what they did? About the food they were eating?
5. Does it matter . . .
  - a. How long Tom and his friends played ball?
  - b. That Tom didn't go to the bathroom with his friends?
  - c. That they chose a table in the sun?
  - d. That the hamburger was juicy on the outside when they finished playing ball? Explain why:
  - e. What might happen to Tom and his friends?

# Food Safety Word Match

- Two Hour Rule
  - Personal hygiene
  - Perishable food
  - Cross-contamination
  - Contaminated food
  - Danger zone
  - Foodborne illness
  - The Thaw Law
  - Sanitation
  - Thorough cooking
- Transfer of harmful bacteria from one food to another. Harmful bacteria can be transferred to food from other sources such as hands.
  - Defrost foods in the refrigerator, microwave, or under running water. Never defrost food on the kitchen counter.
  - Keeping work areas free from dirt or bacteria.
  - Foods that can become unsafe or spoil quickly if not refrigerated or frozen.
  - Cleanliness, keeping yourself clean.
  - Perishable food should not be left at room temperature longer than two hours.
  - Food that contains harmful microbes.
  - Cooking food to safe internal temperature.
  - Sickness caused by eating contaminated food, sometimes called food poisoning.
  - The range of temperatures at which most bacteria multiply rapidly—between 40 and 140 degrees Fahrenheit.

1-F,

2-E,

3-D,

4-A,

5-G,

6-J,

7-I,

8-B,

9-C,

10-H



## Closure:

Today we have seen the results of improperly washed hands and of surfaces that are not cleaned properly. We have learned about the “Danger Zone”, “Two Hour Rule”, the “Time and Temperature Principle” and about “Cross Contamination”. We have seen what can happen when we follow unsafe food practices when taking food on a picnic. As you take the lesson you have learned today to your home and complete the “Home Food Safety Survey”, talk with your family members about food safety. By creating awareness in your home, hopefully neither you nor any of your family members will ever be made sick by not handling food safely.