

# STUDENT LAB SHEET

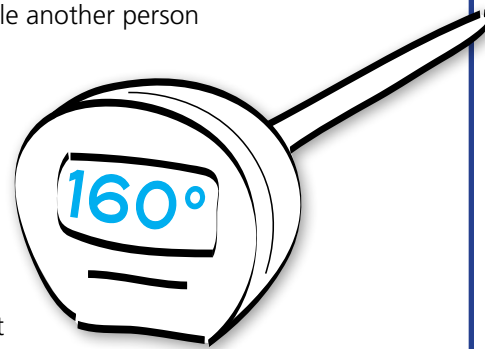
## COOKING RIGHT

### GETTING READY

- Wash your hands with hot, soapy water.
- Use one alcohol wipe to sanitize the outside wrap of the hamburger, and one alcohol wipe to sanitize the knife.
- Carefully remove the wrap from the hamburger by slitting the wrap along 3 sides of the package, being careful not to touch the meat with the knife. Then, peel the wrap away from the meat. This helps ensure that you haven't cross-contaminated the hamburger with the knife or the wrap. This is important for a scientific lab, but not necessary at home.

### CONDUCT THE LAB

1. Prepare a control dish.
2. Remove a small section of the raw hamburger and swab inside the hamburger to get the juices. Inoculate the "raw" dish. Discard the raw hamburger section.
3. Divide the remaining hamburger into thirds. Weigh each one to ensure equal weight (50 grams is a good size for testing). Make 3 patties, each .5 inch (1.3 cm) thick.
4. Spray the skillet with nonstick spray to keep burgers from sticking.
5. Cook one hamburger to 120° F (49° C). Don't push down with the spatula — it squeezes the juices out.
6. Lift the patty out of the pan with a spatula and place it on a clean paper plate to take the temperature. The temperature should be taken within 15 seconds to get an accurate reading, because the hamburger continues to cook even though it's removed from the heat source.
  - Take the temperature by inserting the thermometer through the side into the center of the burger.
    - One person should use a spatula to steady the hamburger on one side while another person quickly takes the temperature. Remember that the hamburger is hot!
    - If the temperature hasn't reached 120° F (49° C), return the burger to the skillet and continue to cook.
    - If the temperature is higher than 120° F (49° C), return the burger to the skillet and continue to cook to 140° F (60° C). You will then use your third patty to cook to 120° F (49° C).
  - Clean the thermometer with an alcohol wipe after each time you use it. Remember that bacteria are not killed until the burger reaches the correct temperature. If the burger hasn't reached the correct temperature, you might reintroduce bacteria into your burger with a contaminated thermometer.
7. Break the patty in half and place on a paper plate. Swab inside the broken edge to get the juices from the burger. Inoculate dish 120° F (49° C).
8. Repeat this procedure, cooking one of the remaining patties to 140° F (60° C) and the other to 160° F (71° C) (unless you still need to cook one of them only to 120° F — see step 6).



### INCUBATE PETRI DISHES

1. Seal the dishes with Parafilm (see page 8).
2. Place Petri dishes in an incubator at 95° F (35° C) or let the dishes sit at room temperature (away from the sun) for the appropriate amount of time.

**Observe, record, and graph bacterial growth of the samples.**