

Food Explorations Lab II:

Invisible Creatures

STUDENT LAB INVESTIGATIONS

Name: _____

Lab Overview

In this investigation, you will work in groups to determine where bacteria can be located on your hands and the effect of hand washing on cleanliness.

Lab Objectives

In this lab, you will learn how to...

1. Identify the areas of the hand where bacteria are the most concentrated.
2. Properly wash your hands for general health and disease prevention.

Lab Safety: Before beginning ANY investigation you should put on your safety goggles and apron. It is important to avoid getting chemicals on your hands. Always wash your hands following completion of an investigation. When handling food, you should also wash your hands prior to beginning an investigation.

Lab Question

Which of the following areas on the hand contain the most bacteria?

Palm

Finger Nails

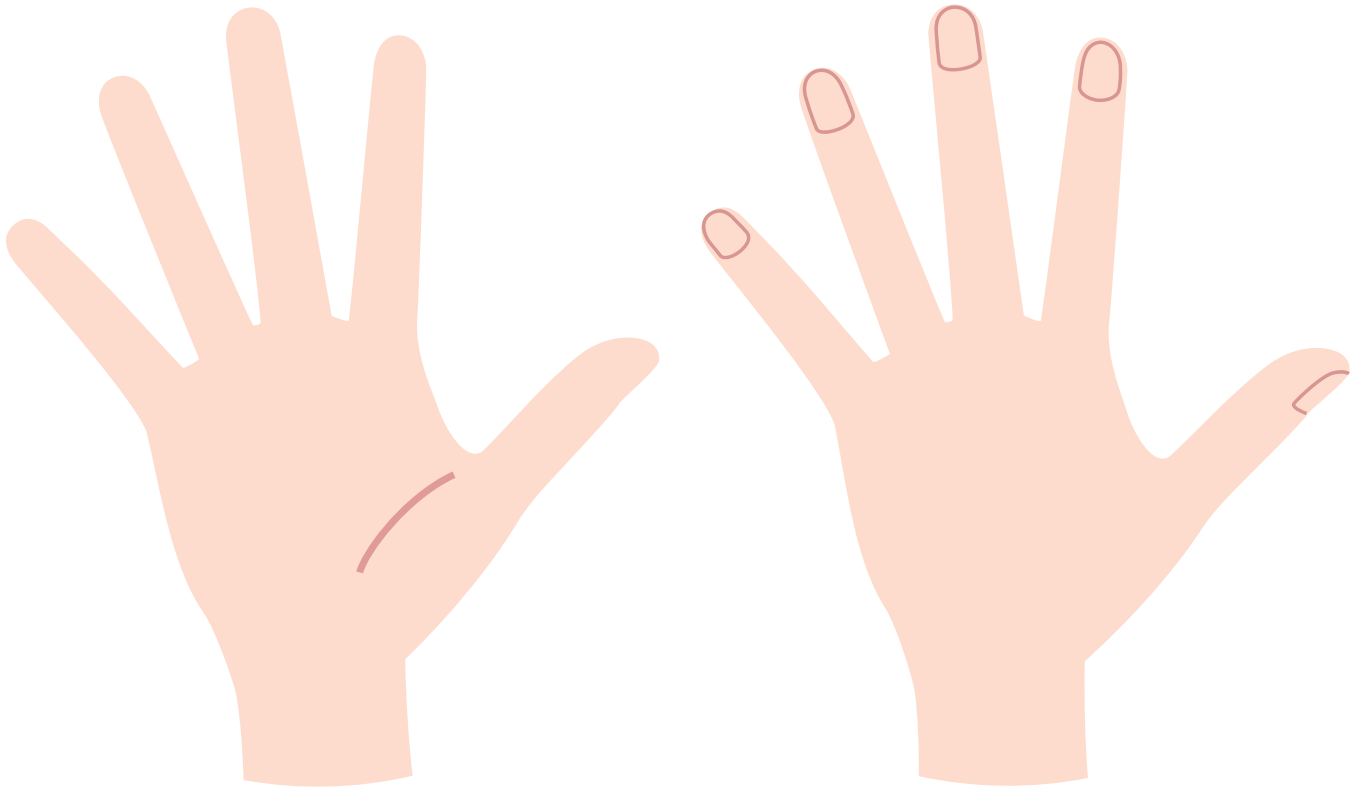
Wrist

Fingers

Thumb

Back of Hand

Prediction: Using the drawing below, shade in locations on each hand where you predict bacteria are the most concentrated.



Provide an explanation for your prediction:

Observation of Bacteria

MATERIALS

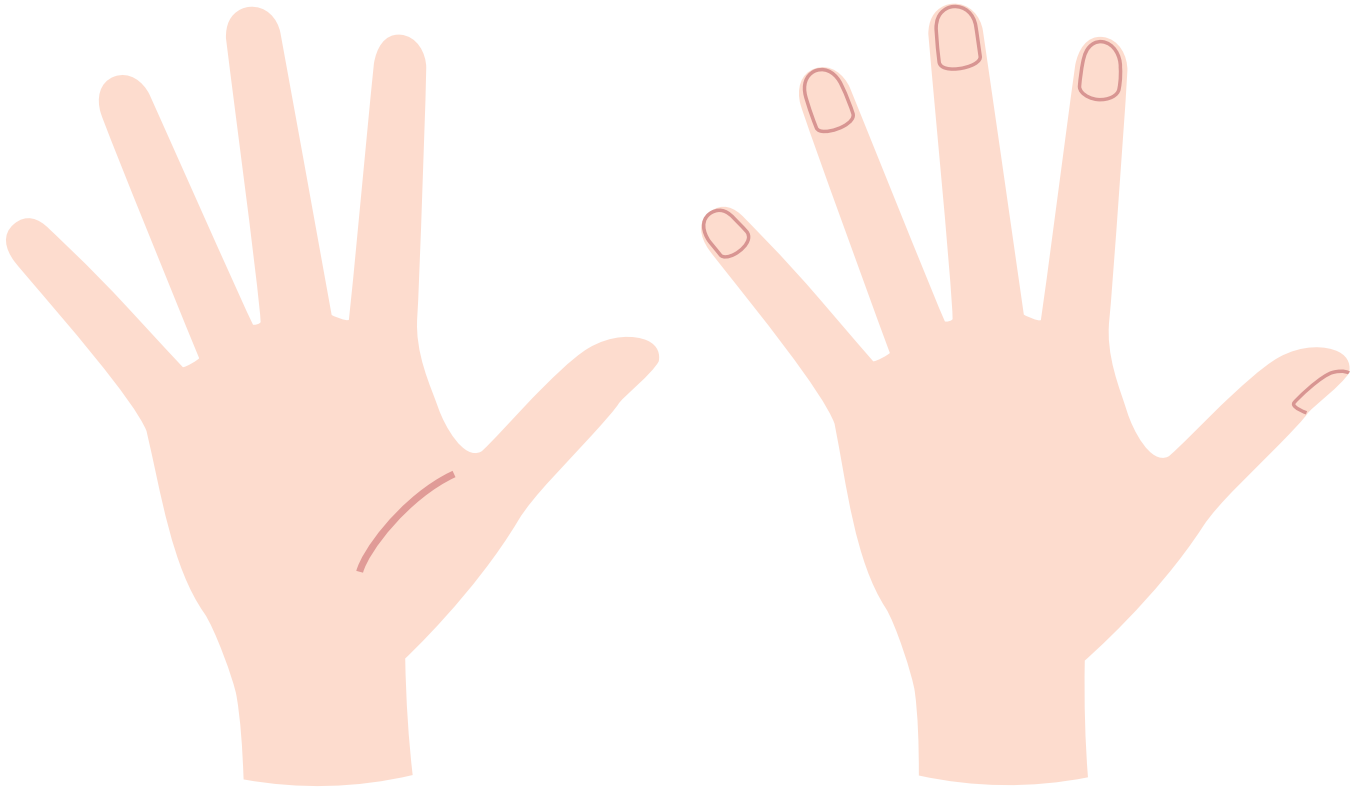
Safety goggles	Aprons (optional)
Glo Germ™	UV light
Warm water	Soap
Colored pencils or markers	

PROCEDURE

You will use Glo Germ™ and a UV light to determine where bacteria concentrate on your hands. **Do not point the UV light in the direction of anyone's eyes and only turn it on when it is time to use.**

1. Gently shake the bottle of Glo Germ™. Place a small amount (about the size of a quarter) into your palm and spread over both of your hands. Make sure to cover the area under and around your nails, between your fingers and a small portion of your wrists.
2. Place your hands under the UV light to view the bacteria present. This part of the procedure works best in a darkened room.
3. Draw your *visual* observations of where the bacteria are located on your hands on the next page using a light colored pencil or marker.
4. Wash your hands with warm water and soap for at least 20 seconds.
5. Place your hands under the UV light to view the bacteria present again. Draw your *visual* observations of where the bacteria are located on your hands on the next page (same hand drawing as before), but this time use a dark colored pencil or marker. The contrasting colors will highlight any areas that still had bacteria on them.
6. Wash your hands with warm water and soap for at least 20 seconds. Pay special attention to the areas that you were not able to clean properly the first time.
7. Draw your *visual* observations of where the bacteria are located on your hands on the next page (same hand drawing as before), but this time circle the areas that still have bacteria on them.

DATA



Conclusion:

1. Explain how the amount and location of bacteria on your hand changed from no hand washing to the first and second hand washings?

2. Use supporting evidence from the investigation to explain if your original response to the lab question was correct or incorrect.

3. List the areas of your hands that had the most bacteria and explain why bacteria are often concentrated in these areas.

4. Infer and describe how bracelets, jewelry, or watches may interfere with hand washing.

5. Referring to the "Safe Practices" reading and your observations during the investigation, describe the most effective way to wash your hands to prevent foodborne illness.

6. Explain three (3) ways people can spread the bacteria that is on their hands.

7. Identify 2 situations throughout your day in which hand washing is very important.