

# Which Wash Wins?

How many times has someone told you: “Go wash your hands before dinner”? Why is hand washing important? Find out in this activity and discover which hand-washing method is the hands-down winner.

## Procedure

- 1 You will be assigned to one of the following teams:  
Control Team: No washing.  
Experimental Team 1: water only  
Experimental Team 2: water and regular soap  
Experimental Team 3: water and antibacterial soap  
Experimental Team 4: hand sanitizer only
- 2 Organize your team so that there is a hand washer, a hand washer helper, a timer, and a data recorder.
- 3 Prior to starting, the data recorder should label the underside of each Petri dish with your team’s information (control, 1, 2, 3, 4) and the location of each swab (palm, between fingers, fingernails).
- 4 The hand washer should wash his or her hands according to the procedure listed for your team on the “Hand-Washing Methods” handout. The hand washer should not touch anything after washing.
- 5 You are now ready to swab the hand washer’s hands. Ask your teacher for the beets, and then:
  - Have one team member open the three Petri dishes. Have a second team member use the tongs to retrieve and place a beet in each dish. Replace the lids on all the dishes except for the one labeled “palm.”
  - Using one end of the cotton swab, a third team member should swab the hand washer’s palm and then swab one half of the beet slice. Repeat the procedure using the other end of the swab and rubbing the swab on the other half of the beet slice.
  - Place the lid back on the Petri dish and tape down two sides of the dish.
- 6 Repeat this process for the beets in the other two Petri dishes using a swab from between the hand washer’s fingers for one slice and a swab from under the fingernails for the other slice.

- 7 Put your beets in a place where they will not be disturbed. Record daily observations of the beet for five days, describing the different kinds of growths you see. Draw a picture of what you see each day.

## Questions

*Write your answers on a separate sheet of paper.*

- 1 After four days, compare your beets with those of the other teams. Which ones have the most growth?
- 2 Draw conclusions about the efficacy of your hand-washing method based on each team’s results. What evidence do you have that microorganisms can be transmitted by hands? What are the strengths and weaknesses of that evidence?
- 3 What other factors might be responsible for the growth?
- 4 Based on your results, why would you want to wash your hands? When would you want to wash them?
- 5 What are some diseases that might be transmitted by hand contact?
- 6 Why is it important that food service employees wash their hands?

