



# LINKS TO AGRICULTURE



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## How Well Do You Wash

### What and Where Are Germs?

A germ is a small microorganism that cannot be seen with the naked eye. Germs can make us sick or spread diseases. Germs like to grow on warm, moist surfaces like your skin. Disease causing germs can easily be transferred to food. So, fruits and vegetables should be washed before you eat them; and you should always wash your hands before preparing or eating food.

### Germs on the Farm?

Just like people can get sick from germs, so can animals. It is very important that farmers keep germs at bay so their animals can stay healthy. Farmers refer to this as taking Bio-Security measures.

#### Biosecurity at the Dairy Farm

##### Foot Bath



A foot bath is where a cow must walk through a solution that helps to kill any germs that can cause problems with their feet.

#### Biosecurity at the Pig Farm

##### Foot Bath



A foot bath is used to disinfect boots of any materials that may cause harmful diseases to the animals.

### It's Time to Experiment!

When was the last time you washed your hands? Was it a quick splash under cold water? Did you use soap? What have you done since you washed? Have you eaten, put your fingers in your mouth, or touched someone else? Do you think your hands were clean? Try this experiment and you'll discover the most effective way to remove bacteria from your hands.

**Materials:** cooking oil, cinnamon, measuring spoons, a sink

#### Procedure:

1. Rub 1 tablespoon of cooking oil all over your hands until completely coated.
2. Sprinkle 1 teaspoon of cinnamon on your hands and rub it around until it's evenly distributed. The cinnamon will be like bacteria. They are all over!
3. Then wash your hands with these 3 different methods and look for the amount of cinnamon (pretend bacteria) that remains after each method.

For each method rub your hands briskly for 20 seconds and record the results...

Washing Method	Results
#1 cold water and no soap	
#2 Warm water and no soap	
#3 warm water and soap	

4. Did you get them clean without soap? Did warm water help? When you wash your hands in real life, soap lifts off millions of microbes (germs) and water rinses them away.
5. Does it matter how much time you spend washing them? Try the experiment again. This time use warm water and soap, but change the length of time:

Washing Time Limit	Rank <i>best, ok and worst</i> method...
#1 Rub for 5 Seconds	
#2 Rub for 10 Seconds	
#3 Rub for 20 Seconds	

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# Career Corner

**Biosecurity Specialist** - Biosecurity specialists work to enforce regulations related to health issues. They stay up to date on the current sanitizers and chemicals used in germ warfare. Biosecurity specialists work in junction with microbiologists to understand how germs work and are affected by changes in their environment.

### How Biosecurity Specialists Benefit Agriculture:

- Prevent the spread of harmful diseases
- Educate farmers on biosecurity regulations

### Biosecurity Specialists Study:

- Chemistry
- Microbiology



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### It's Time to Experiment Continued.....

1. What did you learn?
2. Which method removed the most cinnamon ("bacteria")?
3. Which method removed the least?
4. How long does it take to get the cinnamon ("bacteria") washed off?
5. Why does the warm water help? How does soap help? How does rubbing help?



### Farm Facts

When you visit a farm here are some tips that will keep you and the farmer happy.



- Wear plastic booties over your shoes to prevent carrying in germs.
- Don't feed the animals.
- Make sure to wash your hands before you leave.