

Hand Washing: I can handle it!

Utah Science



Materials

- ◆ Cooking spray or vegetable oil
- ◆ Cinnamon
- ◆ Soap
- ◆ Paper towels
- ◆ Warm faucet water
- ◆ Cold faucet water

Background

Grocery stores and restaurants are agribusinesses. Agriculture is the growing of food and fiber, and restaurants and grocery stores provide food for sale to us. Therefore they are agribusinesses. Grocery stores and restaurants must follow many health standards concerning food safety. They are responsible for providing us with quality, safe food. Health inspectors routinely inspect these agribusinesses to make sure they are following the guidelines. If health inspectors find that an agribusiness is not, they can penalize them by closing the business for a specific amount of time or perhaps indefinitely.

In the United States, we are fortunate to have a government that makes food safety a priority. In some countries, food may be produced or imported, but it is spoiled by pests or microorganisms due to poor storage. Pests (insects and rodents) and microorganisms (bacteria, mold, yeast) are the two chief causes of food spoilage. Food must be transported, stored, and prepared correctly to ensure safety. Agribusinesses that deal with food must know where their food is coming from. They must also know how their food was grown and how it was transported.

All food will spoil if it is not preserved in some way. Some foods such as nuts and grains can be stored for a long time without spoiling. Other foods such as bread and milk must be consumed quickly. Foods can be preserved in many ways. Canning, freezing, and dehydrating are a few methods. Spoilage may occur before there is a change in taste or odor. Therefore, consumers should read expiration dates before eating food products bought from grocery stores.

People can reduce their risk of food-borne illness by handling food properly. Eighty-five percent of the cases of food-borne illness, a sickness caused by bacteria, can be avoided with proper food handling. Keys to food safety are washing hands, checking expiration dates, washing surfaces and utensils with hot, soapy water, refrigeration and freezing, rinsing fruits and vegetables, and storing foods in proper places.

Activity Procedures

1. Talk with the students about safe food handling practices at their homes. Do they thoroughly wash dishes? Do they refrigerate food properly? Do they look for expiration dates on packages? Do they wash their hands with soap and warm water?
2. Use this activity to show students the importance of washing hands with soap and warm water.
 - a. Apply cooking spray or vegetable oil to each student's fingers.

Time: 30 minutes

Grade Levels: K-6

Grades K-2

Standard 1

Students will develop a sense of self.

Objective 1

Describe and practice responsible behaviors for health and safety.

- Describe proper care of the body (e.g., proper brushing of teeth, eating a variety of foods, proper hand washing, sneezing into sleeve).

Grade 3

Health, Standard 4

The students will understand concepts related to health promotion and disease prevention.

Objective 3

Demonstrate proper personal hygiene and universal precautions.

- Demonstrate proper hand washing.

Grade 4

Health, Standard 4

The students will understand concepts related to health promotion and disease prevention.

Objective 2

Demonstrate proper personal hygiene and universal precautions.

- Demonstrate proper hand washing.

Grade 5

Health, Standard 4

The students will understand concepts related to health promotion and disease prevention.

Objective 1

Define viruses and how they are transmitted.

- Recognize how infected yet symptom-free people can infect others.

More standards can be found on the next page.

- b. Sprinkle cinnamon on the palms, backs, and in-between each student's hands. The cinnamon represents germs that get on our hands.
- c. Try to get rid of the cinnamon using only cold water. Discuss the results.
- d. Try to get rid of the cinnamon using soap and cold water. Discuss the results.
- e. Try to get rid of the cinnamon using soap and warm water. The cinnamon "germs" will rinse right off the student's hands and into the sink.
- f. Ask the students why the cinnamon stayed on their hands until they used soap and warm water. How is this similar to washing germs off of our hands? Is it important to use soap and warm water for hand washing?

Additional Activities, What's Next?

1. Tour a restaurant. What types of food safety precautions are used?
2. Add a slice of bread and a little water to a sealable plastic bag. What happens? Chart your observations over time.

Adapted from Illinois Agriculture in the Classroom.



Wash Your Hands!

**Grade 6
Science, Standard 5**

Students will understand that microorganisms range from simple to complex, are found almost everywhere, and are both helpful and harmful.

Objective 1

Observe and summarize information about microorganisms.

- c. Research and report on a microorganism's requirements.

Objective 2

Demonstrate the skills needed to plan and conduct an experiment to determine a microorganism's requirements in a specific environment.

- d. Develop a hypothesis for a question about microorganisms based on observations and prior knowledge.

Objective 3

Identify positive and negative effects of microorganisms and how science has developed positive uses for some microorganisms and overcome the negative effects of others.

- e. Observe and report on microorganisms' harmful effects on food.

Questions for Investigation and Assessment:

1. What are the chief causes of food spoilage?
2. What are some safe food handling practices that can be used in your home?
3. What are some food preservation methods that are used before foods reach the grocery store?
4. What responsibilities do agribusinesses such as grocery stores and restaurants have?
5. Why is it important to use soap and warm water when washing your hands?