

HAND WASHING: HOW CLEAN IS CLEAN?

LESSON PLAN FOR GRADES K-2

Primary Learning Outcomes:

Students will:

- Identify what germs are
- Describe how germs can be bad for you
- Identify how germs are spread
- Demonstrate proper hand washing and be able to explain it to another child.

Additional Learning Outcomes:

Students will:

- Recognize and discuss why cleanliness is important to their health.

Assessed AZ Curriculum Standards:

Kindergarten:

Standard 1: 1CH-R1. Identify personal well-being health behaviors.

PO 1. Name healthy behaviors that relate to personal hygiene.

PO 2. Demonstrate healthy behaviors that relate to personal hygiene.

First and Second Grades:

Standard 1: 1CH-F1. Describe relationships between personal health behavior and (personal hygiene) and individual well-being.

PO 2. Explain the importance of personal health-promoting behaviors. (e.g. covering mouth when sneezing, proper hand washing, etc.)

1 CH-F2. Identify indicators of mental, emotional, social and physical health during childhood.

PO 3. Describe ways to prevent the spread of germs.

Materials:

Book, What Are Germs? By Dr. Alvin Silverstein, Virginia Silverstein, and Laura Silverstein Nunn. (or some other age appropriate book on germs)

Chart board and chart paper (or whiteboard or blackboard)

Note cards or small squares of paper

Glitterbug powder or lotion (available at Brevis Corporation, 3310 South 2700 East, Salt Lake City, UT 84109 or 1-800-383-3377)

OR

Glo-Germ powder (available at P.O. Box 537, Moab, Utah 84532 or 1-800-842-6622)
UV handheld lamp
Sink with hot/warm water, soap, single use paper towels
Fingernail brush
Agar plates (for extension activity)

Procedures/Activities:

Day 1-Lesson 1-Focus on Germs

Total Time-40 minutes

Step 1: 15 minutes

Introduce students to the book, What are Germs? by Dr. Alvin Silverstein, Virginia Silverstein, and Laura Silverstein Nunn. Preview the cover and ask students what they know about germs. Ask students if germs are always bad? Begin reading and discussing the book with students. With kindergarten students, just read pages 5-9. With grades 1-2 you could read through page 16. Other excellent books to read with children about germs are listed under the references below. Discuss with students how germs are tiny, living organisms, also known as microbes, and that they can not be seen by the human eye. They can be seen with high powered microscopes, however. There are good germs and bad germs. Two bad germs that can make us sick are called bacteria and viruses. Good germs include: yeast which makes bread rise, bacteria in yogurt, and germs used to make cheese and vinegar.

Step 2: 10 minutes

On chart paper, write the vocabulary words: germ, microorganism, host, and disinfectant for kindergarten. For grades 1-2 add the words: bacteria, viruses, toxins, decay bacteria, fungi, and protozoa. Discuss and write the meanings of the words with the students. (see attached vocabulary list with meanings)

Step 3: 15 minutes

Give students note cards or small squares of paper. Have them write the word on the paper and draw and color a picture to show the meaning of the word. An alternative activity would be to create a T-chart on the board together with the students and label one side Good Germs and the other side Bad Germs and then have the students identify ones for each side.

Day 2-Lesson 2-Focus on Hand Washing

Total Time-55 minutes

Step 1: 5 minutes

Review the book and vocabulary words the students discussed and drew pictures of in lesson 1. Ask students what they learned they could do to get rid of harmful germs? (Hand Washing)

Step 2: 10-15 minutes

Tell students that the number one defense against germs is proper hand washing. If you keep your hands clean, you will be far less likely to get sick and will help prevent the spread of germs. Safe food handling includes washing hands before eating or preparing foods. On chart paper or whiteboard, have students give specific incidences that would apply. For example, before eating breakfast, lunch, dinner, any snacks, before making a peanut butter and jelly sandwich, before helping mom make cookies, etc. Then, have them brainstorm and list on chart paper other times that they think it is important to wash their hands. These should include:

After touching hair, nose, mouth, face or body.

After using the restroom.

After petting an animal.

After sneezing, coughing, or blowing your nose.

After touching raw or unwashed food or soiled dishes.

After handling money.

After playing outside or coming into contact with unclean surfaces.

Step 3: 20 minutes

Tell them today they are going to learn how to wash their hands correctly, so that those “icky germs” really are gone.

Put a small amount of either glitterbug lotion or powder on each students’ hands. Ask the student to rub his hands together to spread the lotion/powder evenly over the hands. Using the handheld UV lamp and with the lights out, hold the lamp over the students’ hands and you will probably see lots of germs, which are indicated by fluorescence (glowing). If you do not want to turn the lights out, another approach is to have a shoebox with the end cut out to place the hands in and then a small hole cut in the top for the students to look through. Students should look at the top side and underside of hands and under the fingernails.

Now, discuss how people wash their hands differently using different degrees of water temperature, different amounts of soap, different times for scrubbing with soap, and different ways of drying their hands.

Next, have different groups of students use the following approaches to washing their hands (4 or so students in each group):

1. Cold water and no soap
2. Cold water and soap
3. Hot water and no soap
4. Hot water and soap
5. Disinfectant/bacterial lotion with no water or soap

Recheck their hands using the UV light and see which group has the least amount of fluorescence, indicating the fewest germs.

You can also experiment with and without a fingernail brush.

Step 4: 15 minutes

Discuss with the students which approach to cleaning hands worked the best. Point out that there are different degrees of “clean.” Washing your hands properly includes the following steps:

1. Wet your hands with hot/warm water
2. Apply soap
3. Scrub hands for at least 30 seconds
4. Clean between fingers, back of hands, fingertips, and under nails
5. Rinse thoroughly under running water
6. Dry hands and arms with a single-use paper towel or warm-air hand dryer
7. Use the paper towel to turn off the faucet and on the door handle, as you leave the restroom, if possible

Tell students to determine that they have scrubbed their hands with soap long enough, a good activity is to sing the “ABC” song twice through and that is approximately 30 seconds.

Have kids practice washing their hands correctly and identifying the steps as they wash them.

Assessment Activities:

1. Have students work in pairs and have one student demonstrate proper hand washing techniques to the other student as the other student observes and critiques his peer for thoroughness.
2. Have students complete the picture assessment sheet, “How Well Do You Wash Your Hands?” (attached to this lesson plan)
3. Have students complete a weekly hand washing chart entitled, “School and Home Hand Washing Chart.” (attached to this lesson plan)

Extension Activities:

1. To demonstrate the spread of germs several approaches can be used:
 - A. The simplest approach is to take spray bottle filled with clean water and spray water on children’s hands. Explain that the water on their hands represents germs that come out of their mouths when they cough or sneeze. Then, have the children touch an object such as a table, piece of paper, etc. Ask them what happened to the object they touched (it became damp.) Explain that this is what happens when we sneeze into our hands and then touch an object (the germs on our hands transfer to the object.) If they wash their hands after sneezing or coughing in them, the germs will be washed away and there will be less chance of people getting sick.
 - B. Another approach is to use agar plates. Agar plates are available at Remel, 12076 Santa Fe Drive, Lenexa, KS 66215 or 1-800-447-3635.

- a. When using agar plates, have a child cough in agar plate and then cover with the lid provided.
- b. Leave the plate out at room temperature for 48 hours.
- c. Look at bacteria growth.

An alternative to coughing in the plate is to put a piece of hair in the plate or to wipe a dirty finger in the plate.

2. Have the students create a rap, cheer, or simple song to the tune of “Old McDonald” about washing their hands.

Example:

Wash, Wash, Wash Your Hands,

Keep those Germs Away,

Use soap and water, scrub them well, rinse and dry too,

Do this every day.

Web Sites of Interest:

Wash Your Hands at <http://www.nfsmi.org/Information/handsindex.html>

Kids’ Health from Nemours Foundation at <http://www.kidshealth.org/index.html>

Be Food Safe at http://www.fsis.usda.gov/Be_FoodSafe/

Unites States Food and Drug Administration’s Kids’ Site at

<http://www.fda.gov/oc/opacom/kids/>

Kids’ World-Food Safety at

<http://www.agr.state.nc.us/cyber/kidswrld/foodsafe/index.htm>

Why Do I Need to Wash My Hands? at

http://www.kidshealth.org/kid/talk/qa/wash_hands.html

Why is Hand Washing So Important? at

http://www.kidshealth.org/parent/general/sick/hand_washing.html

Tips on Hand Washing at

<http://www.hotelfun4kids.com/travelsafetytips/firstaidtips/handwashing.htm>

References in Addition to Above Web Sites:

Ferrin, Wendy Wakefield. Director of the SOPE Project, *Germs on their Fingers!/Germenes en tus manor!* Baker and Taylor and Independent Publishers Group, Inc., 2002.

Katz, Bobbi. *Germs! Germs! Germs!* New York: Scholastic Inc., 1996.

May, John & Jocelyn Stevenson. *The Magic School Bus: Inside Ralphie, A Book About Germs.* New York: Scholastic Inc. 1995.

Silverstein, Dr. Alvin, Virginia Silverstein, and Laura Silverstein Nunn. What Are Germs? New York: Family Watts; A Division of Scholastic., 2002.

Wu, Daniel, Educator with the York Regions District School Board, “Dixie Hygiene Detectives,” booklet. York Region School Board., 2005.

Vocabulary Words for Lesson

Bacteria-microscopic single-celled organism; some bacteria can cause illness

Contagious-easily spread from one person to another

Disinfectant-something that kills harmful microorganisms

Fungus-an organism that feed on living dead matter; includes mushrooms, molds, and yeast

Host-a living plant or animal that provides food and shelter for another creature

Immune- protected from disease

Inflammation-redness, heat, and swelling that develop when tissues are damaged

Microorganisms-living creatures too small to be seen without a microscope

Mucus-a gooey liquid produced by cells in the lining of the nose and breathing passages

Toxins-poisons

Vaccine-a substance that stimulates the body's disease-fighting cells to produce antibodies against a particular kind of germ

Virus-the smallest kind of germ, which cannot even be seen with an ordinary microscope

White Blood Cells-jelly-like blood cells that can move through tissues and are an important part of the body's defenses