

The Journey of a Germ

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Please Do Not Miss...

If you only have a limited amount of time, please don't skip...

- Why Do We Wash Our Hands?
- Wash Your Hands Worksheet

Overview

Have you ever gotten really sick? You were healthy and feeling great one day and the next day you felt terrible! What happened? Why the sudden change? The answer is germs. Germs are tiny, but they can cause BIG problems. In this unit, we are going to learn all about germs and how to stop them!

Background Information

Germs are very tiny invaders. You cannot see them with just your eyes. You need a microscope. This is why germs are also called **microbes**. Germs can spread sicknesses. When someone is sick, they are often **contagious**. This simply means that they have germs, carrying the sickness, which can be spread to other people. Sometimes people are contagious before they even realize that they are sick. That is why it is so important to cover your mouth when you sneeze or cough (preferably with a tissue or your elbow instead of your hand),, to not share food or drinks with other people and to wash your hands correctly and regularly. **Viruses** enter your body through your nose, mouth or open skin. Small children get sick often because they are constantly sticking their hands or their toys (filled with germs) in their mouths. Once a virus enters into your body, it starts reproducing until there are lots of virus cells in your body. This is why you get sick.

Thankfully, your body is pretty amazing! Your body naturally has **white blood cells** that find the virus and kill it before it can do any more harm. White blood cells are like police that guard your body against germs. Healthy human bodies are able to fight off viruses. Sometimes when you get sick, you get a fever. This is your body's way of trying to fight off the germs. Your body gets hot because the heat will kill some germs. **Vaccines** are important. They put antibodies into your body, that help the white blood cells fight off certain serious sicknesses. Get rid of germs by washing hands.

Main Ideas

- Germs are very tiny. You cannot see them with just your eyes. You need a microscope. This is why germs are also called **microbes**.
- **Viruses** enter your body through your nose, mouth or open skin. Small
- When someone is sick, they are often **contagious**. This simply means that they have germs, carrying the sickness, which can be spread to other people.
- That is why it is so important to cover your mouth when you sneeze or cough (preferably with a tissue or your elbow instead of your hand), to not share food or drinks with other people and to wash your hands correctly and regularly.
- **White blood cells** are like police that guard your body against germs.
- You can get rid of germs by washing your hands.

Materials Needed

- *Germs are Not for Sharing* by Elizabeth Verdick
- GLO
- Black light
- Glitter
- Sinks to wash hands
- Spray bottle

Preparation

1. Read "Background Information" to become more familiar with germs and how they spread.
2. Read through *Germs are Not for Sharing* by Elizabeth Verdick. Prepare questions that you can ask along the way.
3. Make sure that you have all the supplies that you will need for each day's experiment or craft.

Opening

Read through *Germs are Not for Sharing* by Elizabeth Verdick.

Why Do We Wash Our Hands?

This experiment works best in small groups of 5-6, but you can adjust it to meet your needs. We do not have enough supplies for every child to do this one, but they will all be able to do the next one. Pick one volunteer. Put 1-2 squirts of the GLO on the child's hands. Have them rub it all in, on both sides of their hands and under their fingernails. Take the group to a sink. Ask children for how long do they normally wash their hands. Be honest. Have the child quickly wash his or her hands. Next, go somewhere dark with the group (closet perhaps). Turn on the blacklight and see how many "germs" are still on the student's hands.

Next, teach proper hand washing techniques. Have all students correctly practice washing their hands. Go back to the closet, turn on the black light and see how many "germs" are still left.

Materials: black light, GLO, place to wash hands, dark space to use black light

The Spread of Germs

The teacher puts glitter on her own hand and shakes each student's hand as they enter the classroom. (Note: put a little hand sanitizer or lotion on their hands before the glitter and it will help the glitter stick better.) Use the "background information" to talk about germs, how they spread, and precautions we can take to protect our bodies from viruses. Students look at their own hands and see if any "germs" have spread to them. Have students then experiment with the best way to get rid of germs: cold water, hot water, soap, no soap, paper towel, or air dry. You can assign different groups to different methods. Discuss their findings as a group. You may even find that some "germs" end up on their faces. Discuss how this happens and why it is problematic.

Further Exploration

Spray Bottle

At any time during this lesson, pick up the small spray bottle, pretend to sneeze, and spray some children with a fine mist from the bottle. When they react, talk about germs flying through the air when you cough or sneeze.

Encourage students to cover their coughs and sneezes with a tissue or to cough/sneeze into their elbows. Ask them, "Why should we cough or sneeze into our elbows instead of our hands?"

Wash Your Hands Worksheet

Use the worksheets provided to teach children how to wash their hands.

How to Wash Your Hands

- 1) Use warm, running water.
- 2) Use soap.
- 3) Scrub under your fingernails.
- 4) Wash your hands for 20 seconds, sing the ABC's.
- 5) Dry them on a paper towel. Turn off the water with the paper towel.

Good Things to Know

- 1) Don't put your hands in your mouth.
- 2) Some of the "germiest" places are doorknobs, cell phones, computers and counter tops.
- 3) Wash your hands after you use the bathroom, after playing with animals, and before you eat.

Students should practice washing their hands correctly. Use a timer.

Wrap Up

- Have students complete the Hand Washing Word Search.
- Have students recall how sicknesses spread from one person to another.
- See if students can name 4 different ways that they can keep germs from spreading.

Signs of Success

The student will...

- Demonstrate engagement and curiosity in learning about the spread of germs.
- On their own, students will start to remind each other of proper hygiene techniques.
- The teacher will randomly test students for proper hand washing techniques when students are not aware of it. Without sharing names, the teacher will share the results with the class.
- Fewer students will get sick.

Other Books to Explore

Itchy, Itchy Chicken Pox (Hello Reader!, Level 1) by Grace MacCarone and Betsy Lewin (May 1, 1992)

What Are Germs? (My Health) by Alvin Silverstein, Virginia B. Silverstein, Laura Silverstein Nunn, and Dr. Alvin, Virginia Silverstein, Silverstein (2003)

Germs Make Me Sick! (Let's-Read-and-Find- Out Science 2) (Reading Rainbow book) by Melvin Berger and Marylin Hafner (Sep 30, 1995)

Germs! Germs! Germs! (Hello Reader Science Level 3) by Bobbi Katz and Steve Bjorkman (Nov 1996)

The Magic School Bus Inside Ralphie: A Book About Germs (Magic School Bus) by Joanna Cole, John Speirs, and Bruce Degan (Oct 1, 1995)

Pennsylvania Educational Standards

Reading 1.2.3 A, C, E

1.6.3 A, B

1.8.3 A, B

NRC National Science Educational Standards

Content Standard A: Science as Inquiry

Content Standard B: Biology

AAAS Benchmarks for Science Literacy

12A Values and Attitudes

12D Communication Skills

Sample Schedule For Making It A Week Long Unit

Day 1:

Introduce the concept of germs and how sicknesses are spread from one person to another.

Perform the "Why Do We Wash Our Hands?" Experiment.

Day 2:

Read *Germs are Not for Sharing* by Elizabeth Verdick

Wash Your Hands Worksheet

Day 3:

Review how sicknesses spread from one person to another.

Spray Bottle

Students will practice washing their hands correctly. Use a timer.

Day 4:

The Spread of Germs Glitter Activity

Day 5:

Review what you learned this week about germs.

Hand Washing Word Search.

Students will practice washing their hands correctly. Use a timer.