

ILLUMINATING GERMS

A Glo-Germ® Handwashing Lesson

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illuminating Germs

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Skill Level

Beginner (4th and 5th grade) and Intermediate (6th, 7th grade)

Learner Outcomes

The learner will be able to:

- Recognize areas for improving their handwashing practices
- Support a claim with clear and relevant evidence

Educational Standard(s) Supported

4.W.TTP.1, 5.ETS1.2, 6.W.TTP.1, 7.W.TTP.1, 7.ETS2.1

Success Indicator

Learners will be successful if they:

- Demonstrate the proper way to remove germs from their hands through handwashing

Time Needed

Approximately 40 minutes

Materials List

Blank paper (1 sheet per student) and a pen/pencil
Bottle of Glo-germ
Black light
Access to a handwashing station with warm, running water, soap, and hand towels (or paper towels)

Introduction to Content

The CDC recommends frequent washing of hands with warm water and soap for at least 20 second. To be most effective, you should also scrub vigorously around the nails and between fingers. This lesson provides a visual experiment to help students “see” where they need to improve their handwashing technique.

Introduction to Methodology

Using Glo-Germ, students will participate in an experiment to learn how to wash their hands properly to reduce germs and minimize the risk of infection. The lesson culminates in a Quick Write where students describe the changes they have made to their handwashing technique.

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Tips for Engagement

Be aware that this lesson could trigger students who may have lost family members or friends to COVID-19.

If you know of a student who has experienced loss because of the pandemic, consider talking to the student before teaching the lesson, offer them the option to not participate, or ask a school counselor to join your class as you teach this lesson.

Terms and Concepts Introduction

COVID-19: The new name of this disease is coronavirus disease 2019, abbreviated as COVID-19. In COVID-19, 'CO' stands for 'corona,' 'VI' for 'virus,' and 'D' for disease.

Frequent and thorough handwashing is one strategy to prevent transmission of the COVID-19 virus.

Setting the Stage and Opening Questions

Pose the following questions to students to generate discussion:

- **On a scale of 1-10, how clean do you think your hands are right now? (1= dirtiest, 10=cleanest)**
- **When did you last wash your hands?**
- **Make a list of 10 things you have touched since you last washed your hands.**
- **Discuss participants' lists of items touched. How frequently are these items cleaned and sanitized? How many other people have touched them?**
- **Would any of you change your initial number regarding how clean you think your hands are? Would you raise your number or lower it? Why?**

If participants do not intuitively make the connection between touching things and getting their hands dirty or "germy," lead them in a discussion to make this connection.

Tell students: **"Today you are going to take part in an experiment to see how well you wash your hands and, by the end, you will know how to wash them properly."**

Experience

1. Ask each student to trace one of his or her hands twice onto a blank piece of paper. Have them label the first hand as Trial #1 and the second Trial #2.
2. While students are doing this, circulate around the room and put a small amount of Glo Germ lotion onto the palm of one hand of each student. Instruct students to rub the lotion onto both hands, being sure to cover the areas between their fingers and around their fingernails. Have them wipe any excess lotion off with a paper towel. You may want to demonstrate this for students.
3. Explain that the lotion contains tiny particles that fluoresce, or glow, under ultraviolet light.

Tell students, **"Today, we are going to pretend that these tiny particles are germs, specifically the COVID-19 virus. Proper hand washing removes these germs from our skin so we cannot pass them along to other people, or transfer them to our food, eating utensils, toothbrushes, etc."**

4. Allow the students to view their "germ"-covered hands under the ultraviolet lamp. They should notice many glowing areas on their skin, nails and around their cuticles.
5. Instruct students to wash their hands using soap and water the way they usually do, then recheck their hands under the UV light.

*Note: you may need to send students to wash their hands in small groups to ensure social distancing.

Share

Remind students that the effort it takes to wash the lotion completely off one's hands is similar to the effort it takes to remove most bacteria. Did the students remove all of the "germs"?

Ask students to shade in all the areas where there are still "germs" on their hands on the Trial #1 sketch of their hand.

Process

Remind students of the proper way to wash their hands. Use a short video clip (like this one: <https://www.youtube.com/watch?v=960XYPCAezU>) to help reinforce proper handwashing methods:

- Rinse hands under running warm water
- Apply soap and lather for at least 15-20 seconds making sure to scrub palms and heels of the hand, backs of hands, between fingers, and under and around nails
- Rinse soap off of hands and dry them on a clean towel

Allow students to try washing their hands again. Encourage them to ensure they follow each step carefully, then recheck their hands under the UV light.

Generalize

Ask students to once again shade in all the areas where there are still "germs" on their hands, but this time they should do this on the Trial #2 sketch of their hand.

Lead students in a discussion about the differences they notice between Trial #1 and Trial #2.

Apply

Instruct students to complete a Quick Write that compares and contrasts how they washed their hands for Trial #1 and Trial #2. For a Quick Write, students should include a topic sentence, four strong detail sentences, and a conclusion sentence. Possible topic sentences include:

- There was a difference in how I washed my hands for Trials #1 and 2.
- Between Trial #1 and Trial #2, I learned how to wash my hands properly.

Encourage volunteers to share their Quick Write responses with the class as a means to highlight positive changes in students' handwashing behaviors.

Life Skill(s)

4th Grade

Gather relevant information for decision-making (Hands)

5th Grade

Communicate information learned from a specific project area to the larger 4-H club (Head)

6th Grade

Use the senses to gain new information or find new ways to use information. (Head-Thinking)

7th Grade

Understand that disease spreads when we do not practice good sanitation. (Health-Living)

Practice cleanliness and self-protection measures, such as Universal Precautions and handwashing. (Health Living)

Supplemental Information

Educational Standards Met

4.W.TTP.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

5.ETS1.2: Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype.

6.W.TTP.1 Write arguments to support claims with clear reasons and relevant evidence.

7.W.TTP.1 Write arguments to support claims with clear reasons and relevant evidence.

7.ETS2.1: Examine a problem from the medical field pertaining to biomaterials and design a solution taking into consideration the criteria, constraints, and relevant scientific principles of the problem that may limit possible solutions.

This lesson was modified from:

Educational Innovations, Inc (n.d.), “Glo Germ Classroom Kit Lessons.” Retrieved from: http://cdn.teachersource.com/downloads/lesson_pdf/GLO-210.pdf on October 27, 2020.