Animal Poo & You –
Staying Healthy Around Your Animals

Handwash Hoedown

Instructor Guide

Handwash Hoedown Instructor Guide

This Instructor Guide supports the *Handwash Hoedown* animated lesson of the *Animal Poo & You* curriculum on prevention of zoönotic diseases. This guide provides the instructor with background information, discussion questions, in-class and at-home student activities, and other aids to supplement the learning objectives presented in the otherwise stand-alone animated video lesson. Instructors can make use of content in this guide in whole or in part to engage students both prior to and following viewing the video to reinforce the learning objectives. Note that not all information in this guide is intended for direct delivery to students. Instructors should consider the ages, backgrounds, interests, and capabilities of their students when adapting and applying the information contained in this guide.

Suggested Use for this Guide:

Before viewing/sharing the video with students, the instructor can:

1. Review the lesson's **Learning Objectives**, **Background Information**, and **Vocabulary/Concept Building** sections in this guide to become acquainted with key topics presented in the video.
2. Review the **Resources** list for more information about a specific topic.
3. Set the environment for the video's learning objectives by posing one or more of the **Discussion Questions (Pre-Video)** to students, which may be presented as "things to think about while watching the video".

Share the video with students:

The **Video Lesson** may be viewed alone or in sequence with the other lessons in the *Animal Poo & You* curriculum.

After viewing/sharing the video with students, the instructor can:

1. Engage students in a discussion using the **Discussion Questions (Post-Video)**.
2. Reinforce students' understanding of the subject area by reviewing terms in the **Vocabulary/Concept Building** section.
3. Share **Fun Facts** which expand beyond the key learning objectives to further stimulate interest and independent learning in the topics presented.
4. Share **Activities** with students as in-class exercises or take-home assignments to apply information from the video in a fun, hands-on way.
5. Administer the **Quiz Questions** to assess the students' understanding of the key learning objectives.
6. Complete and sign the **Certificate of Achievement** for students who have completed the lesson and demonstrated their understanding of key concepts by correctly answering the Quiz Questions.

Video Lesson

Handwash Hoedown

In this lesson, we meet the characters at the Handwash Hoedown Hall – a place where hands and bars of soap get together to dance and show kids how to properly wash their hands.

Learning Objectives

Main Concept:

- The best way to fight germs that can make you sick is to wash your hands with soap and water, especially after touching animals or being in areas where animals live.

After completing this lesson, students will be able to:

- Explain why handwashing is important
- Demonstrate proper handwashing technique

Background Information

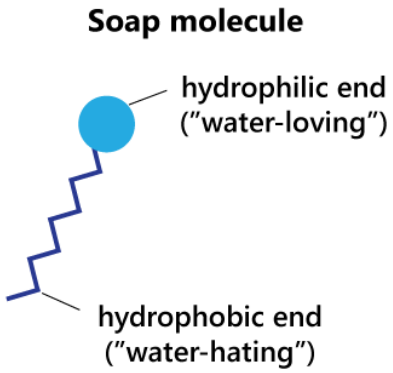
Transmission of Pathogens from Hands to Eyes, Nose, and Mouth

Feces, manure, and droppings from animals are an important source of disease-causing bacteria, such as *Salmonella* and *E. coli* O157, as well as influenza and other viruses. These microbes can make some people very sick with vomiting, diarrhea, and stomach cramps. In barns, animal pens, and other animal environments, feces and fecal pathogens can be anywhere — anything that a person touches in these areas can be contaminated with animal feces. Microbial pathogens can get onto hands after people touch animals or objects in or around areas where animals are kept, including feed bins, water buckets, and cages or fencing. When these pathogens get onto hands and are not washed off, they can invade the body and cause illness.

People (especially children) frequently touch their eyes, nose, and mouth without even realizing it. When contaminated fingers touch these body areas, pathogens can enter the body directly through the eyes, nose, and mouth and cause disease. Contaminated hands can also transmit

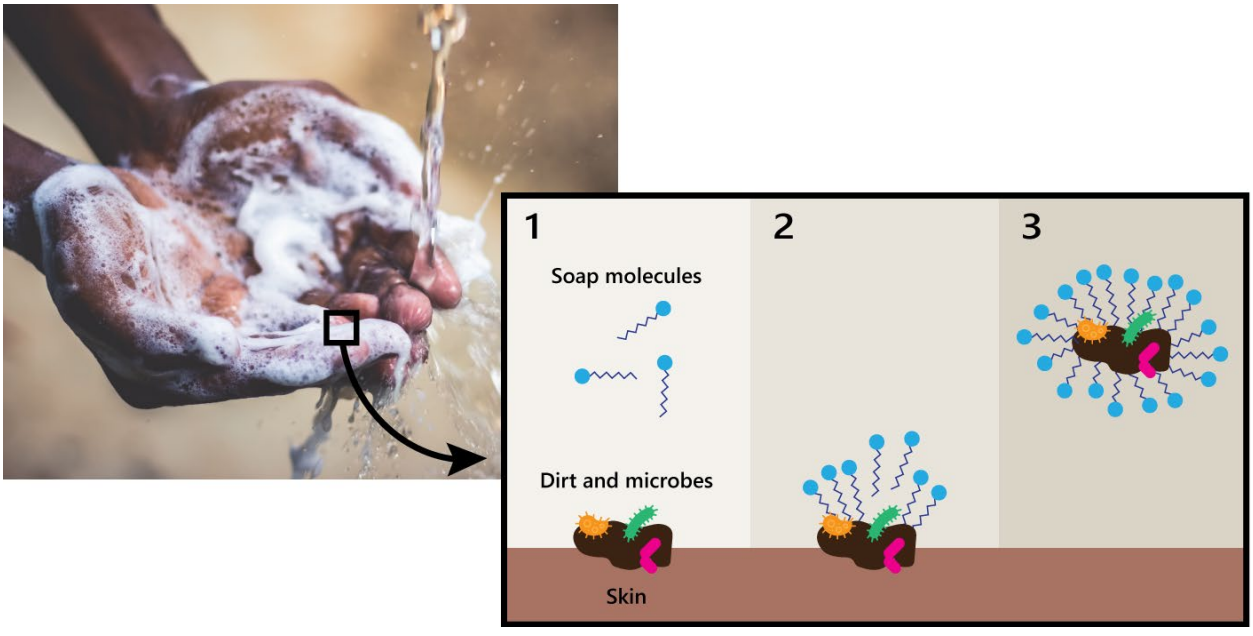
pathogens indirectly through transfer of pathogens to food, drink, and eating utensils and surfaces. Pathogens from unwashed hands can be transferred to other objects, like handrails, tabletops, or toys. If another person touches that same object, the pathogens can then be transferred to their hands. Pathogens can easily spread from person to person in areas where many people are touching the same surface or object. Handwashing with soap removes pathogens from hands that can make people sick, but also removes pathogens from a person's hands that can make animals sick. In some instances, a person's hands can spread pathogens to an animal and cause illness in the animal.

Handwashing is an important part of good biosecurity practices that students should maintain at all times around their animals. Students may already know how biosecurity can protect their animals from pathogens from other animals, but it can also protect them from human pathogens.



How Soap Works

Soap molecules have a hydrophilic ("water-loving") end that is attracted to water, and a hydrophobic ("water-hating") end that is attracted to oils, grease, dirt, and microbes (1 – see figure below). When washing with soap and water, the hydrophobic end attaches to the dirt and microbes on the skin (2 – figure below). Scrubbing hands with soap helps create friction, which mobilizes dirt, grease, and microbes embedded in the skin (3 – figure below). Then, when rinsing hands with water, the soap's hydrophilic end binds to the water and the soap, water, and the pathogens and dirt are washed away together. Soap also helps kill pathogens by breaking them apart.



Proper Handwashing Technique

The U.S. Centers for Disease Control and Prevention (CDC) recommends the following five-step process for washing hands to maximize health and hygiene benefits:

1. **Wet** your hands with clean, running water (warm or cold), turn off the tap, and apply soap.
2. **Lather** your hands by rubbing them together with the soap. Lather the backs of your hands, between your fingers, and under your nails. Scrub all the way up to your wrists. Don't forget to wash your thumbs!
3. **Scrub** your hands for at least 20 seconds. Need a timer? Hum the "Handwash Hoedown" chorus!
4. **Rinse** your hands under clean, running water. Rinse completely until all the soap is gone from your hands.
5. **Dry** your hands using a clean towel or air dry them. Do not dry your hands on your clothes, especially if you have been around animals.

Handwashing is most important at the following times:

- **Before** touching your face, including your eyes, nose, or mouth
- **Before** eating or drinking
- **Before, during,** and **after** preparing food
- **Before** and **after** working with or touching your animal, its feed, or waste (pathogens can also spread from people to animals and make animals sick)
- **After** using the toilet
- **After** blowing your nose, coughing, or sneezing
- **After** handling food or treats for pets and livestock
- **After** being in animal areas
- **After** taking off dirty clothes or shoes

Hand Sanitizer

When soap and running water are not available for handwashing, hand sanitizer made with at least 60% alcohol can help keep hands clean and kill pathogens that may be on the skin. But hand sanitizer doesn't kill all pathogens all the time, and it doesn't work well when hands are visibly dirty or greasy. Washing hands with soap and water is the best way to keep hands clean.

Vocabulary/Concept Building

The following words and concepts used in the video lesson may be new or unfamiliar to some students:

- **Pathogens**: bacteria, viruses, and other microorganisms that can cause disease
- **Immunocompromised**: having a weakened immune system
    - According to the National Institutes of Health (NIH) National Cancer Institute, people who are immunocompromised have a reduced ability to fight infections and other diseases. This may be caused by certain diseases or conditions, such as AIDS, cancer, diabetes, malnutrition, and certain genetic disorders. It may also be caused by certain medicines or treatments, such as anticancer drugs, radiation therapy, and stem cell or organ transplant.
- **Immune system:** a complex network of cells, tissues, organs, and the substances they make that helps the body fight infections and other diseases (NIH National Cancer Institute)
- **Swill**: something suggestive of slop or garbage

Fun Facts

- Fat is a main ingredient in many soaps. One type of fat used in soap is tallow, which is fat from rendered animals like cattle. Other products made from rendered animals include cosmetics (such as make-up) and pet foods.
- Lanolin from sheep wool is added as a moisturizer in most soaps.
- Soap operas are radio or television dramas that typically feature families in melodramatic stories. The term "soap opera" comes from the 1930s when radio dramas were often sponsored by soap manufacturers.

Resources

- Clean Hands: About Handwashing – U.S. Centers for Disease Control and Prevention
  - About Hand Hygiene as a Family Activity
  - Hand Hygiene FAQs
  - Handwashing Facts
  - Clean Hands and Spaces: Handwashing and Cleaning in Educational Facilities
    - Free, web-based training for educators and administrators
- Healthy Habits: Handwashing – Tacoma-Pierce County Health Department
  - Activity books:
    - Super Scrub & Bubbles Activity Book (K-1st grade)
    - Super Scrub & Bubbles Activity Book (2nd-5th grade)
- Hand Washing Project Ideas for Students – Minnesota Department of Health
- NSF Scrub Club

Discussion Questions

Pre-Video

- Why is it important to wash your hands?
- When do you think is the most important time to wash your hands? At certain times of the day? After doing certain activities?
- What kinds of things do you touch with your hands throughout the day?

Post-Video

A transcript of the *Handwash Hoedown* video lesson is available as a reference to aid instructors in classroom discussion after viewing the video.

- Before watching the video, did you think about how or when you wash your hands? What will you think about the next time you wash your hands?
- Describe things you can do to make handwashing a habit – something that you do all the time.
- Explain why keeping your animal's pen, cage, or living area clean can help reduce germs that can make you sick.
- Describe why it's important to wash your hands with water ***and*** soap.

Quiz Questions

Quiz questions may be administered to students individually or as a group, in either a verbal or written format. A printable version of the *Handwash Hoedown* quiz is available.

1. For how long should you wash your hands? Circle one.
    A. 5 seconds
    B. 20 seconds
    C. 2 minutes
2. Which parts of your hands are important to wash? Circle one.
    A. Just 1 finger
    B. Just your palms
    C. All your fingers, thumbs, both sides of hands, up to your wrists, in-between your fingers
3. True or False: You need to wash your hands only when they look dirty.
4. After being around your animals, before eating, and after using the toilet you should always wash your:
    A. Feet
    B. Ears
    C. Belly button
    D. Knees
    E. Hands
5. What are the five steps in good handwashing? Circle one.
    A. Sing, Scratch, Whistle, Wave, Clap
    B. Jump, Turn, Twist, Shout, Sit
    C. Wet, Lather, Scrub, Rinse, Dry
    D. Hop, Skip, Jump, Clap, Spin

Quiz Answer Key:

1. B
2. C
3. False
4. E
5. C

Activities

Note that some students may need assistance completing activities.

1. **Track What You Touch**
   - Students reflect on the things that they touched earlier in the day and identify those objects.

     Reflection questions to consider for this activity:

     - Was there a certain thing that you touched more than anything else?
     - Were some of the things you touched clean or dirty? How did you know?
     - Did your hands ever look dirty throughout the day?
     - At what times throughout the day did you wash your hands?

2. **Bathroom Inspector Activity**
   - Students use an inspection form to evaluate handwashing facilities in a public space, e.g., a restroom at a restaurant, school, or community park. Students record whether or not basic handwashing supplies are present.

     Reflection questions to consider for this activity:

     - Did any bathroom that you inspected *not* have soap or water?
     - Did you see anyone washing their hands while they were in the bathroom? Did they follow all the proper steps of handwashing?
     - What kind of door/handle leads out of the bathroom? After people wash their hands in that bathroom, do they have to touch a doorhandle, or can they open the door without using their hands?

3. **Scrambled Song Lyrics**
   - Students unscramble the lyrics to the *Handwash Hoedown* chorus and arrange the handwashing steps in the proper order.
     - **Note:** This activity requires scissors and glue or tape.

   Answer Key:

   1. Rub the soap into your palms, then go and scrub the backs
   2. Interlock your fingers, it's too early to relax
   3. Clasp your hands together and clean under your nails
   4. Circle round your thumbs, it's a move that never fails
   5. Once you've scrubbed up to your wrists, then let it all rinse down
   6. Now that is how you do the handwash…hoedown!

In-Class Demonstrations/Activities

A. (Pre-Video) Glitter Germs Activity

This activity, intended to be performed prior to watching the video lesson, uses glitter and a toy stuffed animal to demonstrate how animal feces—and the germs therein—can be transferred to students' hands when they interact with an animal and its environment.

Supplies needed:

- Tray, pan, or large bowl/dish
- Small or medium-sized stuffed animal (preferably a cow, goat, or other barnyard animal)
- Glitter (preferably a bright or bold color)
- Handwashing area

Pour glitter onto the tray or pan. Place the stuffed animal on the tray and demonstrate the animal lying down and moving about its "pen". After the stuffed animal is covered in glitter, ask students to hold, pet, groom, or interact with the animal as they would with animals under their care. Explain to students how the glitter represents animal poop germs that can spread from poop in an animal's pen (tray or bowl), to the animal themselves, and then to the hands of anyone that touches the animal. (*Optional*: Ask students to shake hands with another student that does not have glitter on their hands and explain how germs can easily spread from unwashed hands to other people and surfaces.) Then ask students to wash their hands as they currently know how and ask them to observe how much glitter still remains on their hands.

B. (Post-Video) Handwashing Demonstration and Sing-Along

Supplies needed:

- Sink with running water
- Soap
- Clean towel or paper towels
- Step stool (to help smaller students reach the sink)
- *Handwash Hoedown* chorus

After viewing the lesson video, instructors can demonstrate proper handwashing technique while students follow along, practice the handwashing motions, and sing the *Handwash Hoedown* chorus. Instructors can then assist students as they wash their hands following the five handwashing steps described previously in this guide: Proper Handwashing Technique.

Note: It is optimal if instructors can demonstrate handwashing in an area where students can easily see and follow along. If the sink or handwashing station is in a poorly situated area, instructors can modify and demonstrate the lather and scrub steps of handwashing in front of the class, away from the sink, for optimal viewing.

***Handwash Hoedown* Chorus Lyrics:**

Rub the soap into your palms,
then go and scrub the backs.
Interlock your fingers,
it's too early to relax.

Clasp your hands together,
and clean under your nails.
Circle 'round your thumbs,
it's a move that never fails.

Once you've scrubbed up to your wrists,
then let it all rinse down.
Now that is how you do the
handwash...hoedown!

C. (Post-Video) Germ-y Hands Activity

Supplies needed:

- Clear page protector (one per student)
- 8.5 x 11-inch plain piece of paper (one per student)
- Dry-erase or washable markers (in various colors)
- Damp sponges, damp paper towels, or white-board erasers

Students trace their hands on a plain piece of paper using a marker. Instruct the students to place the paper inside a clear page protector. Using washable or dry-erase markers, students can draw and color-in germs, dirt and grime, or other designs on their "hands". Finally, instruct students to "wash" or "scrub" away the germs. (If using dry-erase markers, use a white-board eraser to remove the markings; if using washable markers, use a damp sponge or paper towel to remove the markings).

Optional: Before the students draw the germs on the page protector, tell them a scenario or story that can help students imagine the types of germs or dirt and grime they should add to their "hands".

Example: *Imagine you just finished cleaning your rabbit's cage at home. You changed the bedding, litter, and washed the food and water dishes. Draw what you think might be on your hands after cleaning your rabbit's cage. Now imagine you have a microscope to see the germs on your hands. What would those germs look like?*

About

Animal Poo & You is an integrated curriculum designed to introduce basic concepts of zoönotic disease prevention to youth engaged in agricultural activities. Lessons are designed and developed using vocabulary and images, presented in a musical narrative, appropriate to youth aged 5-8 years. Each animated lesson presents the student with information on a specific area of zoönotic disease prevention and may be viewed individually or in a classroom setting.

Animal Poo & You is a collaborative project between the California Department of Public Health, the California Department of Food and Agriculture (CDFA), the University of California 4-H Youth Development Program, the California Foundation for Agriculture in the Classroom, Bike City Theatre Company, and Le Studio de Mon Creatch. Financial support for this project was provided in part by the U.S. Centers for Disease Control and Prevention, the Council of State and Territorial Epidemiologists, and the CDFA Antimicrobial Use and Stewardship Program.