DO BUGS NEED DRUGS?

GRADE ONE
Overview

In this lesson, students review the steps of handwashing and further explore how germs can spread and cause illness and infections. The concept of classifying germs as either bacteria or virus is introduced. Students use group problem solving skills in identifying some common barriers to good hand washing and ways to resolve these barriers.

Learning Outcomes

In this lesson, students will:
- Review proper handwashing technique
- Further explore how germs are spread
- Identify ways that germs enter the body
- Recognize the connection between handwashing and the spread of infection
- Explore some common barriers to good handwashing

B.C. Curriculum Learning Outcomes

Health and Career Education:
 Organizer – Healthy Living
• Students will identify practices that help prevent the spread of communicable diseases and conditions (e.g. washing hands, covering sneezes, not sharing personal items)

Science:
 Organizer – Processes of Science
• Students will communicate their observations, experiences, and thinking in a variety of ways (e.g. verbally, pictorially, graphically)
• Students will classify objects, events, and organisms

 Organizer – Life Science
• Students will classify living and non-living things

Social Studies:
 Organizer – Skills and Processes
• Students will participate cooperatively and productively in groups
• Students will gather information from personal experience, oral sources, and visual representation
• Students will identify strategies to address relevant school based problems

 Organizer – Governance
• Students will describe their roles, responsibilities and rights at home and school
• Students will explain the purpose of classroom and school expectations
Germs are microscopic organisms that can cause infection or illness and are commonly classified as either bacterial or viral. They can come from someone who is sick, or from animals, or from the environment. When someone who is sick with a respiratory illness sneezes or coughs, germs come out into the air. An adult sneeze can expel germs for a distance of about one meter. These airborne germs can be inhaled by someone else to cause illness or they can fall out of the air and contaminate objects in the environment. Germs are everywhere. They can exist for many days on environmental surfaces and still be infectious.

Transfer of germs via the hands is the most significant way that germs are spread. Germs can get on the hands if you cough or sneeze on your hands. That is why it is important to teach children how to cough and sneeze into their sleeve or a tissue. The hands are also very good at picking up germs from everyday objects.

Objects that are touched by many people are places where germs can be transferred. Some examples are playground equipment, bus rails, public washrooms, shared pens, and vending machines. In a survey of bacterial counts on desks in the workplace, teachers’ desks were ranked number one, followed by accountants, bankers, radio d.j.’s, and doctors. This is not surprising considering how many hands come in contact with a teacher’s desk every day.

Germs are easily picked up by the hands, but you don’t get an infection just by having germs on your hands. Germs cause illness when they enter the body through breaks in the skin, such as a cut or scrape, or more commonly through the mucus membranes, such as those of the nose, mouth and eyes. Handwashing is effective in preventing infections because it reduces the chance of germs coming in contact with your mucous membranes.

When selecting soap, choose plain soap. Plain soap is just as effective as antibacterial soap in getting rid of germs and does not have the negative medical side effect of promoting resistance to antibiotics.

Alcohol-based hand sanitizers will kill germs and are ideal when soap and water are not available. However, they do not clean the hands and are ineffective if the hands are greasy or dirty. Hand sanitizers aren’t a substitute for handwashing. Children’s hands are often soiled so handwashing needs to be encouraged as a routine practice.

When students and teachers wash their hands properly and frequently, the number of germs spread throughout the classroom is reduced. Handwashing with regular soap and water is the best way to stop the spread of infections.
Lesson Outline

1. How Germs Are Spread – pages 6 - 7
2. How Germs Get Into Your Body – page 8
3. How to Wash Your Hands – Handwashing Video – page 9

Student Activities

1. Handwashing With A Buddy – pages 11 - 12
2. Barriers to Good Handwashing – page 13
3. Glittery Hands – page 14

Teacher Materials

1. Picture of Bugsy – page 24
2. Handwashing Video – available to download from the website
3. How to Wash Your Hands poster – page 25
4. Handwashing Song Sheet – page 26
5. Practical Solutions to Handwashing Problems – pages 27 - 28
6. Recommended Children’s Book, Follow-up and Home Connection – page 29
Lesson Outline

Grade 1

1. How Germs Are Spread – pages 6 – 7
2. How Germs Get Into Your Body – page 8
3. How to Wash Your Hands – Handwashing Video – page 9
Introduce Bugsy

**Materials:** Picture of Bugsy

Introduce Bugsy to the class and explain that Bugsy is here to help them learn about germs and handwashing. Bugsy will have important messages as we go along. How do you think Bugsy looks? Happy? Worried? Mad? Bugsy is pretty fierce. He’s here to help you fight germs and stay well.

**Note:** Graphic can be downloaded to an overhead or viewed on line from a projector or SMART Board.

Explain to students that today they will be learning about germs and how germs are spread. Ask the students questions, allow them to answer, and then sum up.

**Do you remember what germs are?**

Sum up: Germs or bugs are tiny living things. Germs cause colds, influenza and other illnesses. Germs can be either bacteria or viruses. Bacteria are single celled living organisms. Viruses are much smaller than bacteria and must attach themselves to living cells to survive.

**How big do you think germs are?**

Are they as big as this room? [Hold arms outstretched]
Are they as big as your desk? [Move arms to be size of desk]
Are they as big as your shoe? [Hands close together]
Are they as big as a piece of dust? [Thumb and first finger together]

Sum up: Germs are microscopic and even smaller than a piece of dust! (Ask students to explain what that might mean).

**Can you see germs?** No

**Are germs living or non-living?** Living

**Can you see them in the air?** No

**On your desk?** No

**On your hands?** No

Sum up: Germs are so small that you can’t see them, except with a microscope.

BUGSY SAYS GERMS ARE TINY LIVING THINGS THAT CAN MAKE YOU SICK.

**Do you know where germs come from?**

Sum up: Germs are everywhere. They are in the dirt, on the floor, on your desk, and even on your hands. Germs can also come from people who are sick, for instance with a cold or influenza.
How Germs Are Spread - continued

? **What happens if you cough or sneeze on your hand?**

Sum up: The germs come on to your hands.
Demonstrate: Pretend to sneeze on your hand and then show your palm to the class.

? **What happens if you touch something that has germs on it?**

Sum up: The germs come on to your hands.
Demonstrate: Pat your desk and then hold your hand, palm out, to the class.

? **When you have germs on your hands, what happens if you touch something else?**

Sum up: The germs come off on to the next surface.
Demonstrate: Touch the light switch (doorknob, or other shared object).

? **Would the light switch now have germs on it?** Yes

? **What happens to the next person who turns on the lights?**

The germs would come off, onto their hands.

? **What would happen if you shook someone else’s hand?**

The next person would get germs on their hands too.

? **What are some other places where germs might be spread by the hands?**

Ask students to work in pairs to think this question through, including the classroom, gym, washroom, library, music room and playground. Then have them discuss these possibilities as a whole group. Chart their ideas and leave posted. These may include doorknobs, handrails, desks, tables, chairs, pens, markers, scissors, telephone, computer keypad, garbage, tissues, food wrappers, library books, notebooks, papers, gym equipment and instruments. These are all things that are touched by many people every day. They are places where germs are spread.

? **What can you do to stop spreading germs?**

Sum up: If you’re sick, cough and sneeze in your sleeve. But whether you are well or sick, wash your hands!

BUGSY SAYS GERMS ARE EVERYWHERE. WASH YOUR HANDS TO STOP THE SPREAD OF GERMS.
You actually don’t get sick just by having germs on your hands. Germs need a place to get into your body. Germs get into your body from your nose, your mouth, and your eyes, or sometimes through cuts on your skin if you have a sore or a scratch. Demonstrate and ask the students to join in: Where can germs get into your body? Point and say: nose, mouth, eyes.

**? How can germs get in through your nose?**

Sum up: If you are next to someone who sneezes without covering their nose and mouth, the germs come out into the air. Germs can get into your body when you breathe the germs in through your nose. These are called airborne germs.

But germs can also get into your body if you have germs on your hands and then you put your finger up your nose or pick your nose.

**? How can germs get in through your mouth?**

Sum up: If your hands have germs on them and you put your fingers in your mouth, you can get sick. You can also get sick from eating with dirty hands, because the germs can come off on the food. Then you put the food in your mouth, where the germs can get into your body.

**? How can germs get in through your eyes?**

Sum up: If your hands have germs on them and you rub your eyes, the germs can get into your body and make you sick.

**? Can you tell me some things that will stop germs from getting into your body?**

Sum up: Keep your hands away from your eyes, nose and mouth. In other words, unless you have just washed your hands, keep your hands away from your face.

But the most important way is to keep germs off your hands. Handwashing is the best way to stop the spread of germs.

BUGSY SAYS WASH YOUR HANDS!
Materials: Handwashing Video – available to download from the website

Inform students that they are now going to see a handwashing video that will show them the proper way to wash their hands. Tell them that you are going to ask questions about what they saw, so it’s important to watch carefully.

Note: Some students may have seen this video in kindergarten. Encourage those students to recall the video and see if they can find something new.

The video is included for all grades (K-Grade 3) to reinforce previous learning and as catch-up for students who have not seen it before.

After playing the video once, ask students if they can remember the steps of handwashing. They are:

1. Wet your hands.
2. Apply plain soap.
3. Rub your hands together for 20 seconds or the time it takes to sing Twinkle, Twinkle. Rub all parts of your hands including palms, between your fingers, backs of hands, thumbs, wrists, fingertips and nails.
4. Rinse your hands.
5. Dry your hands with a disposable towel.
6. Use the towel to turn off the taps and let yourself out the washroom door.

Last, don’t forget to leave the washroom neat and tidy!

Show the video again and discuss the steps if reinforcement is needed.

Ask students what they remember from the video about the parts of the hands that need to be scrubbed. Sum up: palms, between the fingers, backs of hands, thumbs, wrists, fingertips and nails. This step should take about 20 seconds, or the time it takes to sing the Twinkle, Twinkle song.

Sing the Twinkle, Twinkle song and ask the students to practice rubbing their palms, between the fingers, backs of hands, thumbs, wrists, fingertips, and nails.
Student Activities

Grade 1

1. Handwashing With A Buddy – pages 11 - 12
2. Barriers to Good Handwashing – page 13
3. Glittery Hands – page 14
HANDWASHING WITH A BUDDY

Use this activity after students have viewed the handwashing video to practice good handwashing technique.

Materials

- Hang the How to Wash Your Hands poster and the Twinkle, Twinkle song poster in the washroom ahead of time.

Optimal Group Size

- One pair of students at each sink.

Directions

- Explain to the students that they will be using the buddy system to practice handwashing in the washroom. One student will be washing their hands while their buddy watches and makes helpful suggestions. Then they will reverse the process so that their buddy has a turn washing.
- Encourage buddies to help each other to do a good job.
- Remind students to use the posters as visual cues.
- Review the six steps of handwashing:
  1. Wet hands
  2. Apply soap
  3. Rub hands together for 20 seconds and sing the song: Twinkle, Twinkle. Wash all hand surfaces including:
     - Palms
     - Between fingers
     - Backs of hands
     - Thumbs
     - Wrists
     - Fingertips and nails
  4. Rinse hands to get the germs off (about 10 seconds)
  5. Dry hands with a paper towel
  6. Use the paper towel to turn off the tap and open the washroom door
     Leave the washroom neat and tidy
- Pair up the students; send small groups to the washroom, one pair per sink.

Key Message

HANDWASHING IS THE BEST WAY TO STOP THE SPREAD OF INFECTIONS.
**Handwashing with a Buddy - continued**

**Note:** Adult guidance will be needed in the washroom/sink area for this activity for Grade 1 students. An aide or parent volunteer can help. The buddy system is intended to help children help each other with handwashing, so it is important to let them do as much as they can on their own. In case children need guidance, adult helpers should:

1. Be familiar with the six steps of good handwashing,
2. Know the parts of the hands that need to be rubbed together with soap
3. Know the Twinkle, Twinkle song.

Remember to congratulate students on a job well done and for working well together!
**Barriers to Good Handwashing**

Use this activity after students have viewed the handwashing video to practice good handwashing technique.

**Materials**

- Handwashing with a Buddy instruction sheet
- Practical Solutions to Handwashing Problems table

**Optimal Group Size**

- One pair of students at each sink.

**Directions**

An additional objective is to identify barriers to good handwashing in the washrooms in your school. This is best observed by an adult in the washroom while students are actually practicing handwashing. While students are washing their hands with their buddy, adult helpers are asked to observe and identify parts of the handwashing routine that are difficult for the students. A checklist and clipboard may be helpful.

Refer to the table, Practical Solutions to Handwashing Problems, for ideas. Identifying potential problems is the first step in making handwashing simple for the students. Use your observations to facilitate discussion among teachers, parents, administrators, aides, and custodial staff to make handwashing easy for everyone.

Not all students will be able to practice handwashing at once. Ask students to complete these activities in the classroom as time permits:

- Draw a picture of what you learned about germs today
- Trace an outline of your hand and draw where germs might be
- Draw a picture of something in the classroom that might have germs on it

Ask students to take their work home to show their families.
GLITTERY HANDS

This activity shows how easily germs can be spread from one person to another. Once the students have completed this activity they will need to wash their hands. The glitter allows them to visualize the germs being washed away.

Materials

- Glitter (different colors, optional)

Optimal Group Size

- Small groups of 4 or 5

Directions

- Explain that you are going to use glitter to show how easy it is to spread germs with the hands. The glitter represents pretend germs.
- Divide students into small groups of 4 or 5.
- Apply glitter to one hand of one student in each group (optional, use a different color of glitter for each group).
- Have the students in each group shake hands with each other until all group members have participated. If using different color glitter, then ask the groups to shake hands with students in other groups.
- Have students look at their hands and observe how fast and easily germs can be spread by the hands.
- Ask students to look at the hands of the students in the other groups as well.

Discussion Points

? If these were real germs, why would it be important to wash your hands now?
So that you could get the germs off your hands and stop spreading them to other people.

? How could these germs make you sick?
Germs can get into the body through the nose, mouth, eyes or an open wound.

? How can you make sure that the germs on your hands don’t make you sick?
Keep your hands away from your face and wash your hands properly with plain soap and water.

Key Messages

Germs are easily spread by the hands from one person to another.
Germs get into your body when your hands touch your nose, mouth or eyes.
Handwashing is the best way to stop the spread of germs.
BUG OFF GAME INSTRUCTION SHEET

This card game uses a deck of 52 Bug Off cards which depict the six steps of handwashing, the six times when it is important to wash your hands, and Bugsy. This game is similar to “Go Fish” and is used to familiarize students with the handwashing process.

Materials
- Bug Off cards

Optimal Group Size
- Small groups of 3 to 5 players

Directions
- 5 cards are dealt to each player. Players hold their cards in their hands so no one else can see them.
- Place the remaining cards face down on the table and spread them around.
- Before starting the game, players arrange the cards in their hands into pairs and place any pairs they may have face up on the table.
- Starting with the player to the left of the dealer and moving clockwise, the first player looks at the cards in their hand and asks any one of their opponents if they have any “____”, which should be one of the cards they have in their hand that they are trying to match up.
- If the opponent has the card, they must give it to the player, who then places the pair face up on the table. The player continues to ask opponents for cards until no match is made. If the opponent does not have that card they tell the other player to “Bug Off!”.
- The player must then pick up a single card from the pile on the table. If they make a pair in doing so, they place it face up on the table. Play passes to the person to the left. If a player runs out of cards before the game is over, they must then pick up five cards from the pile.
- Once all the cards are gone from the pile, play continues until one player is out of cards.
- Scoring and winning: Each pair is worth one point. The person with the most points wins the game.

Alternate Ideas
- The cards can be used as Flash cards to teach children the steps of handwashing or when to wash their hands.
- Cards can also be used as a concentration or memory game where the students place cards in an array face down on the table and then turn over two cards at a time and try to match up pairs of cards. For this game, use only 13 pairs of cards instead of the full 52 card deck.
Soap

20 seconds

20 seconds

20 seconds

20 seconds
Rinse

Rinse

Rinse

Rinse

Dry Hands

Dry Hands

Dry Hands

Dry Hands

Bug Off Cards

- 18 -
Garbage

Garbage

Garbage

Garbage

BUG OFF CARDS
Teacher Materials

Grade 1

1. Picture of Bugsy – page 24
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1. WET YOUR HANDS
2. APPLY PLAIN SOAP
3. RUB HANDS TOGETHER
4. RINSE YOUR HANDS
5. DRY YOUR HANDS
6. TURN OFF TAP WITH PAPER TOWEL

LEAVE THE WASHROOM NEAT AND TIDY
Handwashing Song

Twinkle, twinkle little star,
Look how clean my two hands are,
Soap and water, wash and scrub
Get those germs off rub-a-dub,
Twinkle, twinkle little star,
Look how clean my two hands are.
### Practical Solutions to Handwashing Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Hygiene Principle</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soap or paper towels not available</td>
<td>Handwashing by students, teachers and staff is the best way to stop the spread of infections in schools.</td>
<td>Inform custodial staff and/or principal. Suggest that the school administration hold an information session for custodial staff about the importance of handwashing. Handwashing protects custodial staff too.</td>
</tr>
<tr>
<td>Taps go off automatically and water does not run long enough</td>
<td>Water needs to run long enough to rinse off soap and germs.</td>
<td>Have students wash hands with a buddy so they can assist each other with the tap. Students should use a paper towel to push in the tap if they have already washed their hands.</td>
</tr>
<tr>
<td>Warm water not available</td>
<td>Cold water is a deterrent to handwashing.</td>
<td>Discuss with school administration. If it is not possible to have warm water, use cold. Cold water is less comfortable but will work (with soap) to remove germs from the hands.</td>
</tr>
<tr>
<td>Children cannot reach the taps or sink</td>
<td>Handwashing is important for all children.</td>
<td>Provide a stool or step that does not tip.</td>
</tr>
<tr>
<td>Need to conserve water. Taps should not be left running.</td>
<td>Good handwashing technique includes using a paper towel to turn off the taps. This prevents recontamination of the hands from dirty taps.</td>
<td>Suggest that students get their paper towel before washing their hands so that it is available when they need to turn off the taps. The towel can be tucked under the arm or into a pocket until it is needed.</td>
</tr>
<tr>
<td>Paper towel dispenser is far away from the sink</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper towel dispenser has a lever or button</td>
<td>Hands can be recontaminated by touching the lever or button to dispense a paper towel.</td>
<td>Show students how to use an elbow or forearm to dispense the towel or suggest they get the paper towel before washing their hands.</td>
</tr>
<tr>
<td><strong>Problem</strong></td>
<td><strong>Hygiene Principle</strong></td>
<td><strong>Solution</strong></td>
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<tr>
<td>Wastebasket is not near the door</td>
<td>Hands can be recontaminated by touching the washroom door or handle. Good handwashing technique includes using the paper towel to open the washroom door. To avoid making a mess, it's best to have the wastebasket near the door.</td>
<td>Move the wastebasket close to the door or prop open the door. If that's not possible, suggest that students take the towel with them and throw it away in the classroom.</td>
</tr>
<tr>
<td>Handwashing takes too much time</td>
<td>Handwashing prevents illness and reduces absenteeism. In the long run it saves time.</td>
<td>Establish routine times for students to wash their hands. Before lunch and after recess are ideal. Teach good handwashing technique and remove barriers so that students become proficient.</td>
</tr>
<tr>
<td>Custodial staff concerned about the mess in the washroom</td>
<td>Washrooms should be neat and tidy.</td>
<td>Reinforce the final message of good handwashing with the students to properly throw away their paper towel in the wastebasket.</td>
</tr>
<tr>
<td>Don't know if antibacterial soap is in use</td>
<td>Plain soap does not promote antibiotic resistance and is equally effective in preventing the spread of germs.</td>
<td>Ask about the soap that is used in your school. Read the ingredients. If the soap contains “triclosan” it is antibacterial soap. Antibacterial soap has negative medical side effects and does not work any better than plain soap. If antibacterial soap is in use, suggest switching to plain soap. Plain soap is generally less expensive.</td>
</tr>
</tbody>
</table>
**Recommended Children’s Book**

**Follow Up and Home Connection**
- Have students track for a week each time they washed their hands at school and record it on a chart. Have them report the total number of times that they washed their hands in a week.
- Show the Handwashing Video throughout the year if handwashing technique needs to be reinforced.
- Ask students to remind one another to wash their hands.
- Encourage parents and students to report to you any barriers to handwashing or ways of improving conditions in washrooms/sink areas. Refer to Practical Solutions for Handwashing Problems for help.
- Inform janitorial staff or principal whenever washrooms/sink area do not have adequate supplies for proper handwashing.
- Discuss the advantages of using plain soap with administrative and custodial staff.

**Acknowledgement**

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*The program was adapted to meet the British Columbia Education curriculum by Joanne Matheson, Educational Consultant and the Do Bugs Need Drugs? Program in British Columbia*