Germs and Games:
Teaching Health and Infectious Diseases with a Combination of Stories, Games and Fun Activities

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1 levine@haas.berkeley.edu I am grateful to all who contributed to this curriculum as students, teachers, testers, research assistants, artists, authors, and advisors. Melanie Cernak, Katie Holmes, Jenn Kotler, Benji Levine, Jeremy Levine, Billy Riggs, Nimerta Sandhu, Julia Sieberling, Gautam Srikanth and the students in BA 24 all contributed materials. Dozens of readers have given valued feedback. Most importantly, we appreciate feedback and ideas from many students and teachers in Cambodia, India, Kenya, Tanzania, and Uganda. I am especially grateful to the many organizations that shared their resources on the web and whose insights I have adopted or adapted here. If I forgot to cite anyone, please let me know. I appreciate funding from MAGIC at the University of Rochester. Errors remain my own.
PREFACE FOR THE GROUP LEADER OR TEACHER

This is an early draft manual for using stories, games and engaging activities to teach health topics to students ages 5 to adult.

As you know, each year a million or more children die from water-borne diseases, even more die from household air pollution, largely from smoky fires, malaria infects hundreds of millions, HIV and even measles take their deadly toll, and so forth. As you also know, simple interventions can prevent almost all of these illnesses: Washing hands with soap, bednets, and so forth.

Unfortunately, teaching about these risks and behaviors usually does not lead to sustained safe behaviors. This manual is based on the hypothesis that we can teach these familiar health lessons using a combination of stories, games and vivid activities.

While the stories, games and activities are meant to be fun, the curriculum is very serious. The activities are based in theories of education that stress the importance of repetition, vividness, and engaging students. The contents of the activities are built on theories of behavior change that stress information, habit formation, and social support for new behaviors (for example, creating a norm within a classroom to wash hands with soap). Germs fit well with stories and games because (1) the illnesses directly affect the students; (2) preventing germs is a conflict, and conflict makes stories and games vivid and exciting; and (3) much of prevention is about poop – a topic many younger students find fascinating.

The manual covers:
- Unit 1. Handwashing
- Unit 2. Safe water
- Unit 3. Sanitation
- Unit 4. Respiratory Infections
- Unit 5. Stay Healthy Together
- Unit 6. Malaria
- Unit 7. Accidents and First Aid
- Unit 8. Prevention, Diagnosis and Treatment

Each unit begins with a needs assessment, understanding the current health risks, attitudes and behaviors relating to each topic. This assessment may require observation and interviews with local nurses or other health professionals. The assessment also covers your program’s resources. The assessment will help you prioritize activities and fine-tune each unit for the needs of your students. If your students and/or school cannot access the supplies required for a unit (for example, a bednet), consider skipping that unit until you can establish relationships that make supplies possible.

The core of each unit is an array of stories, games, and activities such as experiments and art projects. Games include board games, card games, classroom games, and outdoor games (such as versions of “germ tag” showing how diseases spread and what prevents them). Some activities repeat in each unit, such as making (some of) posters, songs or skits on the theme of the
unit. Other activities add new layers in each unit, such as the class agreement on safe behaviors and several games that can add new layers of gameplay as students learn about new health threats, preventions and cures. Each unit closes with an optional quiz and student assessment.

Most units are designed to take 5-10 hours of program time, perhaps spread over a few weeks. It is easy to adjust the units to be longer or shorter.

**How to use this manual**

This manual uses a few conventions.

- Text the teacher or group leader reads is in *looks like this*.
- For many questions the answer we are hoping students will give in is *written like this*.
  - If students do not give the expected response, ask follow-up questions or (if needed) explain further.
- We refer to “students” or “players” and “teachers.” We realize sometimes the “students” will be adults and the “teacher” may be a group leader, facilitator, or one of the students acting as group leader.

**Review the activities in each unit**

- Your school or organization should review the activities in a unit and decide which fit the needs, interests and skills of the students.
  - It is fine to skip any activities that do not fit well with this setting, require supplies that are hard to get, etc.
  - It is often helpful to check with local health experts to determine which activities are appropriate and to fine-tune the lessons.
- Have teachers discuss the possible activities. Have everyone mention any concerns and also suggest variations or improvements.
- Modify rules, the stories and other activities to fit your setting.
- Gather the required supplies.

**Design each session**

- Divide the activities into sessions that fit your program
  - For example, one hour of teaching during a regular class.
- Start each session with: (5 minutes)
  - Ask: *What do you remember learning in the previous session?*
- End each session with: (5 minutes)
  - Ask: *Do you have any questions about the lessons we covered today?*
  - Ask: *What were the main lessons from today?*
    - Prompt the students with follow-up questions until they review the main points.
  - Optionally, each session can end with a brief quiz or with a quiz game. I include possible questions. Ask any questions that will help students understand.
For each activity

- Read instructions carefully.
  - As noted above, modify instructions as needed.
- Translate class materials as necessary.
- Do as much preparation as possible prior to class.
- Keep the discussion guide handy, as it suggests questions to ask.
- When reading stories:
  - Read the story ahead of time, and select voices for each main character.
  - Plan how you will hold the book so students see it clearly.
    - Carefully note any two-page spreads.
  - Break up any story with questions that help all students follow the story and make sure all students understand the health messages.
  - Students who are good at reading can read books to younger students.
  - If you have access to a computer screen or tablet, students often like to see images on the screen.
  - Only read a few minutes at a time. Read longer stories over several days.
- When playing games
  - Students often enjoy being on teams, even if the game can be played individually.

Two keys to using these materials

Key point #1: Let students explain

- We want students to learn by experiencing the activity, and then figuring out what lessons it holds for good health.
- Thus, do not explain why you are doing each activity beforehand. Instead, ask questions to guide students.
- Students will remember much more if they are the ones who figure out the point and explain it to classmates.

Key point #2: Your enthusiasm drives the class

- These activities are meant to be fun and engaging. If you approach each lesson with enthusiasm and good humor, the students will also.
  - Embrace laughter and silliness.
  - Make up new material as you go along.
- Have fun! That way the students will know it is also ok for them to have fun.

Pilot tests require your leadership

You are the experts at teaching in your community. Thus, I greatly appreciate you sharing your expertise and experience.

- Any information you can give me on how you implemented the games, stories and activities. For example,
  - Which activities did you skip, and why?
  - What rules or stories did you modify?
If you translated materials, can you share them so I can post them on the Web for other teachers to use?

- Any feedback you can give me on how the students reacted to each activity would be great. Ideally, you can take a few notes after you run each activity.
  - How did each activity work?
    - Did you have to modify parts as you went along?
    - How engaged were students?
    - Any evidence they learned anything or changed their attitudes?
    - Any ways to improve the activity?
  - Any evidence on changes in handwashing or other health behaviors?

- Please tell us about any new activities you introduced.
- Any suggestions on improving these materials are greatly appreciated.
- Send any questions or suggestions to David Levine, Levine@haas.berkeley.edu

I hope we can work together to create a set of engaging activities that can help teachers and students throughout the nation and throughout the world.
**Needs assessment: Overall resources**

There is a Needs Assessment for each chapter. This Needs Assessment covers topics that affect all chapters. Use this needs assessment to eliminate unnecessary or inappropriate exercises.

**Students**
- At what age or grade can students read picture books? Chapter books?
- What share of this curriculum can be presented to students of different grades in English (if any)?
- At what ages can boys and girls play together?
- Will girls play running games with boys?
  - Will girls play running games with other girls?
- When it comes to the behaviors we want, whose opinions really matter to students?
- Who has strong opinions about the behaviors we want?
- Through which media or channels do students get information?

**Student perceptions and beliefs**
- What are students’ main beliefs about what cause disease?
- What do students believe “Germs” are? (Or have students never heard of germs?)
- What goals do students seek in life overall?
- What information sources do students find credible?

**Prevention in the Community**

When thinking about the activities in this curriculum, consider the following resources:
- Parents
  - How willing are parents to come to a school meeting? To see students put on plays? To view posters?
  - How many parents support the school’s mission?
  - How many parents afford bednets, soap, etc.?
    - Do government clinics give nets to pregnant women?
  - What share of parents are literate?
  - What do most parents know about germs and health?
  - Can we lend stories or games for students to take home and play with siblings or read to younger siblings (and perhaps more of the family)?
- What types of performances do students do already?
  - Put on street plays,
  - Engage in singing contests
  - Etc.

**Health care**
- Where do people go for care for different ailments?
- Are there usually drugs at public clinics?
• What is the actual fee for a typical public clinic visit (including formal fees, informal “thank you payments,” and drugs)?

Data on health in this region

Go to the district health office and ask for any data on the disease incidence, especially for diarrheal diseases, malaria, and pneumonia. What are immunization rates? What is the rate of infant mortality? Child mortality?

• For 100 people or households in a year:
  o How many doctor visits?
  o How many hospitalizations?
• How much does one hospitalization cost?

If they do not have data for this district, regional or national data are useful as well.
## Unit 1. **HANDWASHING**

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**Background**

Diarrhea from unwashed hands causes hundreds of thousands of deaths a year. It also causes tens of millions of illnesses that prevent children from growing as tall as they could and prevents children from learning as much in school as they could.² Handwashing with soap is effective at reducing these problems.³

**Objectives for Handwashing Unit**

- **Learning** If you do not wash hands with soap you carry both serious diseases and disgusting poop to yourself and your neighbors.
- **Behavior**: Students wash hands with soap and make and use the soapy bottle. Students encourage others in these safe behaviors.

**Preparation: Needs assessment**

**Incidence of diarrheal illnesses and unwashed hands**

In most nations diarrheal diseases are the leading cause of child death after pneumonia (but ahead of malaria).

- How do they rank around here?
- For example, overall death rates from diarrheal diseases are at [http://www.worldlifeexpectancy.com/cause-of-death/diarrhoeal-diseases/by-country/](http://www.worldlifeexpectancy.com/cause-of-death/diarrhoeal-diseases/by-country/)

**Perceptions and beliefs**

Talk to parents, other teachers, nurses, etc.

- What do parents believe causes diarrhea?
- How concerned are parents and students about diarrhea?
- How is diarrhea usually treated? (e.g., do not give anything to eat or drink, or only give fluids, etc.)
- Who has influence on the students regarding handwashing with soap?

**Prevention at home**

- How many families have soap and water? (all/most/some/a few/ none)
- How many student wash hands with soap after using the latrine? (all/most/some/a few/ none)
  - Is there soap and water near the latrine?
- How many students wash hands with soap before eating? (all/most/some/a few/ none)
  - Are soap and water available near where students eat?

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• Whose help is needed to ensure there is soap and water?
• Who has influence on the students regarding handwashing with soap?
• What are the barriers to washing hands at home?

Prevention at school
• Observe the latrine for a short while.
  o Is the latrine clean, pretty clean, pretty dirty, or filthy?
  o Are soap and water available near the latrine?
  o How many children wash hands with soap after using the latrine?
    (all/most/some/a few/ none)
• Observe the students before eating.
  o Are soap and water available near where students eat?
  o How many students wash hands with soap before eating? (all/most/some/a few/
    none)
  o How, where and when does washing hand with soap takes place? Should it take
    place?
• Whose help is needed to ensure there is soap and water?
• Is the water for washing hands distant?
  o If so, how should we modify instructions in this chapter?
  o For example, should some students gather an extra jerry can of water to refill
    soapy bottles?

Reminder: You are the example

Make sure you always wash with soap before eating and after leaving the latrine, both at home
and school.

Introduction

PS SARADA

Time: 5 minutes

Ages: All

Objective: Introduce the concept of germs

Optional materials: Photographs of germs and a microscope

Activity: Explain to students

  • Our bodies are pretty amazing. Day after day, they work hard — turn
    food into energy, pumping blood, and much more.

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4 Adapted from http://kidshealth.org/kid/talk/qa/germs.html
• But there is a group of tiny invaders that can make our bodies sick — they're called germs.
• Germs are tiny living things that can cause disease.
• Germs are so small and sneaky that they creep into our bodies without being noticed.
  o Germs are so tiny that you need to use a special tool called a microscope to see them.
  o Optional: If you have pictures of a microscope, show students. Then show them scary pictures of germs: See appendix.

• When they get in our bodies, we don't know what hit us until we get sick – then we know we've been attacked!

• Some germs give us diarrhea – that is, runny poop that is hard to control.
  o Diarrhea makes you weak, makes it hard to run fast, and stops you from growing up strong and healthy.

• Germs cannot walk!
  o How do you think germs get from one tummy into someone else to make a new person sick?

Option: If the students are interested and do not find it too grotesque, ask them how the germs get out of a body. They should point out germs ride out in poop. This lesson sets up the importance of washing hands after leaving the latrine and before eating.

Keywords: Presentation, Germs, Symptoms, Diarrhea
Appendix: Pictures of a microscope and of germs


http://thecubicle.rebel.wordpress.com/category/workplace-germs/

http://media.masslive.com/talk_impact/photo/people-germs-under-microscope.jpg-cc2d6e602b990887.jpg

http://www.theguardian.com/uk/2011/jun/02/british-e-coli-cases-rise
Simulation: Glitter

Objective
Students will transfer glitter (or another powder such as turmeric or ) to one another. This exercise illustrates how easily germs spread; that friends can accidentally spread germs; and that soap and water are needed to stop germs.

Ages: All

Time: 15 minutes

What you need
- Hand lotion
- Glitter or any other visible powder (flour, coffee grounds, turmeric, etc.)
- Sink, soap and water or large bucket and soapy bottle (described below)
- Paper towels

Activity
Explain to students:
1. Put a drop of lotion on your hands and rub them together to spread the lotion out evenly.
2. With your hands over a sink or large bucket, have a helper put a pinch of glitter in the palm of one of your hands.
3. With your hands still over the sink, make a fist with the hand that has glitter on it, then spread your fingers out. What do you see?
4. Now press the palms of your hands together and pull them apart. What do you notice about your hands?
5. Touch your helper’s hand. Now do you see anything on it?

After getting the glitter on your hands, you should have noticed it spreading very easily to anything you touched, such as your helper's hand. If you accidently touched your mouth, nose or eyes while doing this activity, you may have found glitter getting left behind near these areas. Germs travel the same way and can easily enter your body if you touch food with dirty hands.

Alternative to steps 1-5: Put a bit of lotion and glitter on a ball, and have the students pass the ball around.

6. Get a paper towel and wipe your hands clean of all the glitter. Is it working?

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Adapted from: The National Theatre for Children, The Invisible Invaders from Innerspace!

A simpler version has the leader put turmeric or glitter on his or her hands and greet all as they come in. At the appropriate time, the leader points out how the powder has spread. So does poop!
When you tried to use a paper towel to remove the glitter, some of it probably came off, but most of it stayed on your hands.

7. After using the paper towel, wash hands with soap and water. Did the glitter come off?

But when you used soap and water to wash your hands, the glitter came off pretty easily.

Discussion

The glitter is acting the same way that the germs do: there are a lot of them, they spread around easily and it can be tough to get them off. The difference is that germs are so small you can’t see them without a microscope, so you have to know when you may have come into contact with germs and wash your hands often.

Germs cannot walk. That is why hands are a germ’s best friend!

So why is it important to wash your hands before you eat? It is also important as when you use the bathroom. If you don’t, the germs can easily spread to more places and to other people and cause sickness.

Key words: Demonstration, Prevention, Diarrhea, Handwashing, Soap

Notes: XX
- If you keep the rinse water in a tub, it will fill with glitter – making hands dirty again.
  - Use running water OR
  - teach lessons about how water gets dirty.
- Option: Dip hands for a drink of water. Show that glitter gets into the drinking water. That is why we use a tap for safe storage.
  - Or put a bit of beet juice or other vivid juice on a hand. When they dip, the color remains. What would happen if that had been poop and germs?
  - ≪Explain safe storage here, with pictures≫ xx
- If you use a towel to dry hands, have students note how the towel gets covered with glitter.
  - Ask: What happens to a clean hand that dries with that towel?
  - Ask: How can hands dry without using a dirty towel?
    - Get them to suggest air drying when no clean towel is nearby.
- It is possible paprika or pepper can be rinsed off, but the smell remains unless you use soap. Need smelly spices to try this.
**Story: King Akbar Writes a Law**

**PS  SARADA**

Objective: Reinforce that poop and germs can travel on hands unless washed with soap.

**Time:** 20 minutes

Ages: Read to 5-10, read by themselves when appropriate

**What you need**

One copy of picture book: *King Akbar Writes a Law*.

- I will write a version appropriate to any specific region.
- For example,
  - In southern India, King Krishna Deva Raya and his advisor Tenali Rama work well.
  - *Chief Nkanda Writes a Law* does not yet have pictures, but the language and names are more familiar in Tanzania.
  - *Chief Odera*… for Kenya

**Preparation**

- Read the book enough to familiarize yourself with the characters.
- Select voices for the main characters.
- A number of the pages require a two-page spread; familiarize yourself with those pages so you can show students both pages.
- Break up the story by asking the students lots of questions as you read.
  - Questions will help them stay on track and share understanding of any points some students miss
  - Questions will reinforce the health messages as they discover and share that filth can be invisible and odor-less, but still there (unless you wash hands with soap).
  - Break up any story with questions that help all students follow the story.
- Older students with appropriate literacy skills can read books to younger students.
- If you have access to a computer screen or tablet, students often like to see images on the screen.

**Activity**

Read picture book or story to students.

*Option:* Because this lesson is largely about health, even classes that teach in English should consider teachers reading in both the local language and English.

For older students: Read the story in the local language or in English, as appropriate.

**Discussion**

Ask students as you read:

- [after the pickle juice] *Why did King Akbar say he wanted to change the law, even if no filth can be seen?*
Students should reply: He could smell pickle juice on his hands, even though they looked clean.

[after the invisible ink] Why did the advisor Birbal say that the general Panther would need to be executed?
Students should reply: The Panther had invisible ink that could not be seen or smelled, so the Chancellor assumed it must be the work of the devil.

[When the Panther is threatening Birbal] Why did King Akbar say that the General Panther would not need to be executed? What is the new law?
Students should reply: The king realized that some things could not be seen or smelled, but were still real. He realized poop might remain as well!

[in the kitchen] Why did the king look disgusted and ready to throw up after he saw little bits of yellow in the food the cook prepared?
Students should reply: If little dots of turmeric spice could get from the cook’s left hand to the bread, then little dots – too small to see – of poop could also get into the king’s food.

What could the cook have done to stop having yellow bits in the food he prepared?
Students should reply: Washed hands with soap.

Ask after reading:

If something cannot be seen or even smelled, can it still be there?
Students should reply: Yes. Germs and invisible ink cannot be seen, but both are real.

What is the main thing Akbar learned?
Students should reply: Even when hands look clean, they can have germs or other filth on them.

Key words: Story, Prevention, Diarrhea, Handwashing, Soap
**Demonstration: Proper Handwashing**

**PS  SARADA**

Objective: Teach proper handwashing

Time: 10 minutes

Ages: All

What you need
- Soap and water or soapy bottle
- Tub to catch rinse water from many of the students.
- Towel to dry with
  - Make sure there is a clean towel for drying hands and procedures to ensure the clean towel is cleaned or replaced.

Preparation
- Identify a familiar rhyme or song that all the students will know that takes about 20 seconds to sing.

Activity
- Ask: Why do we wash hands?
  - Students should reply: Washing hands not only removes visible dirt, but also germs that are not visible to the naked eye.
- Using the sink area or a bucket with water, rinse your hands and as you dry them, ask students if they think you removed the germs from your hands. (*Answer: No, you didn’t use soap.*)
- Quickly wash your hands with soap
- As you dry your hands ask students: Did I remove all the germs from my hands.
  - Students should reply: No, you washed them too fast.
- Explain: The amount of time you take to wash your hands is as important as the soap and water. One good way of making sure you take enough time to wash your hands is by singing a familiar rhyme that takes 20 seconds or so while you wash.
- Demonstrate proper hand washing (scrubbing all the surfaces and between your fingers) and have the group sing the song while you do it.
  - Younger students can learn the rhyme one line per day.
- Older grades: Wipe your hands on a dirty towel or article of clothing.
  - Ask students: Are my hands are now clean?
  - Students should reply: No, you wiped them on a filthy towel that probably has lots of germs.

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Ask students: *What is a clean place or way to dry hands?*

- If a clean towel is unlikely to be available, ask: *If there is no clean place to wipe hands, how else can they get dry?*
- Students should reply: *No, Just wave them in the air and they will dry.*

- Have all students demonstrate proper handwashing. Have them give polite feedback to each other.

Key words: Demonstration, Prevention, Diarrhea, Handwashing, Soap
Demonstration: What is on our hands

**PS**

Objective: Show what filth is on hands not washed with soap

Time: 10 minutes

Ages: All

What you need: One soapy damp white cloth for every few students.

Activity
- Just before eating, hand a few students a soapy damp white cloth
- Have students wipe their hands carefully, and then pass on

Discussion
  - Ask: Would you like to eat what is on this towel?
    - No, it is disgusting
  - Ask: If you went to lunch without washing hands with soap, what would you be eating?
    - Everything making this towel dirty!

Key words: Demonstration, Prevention, Diarrhea, Handwashing, Soap

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7 Suggested by Julie Kwon
Board Game: Grandma wants you to eat Candy

**PS  SARADA**

Objective
Reinforce safe behaviors: boil water, wash hands with soap, use a latrine.

**Time:** 20 minutes

What you need
- One printed board and one die per group of 2-6 students.
  - If you print the board on multiple pages, cut them carefully and tape them.
- One token per child (e.g., colored chip or stone different from the rest of her group).

For 2-6 players (best for 3-4 players)

Ages 4-13

Activity

Explain:
- The object of the game is to get to Grandma’s house, where she is waiting to give you a piece of her candy. She lives at the top of the hill. But remember, Grandma only lets you to eat candy if you have clean hands!
- Each player places their piece at the bottom left square.
- The youngest player goes first. Turns continue to the left.
- Roll a die to move along the board towards the top of the hill.
- If you land on a square showing a safe behavior such as washing hands with soap or using the bright orange water filter, you get to take a short cut and climb a tree up the hill. Trees lead uphill only.
- If you land on a square showing an unsafe behavior such as pooping outdoors (instead of in a latrine), you slide back down a muddy hillside. Muddy slides lead downhill only.
- The squares without the bottom of a tree or the top of a muddy slide are just regular squares.
- The first player to get to or past the last square, the one with the star, gets to Grandma’s house first – and wins!
- **You must explain why you go up a tree or down a muddy slide.**
  - If you forge to explain, you cannot climb a tree or you lose a turn after sliding down a muddy slide.

Note: If possible, students should also be allowed to play this game during breaks or before or after school.

Option for older students: If the game goes too fast, flip 2 or 3 coins: move forward # of heads.

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8 Game designed by David I. Levine. Art and design by Bernadette Justine McVerry.
Discussion
Ask students about each tree and muddy slide:

- *What is happening?*
- *Is the kid going closer or further away?*
- *Why?*
  - If going further away: *What could the kid have done to avoid the muddy slide?*

Key words: Board Game, Prevention, Diarrhea, Water, Handwashing, Soap, Boiling
Soap or Sorry⁹

SARADA

Objective: Compete to make a row of three ways times to wash hands with soap, or 3 times to forget.

Ages: 7-adult

Time: 10 minutes

What you need:
- Three Germ cards and 3 Soap cards.
  - You can print the cards below, or draw your own.
- Playing board: You can print the board below, or just draw one on a piece of paper.
  - Draw a 3 by 3 board of dots, with each dot far enough apart to fit one card.
    - Three vertical lines form the three columns.
    - Two diagonal lines connect the two opposite corners of the board.

The Germ player wants to make a row of the three Germ cards: Forget to use soap at latrine, Forget to use soap before cooking, and Forget to use soap before eating. The Person player wants to make a row of the three times to wash hands with soap: Wash with soap at latrine, Wash with soap before cooking, and Wash with soap before eating. The three in a row can be horizontal, vertical, or diagonal.

Preparation
- Players decide whether to be the Germs (and get the three Germ cards) or People (and get the three water treatment cards).
- The board is empty in the beginning.

Game Play
- **Drop phase:** Each player drops one piece per turn on any vacant space on the board.
  - The Germs player drops first.
  - Players alternate their turns.
  - Pieces cannot move until all three pieces have been dropped.
- **Move phase:** After both players have dropped their three pieces, a player can move one piece to any empty dot next to it that is connected by a line.
  - Moves must be along the lines on the board.
  - A player can move only one piece per turn.
  - A piece can only move to an empty square.
- Players win the game when they create three in a row.
  - The player can win during either the Drop phase or Move phase.

---

- The game is a **draw** if a player cannot make a move or if a position repeats three times.
Soap or Sorry Board
Cards for “Soap or Sorry!”

Wash with soap at latrine
Wash with soap before cooking
Wash with soap before eating

Forget to use soap at latrine
Forget to use soap before cooking
Forget to use soap before eating
Outdoor game: Germ tag & Handwashing

Objective: See how germs spread, and that soap can stop them (if you wash well).

Time: 20 minutes

Ages: 5-12

What you need
- 4-40 students
- A marked area with enough room for students to run around.
- A few tokens of two types, one to mark who is a Germ and one to mark who is a Soap

Preparation
- Mark a playing area
- Mark a small area as the Sink or Handwashing Station

Activity

Round 1: Split the students into two groups: about 10% Germs, the rest Hands.

Explain:
- Hands run with their hands in front of them.
- Germs chase Hands.
- When a Germ tags any part of a Hand player, the Germ and Hand hold hands and continue to chase other Hands.
- When they tag more Hands, they make a longer chain.
- The round is over when all the Hands are tagged.

Discuss Round 1
Ask students: What happened?
Students should explain: A few Germs can quickly infect a large group. When one person has germs on his or her hands, they can get germs all over.
Ask students: How did Hands feel as they got surrounded?
Students should explain: Hands felt like Germs were everywhere and no way to get away from Germs.

Round 2: Split the students into three groups: about 10% Germs, 5% Soap, and the rest are Hands.

Explain:
- Soap players carry soap (or tokens representing soap) with them to show their status.

• As before, Germs chase Hands and make chains.
• Now a Soap can tag any part of a chain of a Germ and one or more Hands.
• Then the soap plus chain comes to the Handwashing Station. Each Hand acts out washing hands for 20 seconds.
  o When each Hand is done, it can run away from the Germ
  o When the Hands have left, the Soap must count 5 seconds and then can start chasing Hands again.
  o If the Hand does not wash for 20 seconds, the Germ can call the Hand back and the Hand remains stuck to (holding hands with) the Germ as the Germ chain chases more Hands.

The round ends when all Hands are tagged or when it is clear that this round lasts longer than Round 1.

Discuss Round 2:
• Ask students: What happened. How is Round 2 different than Round 1?
  o Students should explain: Soap slows down how fast germs spread.
• Ask students: Was this round faster or slower than last round?
  o Slower. Now, a few germs do not spread and infect everyone
• Ask students: What happens if people do not wash well enough to get rid of germs?
  o If people do not wash well, the germs can still chase a lot.

Key words: Outdoor game, Prevention, Diarrhea, Handwashing, Soap

In the following two versions of freeze tag players have to wash (or act out washing) hands, which reinforces the safe behavior. Both assume there is a rhyme students know that helps time handwashing.

Soapy Bottle Germ Tag (filled only with water, if we want to save soap)
1. If a Germ player tags a Hand player, the Hand player freezes.
2. A Soap player runs over and squeezes some water (representing soapy water) on the frozen Hand player’s hands.
3. The Hand player sings the rhyme and mimes washing hands and drying.
4. Then the Hand player is unfrozen.
   a. Note: If the Soap player is unfreezing too quickly (so the game is no fun), then make Soap stay near the Hands till the rhyme is finished.

Soapy Bucket Germ Tag\(^{11}\)
1. If a Germ player tags a Hand player, the Hand player freezes.
2. A Soap player runs over and tags the frozen Hand player.

\(^{11}\) Suggested by Sam Kironde.
3. The Hand player runs to the soapy bucket, sings the rhyme and actually washes hands.
4. Then the Hand player is free to run around more.

**Turmeric Germ Tag**\(^\text{12}\)

As in the “glitter simulation”, spread turmeric on one child’s hands. He is “It”. He runs after other children and grabs their hands. They then get turmeric on their hands and join It in chasing the rest of the students.

Discuss how germs spread by contact with dirty hands.

Then have the child with turmeric-covered hands rinse them with water.
- The turmeric powder should come off, but not the stain.
- Explain *Germs are sticky, like the stain.*
- Then have the child wash with soap and water.
- Ask: *Why it is important to use soap when you want to remove sticky stuff?*

**Variation:** Combine Turmeric Germ Tag with the Soapy Germ Tag, and have children who are tagged go and wash hands to rejoin the game.

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\(^\text{12}\) Suggested by Bhagyashree Ganesh.
The Bully (comic)

Ages: 7-adult

Time: 5 minutes

What you need: Print out this comic or a screen to show it to students.

Let children read “The Bully” comic.
Does the girl really think Bruto is cool?
Do the other kids think Bruto is cool? Why are they laughing at Bruto.
**Optional assessment: Test students’ application of their new knowledge**\(^\text{13}\)

**Objective**

Track if students apply their knowledge of handwashing and remind each other to wash hands.

**Time:** 10 minutes

**Age:** Any

**What you need**

One piece of candy or other treat per student.
A nearby place for students to wash hands.

**Activity**

- Offer a bowl of treats to the students, making clear there is enough for each child to have one treat.
- See if students suggest watching hands before grabbing food.
  - If students forget: Remind them to wash before eating.

**Discussion**

- Have the students discuss why they did or did not wash.
  - If some reminded others, discuss the value of such reminders. Are those reminded grateful?

**Key words:** Assessment, Prevention, Diarrhea, Handwashing, Soap

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\(^{13}\) Gautam Srikanth invented this assessment and reinforcement activity.
**Making: Making a Soapy Water Bottle**

**PS SARADA**

Objective: Make a low-cost soapy water bottle that students can take home and leave near the family latrine.

Time: 20 minutes

**What you need**

- One empty and clean plastic 1.5 litre water bottle for each child.
- 30 g of detergent powder per child (plus extra for spillage)
  - That is, about 1.5 kg. for 40 students
- A funnel for every few students.
  - You can make a few funnels of paper beforehand. See Appendix.
- Something that will poke a hole in the lid of the plastic bottle.

**Age:** Any

**Preparation**

- You can make a few funnels of paper beforehand. See Appendix.

**Activity**

- Poke a hole in the lid of each plastic bottle.
- Have each student:
  - Measure 30 g of laundry soap – about two heaping spoonfuls.
  - Use the funnel that is being passed around the class to put the soap in the bottle.
  - Fill the bottle mostly with water.
  - Cover the hole on top of the bottle and shake.

**Explain:**

- You have now made soapy water good for washing hands!

**Ask**

- Where is a good place to leave the soapy bottle?
- Students should reply: Near the latrine or where we eat.

**Explain**

- Please bring the soapy bottle home and tell your parents:
  - This soapy bottle is perfect to leave by the latrine.
  - It is cheaper to refill the bottle with two big spoonfuls of detergent than to purchase a bar of soap, and it works great.
After you use the soapy bottle, you can tell your hands are clean because they remain a little slippery.

Warning: Some students may start to squirt the soapy water as a game. Have students agree the water is just for washing hands.

Key words: Making, Prevention, Diarrhea, Handwashing, Soap
Appendix: Making a paper funnel

Objective: Make a funnel for the in-class exercise and/or for students to take home to refill the soapy bottle with detergent.

Time: Prepare ahead, or 5 minutes in class

What you need

- Piece of paper at least 20 cm. across for each group or for each child
- Tape
- OR: An envelope for each group or child

Activity

- Cut a circle of paper about 20 cm. across (to make a funnel about 9 cm. high)
- Cut out one quarter (see picture).
- Then overlap the cut edges of the missing quarter and the paper will make a cone.
- Tape the overlapping edges.
- Cut out 0.6 cm. from the point to make the hole.

OR: A funnel can also be made by cutting the tip off an envelope and cutting the envelope to size.

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14 Adapted from [http://www.wikihow.com/Make-a-Funnel-or-Cone-from-Paper](http://www.wikihow.com/Make-a-Funnel-or-Cone-from-Paper)
Making: Making a tippy tap\textsuperscript{15}

The Tippy Tap is a great handwashing station for a school. The soapy bottle is great for homes.

\textsuperscript{15} The illustrations are from \url{http://www.tippytap.org/wp-content/uploads/2011/03/How-to-build-a-tippy-tap-manual.pdf} A video is at \url{http://www.youtube.com/watch?v=Qdpd3roZjYw&feature=plcp} Other instructions are at \url{http://www.cdc.gov/safewater/publications_pages/tippy-tap.pdf} and \url{http://www.wot.utwente.nl/publications/tippy-tap.pdf}
Class participation story: Handwashing

Objective: Students learn that water from the pump can make you sick, while boiling makes water safe.

Time: 10 minutes

Ages: 5-9 years old

Preparation: You can write the special words & sounds on the board or hold up pieces of paper showing each special word and what to do.

Activity

Explain:

We will read a story together. When you hear one of these special words in the story, make these sounds and movements. Let’s practice:

<table>
<thead>
<tr>
<th>Word in story</th>
<th>Sound to make</th>
<th>Movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>DINNER</td>
<td>Yum Yum</td>
<td>Rub tummy in a big circle</td>
</tr>
<tr>
<td>GERM</td>
<td>Heh heh (evil laugh)</td>
<td>Look slyly left and right</td>
</tr>
<tr>
<td>UNHAPPY</td>
<td>Ohh oh</td>
<td>Sad face &amp; hold tummy</td>
</tr>
<tr>
<td>HAPPY</td>
<td>YAY‼️</td>
<td>Pump fists in the air</td>
</tr>
<tr>
<td>HAND</td>
<td>[sound of clap]</td>
<td>Clap</td>
</tr>
<tr>
<td>SOAP</td>
<td>[swish, swish sound of rubbing hands]</td>
<td>Act out washing with soap</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When you hear</th>
<th>Sound to make</th>
</tr>
</thead>
<tbody>
<tr>
<td>DINNER</td>
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<tr>
<td></td>
<td>&amp; rub tummy</td>
</tr>
<tr>
<td>GERM</td>
<td>Heh heh (evil laugh)</td>
</tr>
<tr>
<td></td>
<td>&amp; look slyly to each side</td>
</tr>
<tr>
<td>UNHAPPY</td>
<td>Ohh oh</td>
</tr>
<tr>
<td></td>
<td>And hold tummy</td>
</tr>
</tbody>
</table>
HAPPY  
YAY!!
And pump fist in the air

HAND
Clap

SOAP
Rub hands as if you are washing with soap

---

Option: Cut out these cards and hold up the right card when you read each word. Or just point to them on a page.

Read this story

I went to DINNER. My HANDS had GERMS on them.

When I was done with DINNER, I had eaten the GERMS! The GERMS were HAPPY.

I was not HAPPY. I felt sick and UNHAPPY.

My mommy told me, “Before you eat DINNER, it is important to wash HANDS with SOAP. When you wash HANDS with SOAP, you get rid of the GERMS.”

So the next time I sat down to DINNER, I made sure to wash HANDS with SOAP.

The GERMS were UNHAPPY! But I had DINNER and stayed healthy, so I was HAPPY!
Reminder: Reinforce the Habit of Handwashing

Objectives: Create the habits of handwashing with soap after leaving the latrine and when called to eat

Time: 20 minutes once, a few days at 5 minutes

Ages: 5 and up

What you need: None

Preparation:

Identify one to three appropriate phrases, gestures, or images that create a good feeling in this setting. For example,

- A phrase might be: “Way to go!” “Super!” or “Great job!”.  
  - If there is a familiar victory song, you can select a line. In that case, the line would be sung: “You are the champion…”
- A gesture might be a raised fist, a fist pump, a thumb’s up, etc. (ass appropriate in your setting). Alternatively, create a small movement such as three-step “victory dance”.
- An image might be the village cheering, or a stadium cheering a football star, etc.

Ensure soap and water are convenient outside the latrine and between the classroom and where students eat.

- Have a process in place to refill soap and water, as needed.

Activity

Ask the students if they think there is an important habit that can stop the spread of poop and germs. Wait till they say “Wash hands with soap after leaving the latrine” and “Wash hands with soap before eating.”

Tell them each time they wash hands with soap after leaving the latrine and when they are called to eat, they are saving the class and the village from pollution by poop and attacks by germs. If the whole village could watch them, everyone would cheer.

Tell the students:

- Each time you wash hands with soap after leaving the latrine and when you are called to eat, you are protecting the class and the village from pollution by poop and attacks by germs. If the whole village could see you, everyone would cheer you!
- Thus, each time you leave the latrine or are called to eat and wash hands with soap, you should stop and:
  - Repeat your encouraging phrase
  - [What phrase should students repeat?]

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- You can tell all the students one phrase to use
  - or let them choose from two or three phrases or song lines that you present.
- You can repeat the phrase to yourself or out loud. You can sing it if it is a song lyric.
  - Repeat your encouraging gesture or movement
    - Again, you can give students a specific gesture or movement, or let them selection from 2 or three choices your present
  - Imagine the picture and sounds of a crowd cheering your great work.
- Take a moment to picture yourself drinking treated water. Then repeat the phrase, make the gesture, and hear the cheers of the crowd. Let’s practice now, when I pretend to call you to lunch.
  - “Students: It is now time for lunch.”
  - Have students wash hands with soap and do the self-encouragement
- Now picture yourself using the latrine and stopping to wash hands carefully with soap. Again, repeat the phrase, make the gesture, and hear the cheers of the crowd.
  - If you have time; Have students visit the latrine for a second, walk out, wash hands with soap, and do the self-encouragement

Repeat these instructions a few days in a row.

After two weeks, most students should have acquired the habit of washing with soap when leaving the latrine and when called to eat.

Key words: Activity, Prevention, Reminder, Handwashing, Diarrhea, Soap
**Art activity: Skits**\(^{17}\)

Objectives: Students act out challenges, find solutions, and practice reminders regarding handwashing with soap in a nonthreatening and fun environment

**Notes on all art activities: Skits, posters and songs.**

The teacher might assign students to one of skits, posters or songs, or let students choose which they preferred. These art activities are possible for each unit, so you can decide which activity best matches each unit, or just rotate among them.

If students create skits, songs and/or posters that are amusing and present the health messages well, you can share the student projects with the community at village meetings, market days, etc. These presentations could be for all the projects or for only the best student projects.

If this manual is being used in a group of groups or classrooms, it is useful to think about a competition for best skit, poster or song (within age groups).

**Time:** 20 minutes + 5 minutes per group to present

**Ages:** Any

**What you need**

- None required.
- Optionally: props to represent a latrine and an eating area, soap, fake food, etc.
  - For a fancier show, search for props like clothes suited to the different characters.

**Activity**

Divide students into small groups and ask each group to create a skit about handwashing.

**Picking the scenario**

You can allow students to make up skits on their own with no guidance, or you can provide them with a scenario or situation to act out.

If they pick the scenario, explain

- *Put events from your daily life at home and in school into the show:*
  - *What happens at home, in school, with friends related to handwashing?*
  - *What are the dangers and problems related to handwashing?*

\(^{17}\) Adapted from Locks, *et al.*, 2006 “C:\Users\David\Documents\My Dropbox\Development & Art\Games\Other games\Activity_Book_Final_Acrobat5.pdf” and [http://www.sodis.ch/safewaterschool/safewaterschoolmanual/safewaterschoolmanual.pdf](http://www.sodis.ch/safewaterschool/safewaterschoolmanual/safewaterschoolmanual.pdf)
What will happen if the problems cannot be solved?
• Option for more drama: There has to be a villain and a hero.

If you pick the scenario, here are some possibilities. For younger students, you should select a simple topic.

1) Parts of: King Akbar writes a Law
2) [pure mime] Someone leaves the “latrine” [on stage] with glitter on his or her hands. The actor then serves food to others, and the audience sees the glitter spread.
   a. (Adapted from a public service announcement; I need to find the source.)
   b. (Can be integrated with other scenarios.)
3) An older relative does not understand why it is important to wash hands prior to eating, as long as the hands look clean. The younger children in the family keep getting sick, but everyone is afraid to correct the older relative. Will a brave relative step up and explain handwashing? If so, what happens to the children?
4) Anna is engaged to marry Joseph. Anna’s parents invite Joseph’s parents over to discuss the wedding. Joseph’s parents see that Anna does not wash hands before preparing food for them. They are thinking of calling off the wedding.
5) Some students act as germs on giant hands. They hear the kid who owns these hands (a voice off stage) say he won’t wash hands. How do they react? Then someone reminds the kid, so he decides to wash hands. What happens when soap arrives? (Soap can be other actors.)
6) Children in a community keep getting diarrhea. When they are all healthy, for a moment, they get together and try to solve the mystery of why. What will they discover is the cause? What will they decide to do?
7) You see a friend leave the latrine, but she forgets to wash hands with soap.
   a. Option: Other actors could be gross germs she leaves behind on everything she touches.
8) A new kid comes to town and does not know that it is important to wash hands before eating. Everyone is mean to him, and he does not know why.
9) Some of the older kids make fun of a younger kid for being a teachers’ pet because he always washes hands with soap after leaving the latrine.
10) Two teenage girls at a dance think a boy is cute. Then they see him coming out of the latrine after pooping – and not washing hands with soap. Now he is coming over to ask one of them to dance. What will they say to each other about him? To him?
11) Big brother or sister teaches a toddler to wash hand with soap.
12) More generally, skits can involve
   a. Acceptance of others
   b. How family members get along
   c. Physical growth (especially size)
   d. Fear of the unknown

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Preparation

Explain:

- Put yourself into the scene and think, speak, and act as if the situation were happening to you in real life.
- Your group has five minutes to decide
  - What are the characters in the story?
  - Who can play which role?
  - The attitudes of each character, how that person behaves and thinks
  - Where the scene takes place
  - The first and last sentences of the skit plus one idea of what happens in the middle
    - You do not need to decide what each actor says.
    - Instead, during the performance you should decide how your character would reply to what others say.

Puppet show

A puppet show can be a fun alternative to a skit.

- Almost every material can be used to build a puppet, for example boxes, cans, bottles, leaves, clothes. Suggestion: Look at your hands and make a drawing of them. Then exchange your drawings with a friend and convert the drawings into characters, with eyes, mouth, hair, glasses. Cut out the drawings, glue it to a stick ... and we have a puppet! You can also build a stage, so that the spectators only see the puppets.
- To give life to our puppets, practice in groups of three or four. Move the puppets in different ways: walk, move slowly, fly, crawl, crouch, embrace, fall forward, backward, sit, talk to the public, talk to the puppets.

Performances

Students can perform the skit or puppet show many places:

- for the class
- for other classes in the school
- If the students would feel honored, for the teachers and/or principal
- at a parents’ meeting (if parents would come), village meeting, market day, etc.
- at a multi-class or multi-school contest
- Option: Take video of any skit and post to YouTube.
  - Please email me (Levine@haas.berkeley.edu) with a description of the skit and I will link to the video.

Key words: Arts, Prevention, Reminder, Handwashing, Diarrhea, Soap, Outreach
Art activity: Songs

Objectives: Students write fun songs about the challenges, solutions, and reminders regarding handwashing with soap

Time: 20 minutes + 5 minutes per group to present

Ages: Literate

What you need: Writing materials (pencil and paper)

Activity

Divide the students into small groups. Have each group choose a familiar melody and write a handwashing song to it.

A more ambitious possibility for older students:

- A rap battle started by a cool kid who thinks it is wimpy to wash hands with soap, but he ends up humiliated when others point out he walks around with poop on his hands.

Familiar melodies you can consider using:

- “Twinkle, Twinkle Little Star”
- “Row, Row, Row Your Boat”
  - Which makes it easy to sing the song as a round.
- “The Itsy-Bitsy Spider”
- Familiar folk songs
- Local popular songs (often from movies)
- Etc.

You can include some (not all!) of these themes in your song:

- How to wash
  - Hand Washing
  - Soap
  - Rinsing with water is not enough
- When to wash
  - Before meals
  - After using the latrine, toilet or potty
- What you avoid
  - Poop (or synonyms)
  - Germs
  - Disease
  - Diarrhea
- What you gain
  - Prevention
  - Clean
  - Safe
• Remind your friends so they do not carry poop and germs

Songs can be especially fun if you
• Teach the song to the class
  o If the song permits: Divide the class and sing it as a round
• Include hand motions or dance steps
• If anyone is a musician: Bring in some musical instruments to accompany
• If you have access to technology: Sign it karaoke style with the instrumentation coming from a phone or computer speakers

Key words: Arts, Prevention, Reminder, Handwashing, Diarrhea, Soap, Outreach
**Song for a line of kids washing hands**

If a line of kids is waiting turns to wash hands they can sing this round
1. Kids at the head of the line sing the Waiting Verse twice through
2. Then they wash while singing the Washing Verse twice through
3. Then they leave and everyone moves forward.

Here is an example to the tune of “Row, row, row your boat”

The washer starts washing and sings the **Washer Verses** through:

Wash, wash, wash my hands,
    Best they’ve ever been.
Lots of water, lots of soap,
    So I will be clean.

Wash, wash, wash my hands,
    till the germs are gone.
Now it’s time to rinse them off,
    And this song is done.

When the Washers are two lines into their song, the first in the queue starts the **Waiting Verse**

Wait, wait, wait my turn,
    till the queue is done.
Then it’s time to wash my hands,
    Washing’s lots of fun.

Note: these words can use lots of improvement. Younger kids might sing one verse of the Washer verses twice.

When the washer is done twice through, person # 1 in line starts washing and singing the Washer Verse twice through. Person # 2 in queue moves to the head of the queue and two lines later starts singing the Waiting Verse twice through.
**Art activity: Posters**

Objectives: Students create posters that reinforce messages about handwashing with soap

**Time:** 40 minutes

**What you need**
- Paper and colorful pens
- Optionally: glue to add depth to the poster
- Optionally: Magazines so students can cut out images.

**Ages:** Any

**Activity**

**Explain:**
- *Please design posters about handwashing with soap for display around the school or community.*
- *You should combine words and pictures to share their message. For example, a picture of a family that says, “We do not bring poop into our household!”*
- *Be creative and think of all the good things about the healthy behaviors.*

- For students who cannot write: *I will write the short message on your poster that you tell to me.*
- For students learning to write: *I will write the short message on paper that you tell to me. You can then copy the message onto your poster.*

If you have glue, students can also be creative about how to give the poster some depth. For example, pictures cut from newspapers and magazines, recycled packaging, cellophane, and food wrappers can all add depth.

**Options:** Students can illustrate one of the stories they have read or one of the skits the class made.

**Resources:** Images of germs

Images of germs, if you want to draw germs:
- Tooth decay

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19 Adapted from Locks, *et al.*, 2006 “C:\Users\David\Documents\My Dropbox\Development & Art\Games\Other games\Activity_Book_Final_Acrobat5.pdf”
• http://myteeth.co.za/blog/?p=1721
  • Cold and flu viruses http://studenthealth.ucsf.edu/cold

Options:
  • Posters can be put up in the class, the school, or around the community
  • An art contest can span the class, the school, or multiple schools

Key words: Arts, Prevention, Reminder, Handwashing, Diarrhea, Soap, Outreach
Integrate family with handwashing topics

Practice explaining about handwashing

Objective: Students are able to explain to younger siblings why to wash hands and refill soapy bottle.

Time: 10 minutes

Ages: 7 and up

Activity

Have students practice explaining to a younger sibling:
- Why it is important to wash hands with soap
- Why it is important to refill the soapy water bottle with more soap and water and leave it by the latrine

Have them give feedback to each other to make sure the basic lessons are covered:
- When you leave the latrine, poop and germs remain on your hands even if you cannot see them.
- The poop is disgusting and the germs can make you sick.
- Thus, you need to wash hands with soap when you leave the latrine and before eating.
- It is important to refill the soapy water bottle with more soap and water and leave it by the latrine so our family does not accidentally eat poop and germs.

Assessment: Household survey and parental signature

Objective: Students bring a brief assessment home to spark a discussion of handwashing practices with their parents and family

Note: We are not taking the replies as “truth” – the assessment is just meant to spark discussion.

What you need: Short assessments for each child to bring home
Note: Should be done with pictures.

5. Share the overall report cards with the children and give them targets to improve.

Activity

- Students bring an assessment home for handwashing
  - If possible: “Explain to parents the benefits to them completing then student scorecard and how they can complete the scorecard. This could be at a parent teacher meeting or, if there is time, in one to one meetings with each child’s parents. If parents do not submit scorecards, teachers can [perhaps] wait at the
school gate when parents collect their children and ask parents to share scores on the spot.  

- Parents sign off on assessment and the child returns the assessment

Ages: Literate students (or parents)

Time: 5 minutes in class to distribute and 5 minutes to collect (or 20 minutes, with discussion).

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20 STIR Education, “Parental Involvement”. The line “Please ensure your child is very honest in their answers so that the school can provide each child the level of support they need” is also adapted from that document.

At another school “a monthly newsletter is provided to the parents that has all the information about the events to be held in school such as special Fridays, special food days, holidays, test schedules etc. Apart from this the newsletter also has articles on health, nutrition and better parenting.”

Dear parent:

We would like your child to circle an answer to each question.

Please put your name or mark to show your child has talked about their answers with you.

Student’s name _________________

1) At home your child has access to soap and water near where they poop.
   Always  Usually  Sometimes  Rarely  Never

2) Your child washes with soap and water after they poop.
   Always  Usually  Sometimes  Rarely  Never

3) Your child washes with soap and water before eating.
   Always  Usually  Sometimes  Rarely  Never

4) The student showed me the soapy bottle and discussed it with me.
   Yes  No

5) Child helps keep the soapy bottle filled.
   Always  Usually  Sometimes  Rarely  Never

6) Has your child explained to his/her younger siblings why it is important to wash hands with both soap and water after using the latrine and before eating?
   Yes  No  There are no younger family members

Option: Should we have a more open-ended question such as “What are obstacles to washing hands before eating at your home?” The student won’t write down many of the replies, but such questions spark better discussions.

Please ensure your child is very honest in their answers so that the school can provide each child the level of support they need.

Parent’s signature or mark ____________________

Note: If the school is about to put on a play or poster session, you can add:

7) Your child invited me to the school play [poster session] on <<date>>.
   Yes  No

Q: Can a star chart work, where parents check off each day for a week or two?
Note: If the student did a poster and brought it home, you can add:

8) Your child shared the poster with your family and discussed its message.
   Yes   No

Discussion

Ask
- How did you parents treat the assessment?
  - What did you have a chance to explain from what you have learned?
  - Do parents have more interest in the soapy bottle?
- How did it go teaching younger family members?

Concerns
- Talking about poop is undignified, but “defecation” is unfamiliar.
  - In each setting: What is the right language that is understandable but not vulgar?
- In middle-class schools it seems condescending to ask questions about owning latrines.
- In very poor places, parents might feel humiliated they do not own a latrine.
  - I do not mind if the parents lie on the assessment; as long as the assessment sparks a discussion with the kid about why a latrine is important.
- In some settings parents may not engage with the schools.
  - If so, students won’t return many signed forms.
  - But the forms could slightly increase parental engagement.
- In many cases students will sign for their parents.
  - Thus, the form will work better if there is a high likelihood the teacher will meet with the parents soon.
- Parents might think the kid is in trouble if they are getting a note from the teacher.
- Etc.

Note: repeat a version of this assessment for most topics.
**Quiz**

Objective: Review why it is important to wash hands with soap.

Time: 5 minutes

Ages: 6 and older

Preparation: Decide if you are going to have written replies or individual, and if individuals can work together.

Activity

Explain how students should answer:
- Individual spoken replies
- Group spoken replies
- Individual written answers

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>How can you stop germs from poop getting onto food you eat and you serve?</td>
<td>Wash your hands with soap and water after going poop and before preparing or eating food</td>
</tr>
<tr>
<td>What are 2 key times to wash hands with soap?</td>
<td>Any of: After pooping, after sneezing, before preparing food, after cleaning a baby’s bottom, before eating</td>
</tr>
<tr>
<td>Why are germs on your hands dangerous?</td>
<td>They cause diseases and diarrhea</td>
</tr>
<tr>
<td>How should you respond when you see others not washing their hands after the latrine?</td>
<td>Encourage them to wash their hands and remind them that not washing their hands spreads poop and germs and can cause diseases</td>
</tr>
</tbody>
</table>
**Quiz Game: Place the Steps in Order**

Objective: Students should be able to identify the correct hand washing steps in order.

Time: 10 minutes.

What you need:
- 10 cards (or small pieces of paper).

Preparation:
- Write a step on each card.
  - Six of the cards should be steps:
    - Wet hands with clean and filtered water.
    - Apply soap.
    - Rub hands together between fingers for 20 seconds.
    - Don’t forget your fingernails.
    - Rinse away all soap.
    - Dry your hands on something that is clean.
  - For the extra cards make-up steps that students should not use (ex. “Dry your hands on the ground” or “scratch your head for 10 seconds”)

Activity:
- Lay each card face-up and have students place them in the correct order.
- The student who puts the 6 steps in order the quickest wins the game.

**Post-assessment**

**Prevention at school**
- Observe the latrine for a short while.
  - Is the latrine clean, pretty clean, pretty dirty, or filthy?
  - Are soap and water available near the latrine?
  - Does the soap look recently used?
  - How many children wash hands with soap after using the latrine? (all/most/some/a few/none)
- Observe the students before eating.
  - Are soap and water available near where students eat?
  - How many students wash hands with soap before eating? (all/most/some/a few/none)
- **Possible measurement of handwashing when you are not observing**: This method may work if the students are using a soapy bottle or tippy tap and if there are times the entire class should be washing hands (that is, before a meal or after a potty break): Without students noticing, observe the level of soapy water before and after the opportunity to wash hands. See how much the water level declines when you are observing handwashing (so everyone is washing). Then see how much the water level declines when you are not directly observing handwashing.
Prevention at home

- Are soap and water available near where students eat?
- How many do student wash hands with soap after using the latrine? (all/most/some/a few/ none)
- How many students wash hands with soap before eating? (all/most/some/a few/ none)

Resources on Handwashing

Comic books (free and online)

*** Meena: Health in Your Hands. The importance of hand washing to be healthy.
http://www.unicef.org/rosa/Rosa_meena-Health_in_your_hands.PDF
Ages 5-13
Meena is a great character. This comic book is educational, but not too much plot.

** The Germagician
Ages 7-14
A comic book with good art and an interesting concept. Western images and fairly preachy.
From Dettol's health campaign.

Online videos (free and online)

***** Great public service announcement on handwashing from Ghana
http://www.youtube.com/watch?v=wCvbwW1oEfQ
Ages: 5-adult  0:54;
You can watch with the sound off and just let students comment on what is happening.

*** Hand Washing for Kids Crawford the Cat
Ages 5-10 5:03
https://www.youtube.com/watch?v=yYzrcyFFTbQ
It does a good job teaching about washing hands and it’s sort of interesting. It says that germs are small, but not invisible, and his hands are visibly dirty.

**** All Washed Up!
https://www.youtube.com/watch?v=osUwukXSD0k
Fourteen-year-old scientist Hyrum Grenny cracks the code on how to get kids to wash their hands. Gives a lot of motives to wash hands and education why while still being fun.

*** Meena “Health in your hands”
Ages 5-13; 3:03
https://www.youtube.com/watch?v=2mGUCJ3kCHE
Meena is a great character. This cartoon is educational, but not too much plot.
** Computer game on household hygiene (free and online)**

**Germ Hunter flash game**
http://www.primarygames.com/science/germhunter/start.htm
- Do you know where the hygiene hotspots are in your home? The creeping, crawling army of germs is slowly taking over your house. Grab your trusty cloth and spray, hunt down your home's hygiene hotspots and eliminate your unwanted invaders
- Short. Mildly fun, and gives a little educational tip after each round

**E-bug**
This game starts slow, but gets more fun when you have to throw soap to “wash away” bad bacteria. It also has good washing hands tips. However, it asks questions in the game show part unrelated to the rest of the game.
Unit 2. **SAFE WATER**

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**Background**

Lack of safe water causes 100,000 to 500,000 deaths a year.\(^{21}\) It also causes tens of millions of illnesses that prevent children from growing as tall as they could and prevents children from learning as much in school as they could.\(^{22}\) Treating water with boiling, chlorine or a filter is effective at reducing these problems.\(^{23}\)

---


Objectives

- **Learning**: If you serve untreated drinking water you spread both serious diseases and disgusting poop to yourself and your neighbors.
- **Behavior**: Students treat water with boiling, chlorine or filtering and encourage others to do so.

**Preparation: Needs assessment**

- Where do people get their water from around here?

Consider interviewing some children:

1) At home we treat our drinking water
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never [skip to question 3]
2) If you treat water: How?
   - Boiling
   - Chlorine
   - Filter
   - Other: ___________________
3) At home we store water in a container
   - with a tap
   - with a narrow mouth
   - with a wide mouth
4) Water around here is safe to drink
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never
5) It is important to treat drinking water
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

Fill out a similar survey for school.

6) School has treated drinking water
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never [skip to question 10]
7) If you treat water: How?
   - Boiling
   - Chlorine
   - Filter
   - Other: ___________________
8) How often do students drink from the treated water (not untreated)?
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never
9) At school we store water in a container
   - with a tap
   - with a narrow mouth
   - with a wide mouth

- What are the barriers facing water treatment at home?
- What would make water treatment easier and more popular?
- Who has influence on the students regarding water treatment?
- Observe at school and at any home visits: Do people scoop water so that their hands touch the water?
- Whose help is needed to ensure there are supplies for water treatment? (Chlorine, a filter, etc.)?
- Is dilute liquid chlorine such as WaterGuard available around here? How much does it cost?
- If not chlorine available, remove references to chlorine treatment in lessons, games and stories. (OR: Find an NGO partner who can get a supply of dilute liquid chlorine?)
- What safe storage (with a tap) is available near here?
**Preparation: Hardware**

The materials below assume your school can access safe water. A nice introduction to water treatment and safe storage is SODIS, *Safe Water Schools Training Manual*.

---

**Reminder: You are the example**

Make sure you always use treated water both at home and school.

---

**Activity: What are the costs of illnesses?**

Objective: Make students aware of the high financial and long-term costs of routine illnesses such as diarrhea

Time: 15 minutes

Ages: 6-adult

What you need

- A place to write that students can read.
- Optional: Magazines with pictures of athletes, movie stars, etc.

Preparation: Do the math first.

Activity

We have been talking about washing hands so you do not spread germs in poop.

Why is avoiding poop and germs important?

- It is disgusting to eat poop.
- It is disgusting to serve poop to your friends and neighbors.
- It is not nice to serve germs to your friends and neighbors.
- You get sick if you do not avoid germs and poop.

Why is it a problem to be sick?

- Suffering or discomfort
- Out-of-pocket medical costs
- Lost earnings from patient and family members caring for the patient.

Tell a story and do a spreadsheet on the total cost of diarrheal diseases in this school.

- 5 illnesses a month
- Miss 2 days of school per month
- Parents stay home 1 day a month
- 10 months a year
- 100 students in this school

For example:
Is disease a problem around here?

At this school each year (for each 100 students, so adjust for your school’s size)
- Students suffer 10,000 days of illness = 15 years!
- Parents lose 1000 days of work = over 3 years of lost earnings!
- Students miss 2000 days of school = over 9 years of education!

Before you are 17
- You will miss several months of school!
  - That sounds fun, but you are spending that time with a fever or severe diarrhea – not the most enjoyable days!
- The average parent will spend $200xx on medical care and lost earnings!
  - What could your family do with $200?

Q: How much precision can we expect for diarrhea episodes per month and cost of treatment?

- Q: How much does it cost you in time and money for transport, care and drugs the last time you took a child to the doctor?
  - expected answer: $1-2 for doctor, $1-4 for antibiotics (OR spend hours in line for public clinic, which may lack drugs)
- The typical family with 3 kids will have more than seven doctor visits because the kids ate or drank poop!
  - Not counting the endless drug store trips
- Kids eating poop cost a typical family more than $10 a year – and that is if nobody gets real sick!
  - Do you know someone whose child was hospitalized? What happened? [They should be able to describe a week or more lost productivity as well perhaps of tragedy.]

Example from Bangladesh:
- More than one in ten kids 5 and under in Dhaka had diarrhea in the last 2 weeks. Of those, more than one in six went to see a doctor or nurse. Many others went just to a pharmacy, shop or traditional practitioner. So about half the kids go to the doctor each year just for diarrhea!  

Key words: Activity, Prevention, Diarrhea

---

Does disease matter?

There are also longer-term effects of having so much diarrhea and germs

Ask the class: What are your goals growing up?

Option: Have students find pictures of their ideals in magazines. They will presumably pick out athletes, movie stars, and rich people.

- Boys grow strong
  - But what if they have diarrhea and cannot digest food?
- Young men are handsome and attractive to girls
  - But what if they have poop on their hands?
- Girls are beautiful
  - But what if they have parasites and therefore are scrawny?
    - Do men want to marry wives who mix poop in with their dinner?
- People grow well educated and rich
  - But what if people are hungry and often ill and cannot study in school?
**Story: The Monkey Prince helps Mr. Peacock**

**Objective**
Reinforce that untreated drinking water can make you ill, while boiling or filtering can make water safe.

**Time:** 20 minutes

**What you need**
One copy of the story: *The Monkey Prince helps Mr. Peacock*

**Activity**
Students read story or teacher reads story to them.

*Option:* Because this lesson is largely about health, is it reasonable for teachers to read in both English and Swahili? If so, would you like me to get a Swahili translation?

For older children: Read the story in the local language or in English, as appropriate.

**Discussion**
Ask students:

- Why did the monkey prince get sick at the beginning?
- What could he have done to prevent getting sick?
- What will Mrs. Peacock do now that she no longer has the filter?

**Key words:** Story, Prevention, Diarrhea, Water, Filter, Boiling
**Demonstration: The Disgusting Box**

Objective: Make students aware and disgusted that poop seeps into leaky pipes.

Time: 15 minutes

Ages: 5-adult

**What you need**
- Box, perhaps lined with plastic bags so it does not leak
- Pipe perhaps 2-3 cm wide longer than the box
- Enough dirt to fill most of the box
- A liter or so of clear water
- A plastic poop or representation of poop
  - See recipes in the appendix.
- Tools to cut holes in the side of the box and to poke small holes in the pipe
- Three glasses

**Alternative:** Show the “Disgust box” video at [http://www.youtube.com/watch?v=pnEqlSbPz8&feature=youtu.be](http://www.youtube.com/watch?v=pnEqlSbPz8&feature=youtu.be), starting near 2:27.
- Here you see the “Disgust box.”
- Now we pour water in the pipe. See it come out on the right?
- [At 3:00 ask.] Does the water look clean? Is the water clean?
- [at 3:10 explain] She poured tea from above. Then she pours clear water through the pipe on the left. See it come out on the right. Why is the water coming out brown?
  - Answer: The tea entered the pipe through the holes.
  - [Pause at 3:30 if needed to finish this discussion.]
- [At 3:30 explain]: Now we put fake feces on the pipe. This water sprinkling down is like rain from the sky.
- [at 3:50] Now she puts clean water through the pipe on the left. It comes out on the right.
  - Does the water look clear? Is the water clean?

**Preparation**
- Cut the pipe to stick out of the box a few cm on each side.
- Cut holes in the box to stick the pipe through. The hole should be a bit higher on the left side and lower on the right. Seal the hole well so it does not leak.
- Poke a number of small holes on the side of the pipe that will face up when the pipe is buried in the dirt. The holes must be small, so dirt does not enter them.
- Place the pipe so it enters high on the left and exits low on the right of the box, with holes facing upwards.
- Fill the box with dirt so the pipe is covered.
- Option: Take pictures of pipes near poopy water, or identify such pipes you can bring the students to.
Note: It is important to practice this activity, as it does not always work the first time.

Activity

- Pour clear water into the pipe on your left. It should run out and exit on the right into glass #1.
  - Ask: What is going on?
    - Students should reply: The pipe goes under the dirt and carries the water.

- Now say, “This water represents rain,” and pour water onto the dirt.
  - The water should seep through the dirt and exit out the pipe on your right into glass #2.
  - Ask: What is going on?
  - Students should reply: The water goes under the dirt. There must be leaks in the pipe that let the water in.

(Water on surface drawn in orange to highlight its route.)

- Put a realistic fake poop on top of the dirt. Now say, “This water represents rain,” and pour clear water over the plastic poop. The water should seep through the dirt and exit clear out the pipe on your right. Catch the water in glass #3.
  - Ask: What is going on?
  - Students should reply: The runs off the poop and the dirt. It goes into the holes in the pipe, and the pipe carries the water out.
  - Ask: This water is clear. Would you like to drink this water?
    - Students should be disgusted, as the water touched the plastic poop.
Discussion

Ask:

- What happened?
- How does poop get into piped water around here?
- How do you feel about drinking untreated water from pipes around here?
- Is it safe to drink untreated water from pipes around here?
- If you want to drink this water, how do you make it safe?
- Option: Show pictures of pipes near poopy water, or walk students over to such pipes.
  o Explain: The contamination is visible in this case, very often, even poop is not visible after mixing with water.

Key words: Demonstration, Prevention, Diarrhea, Germs, Water

Appendix: making fake poop 25

Get a toilet paper roll and put it in the sink. Soak it in water until it becomes dark brown and slightly soft.

Rip the toilet paper roll into tiny pieces about as big as half your thumb.

Mold them with water so the result looks like poop.

25 http://www.wikihow.com/Make-Fake-Poop-for-a-Prank
Video demonstration

You can see a video version of this demonstration at http://www.youtube.com/watch?v=pnEqblSbzq8 starting around 2 minutes and 20 seconds in.
Activity: How germs get in the water

Objective: Students discuss the many ways germs and poop get into drinking water.

Time: 5 minutes

Ages: 7 and up

What you need

- A picture showing how poop gets into drinking water around here.

CAWST has a series of pictures for different regions. http://resources.cawst.org/package-type/poster-package. They require a free registration.

Activity

Hold up picture showing

- Open defecation near a river
• Toddlers playing naked in a river
• Cows grazing near the river
• A latrine with a leaky tank near the river
• Someone with unwashed hands dipping hands into a water jar to get a cup to drink
• Sewage seeping underground and into a leaky pipe
• Rain washing open defecation into a pond or river
• Etc.

Discussion
Ask students how poop gets in the drinking water.
Demonstration: Safe storage

Objective: Students will understand hands scooping water leave behind poop and germs, and will feel disgusted as that idea. Students will value safe storage.

What you need:
- Food coloring or a strong dye (fruit juice, etc.)
- A standard wide-mouth storage container
- A scoop
- A safe water container

Time: 5 minutes

Ages: 7 and up

Activity
- Put dye or other color on a hand.
- Scoop up water from a typical water container using a standard scoop.
- Show how the dye stayed in the water.

Discussion
- Ask students what would happen if they dye had, instead, been invisible poop and germs.

Activity
- Compare with safe storage that includes a tap.
- Ask: What is better? Why?

Store treated water in containers that make it hard to scoop with dirty hands:
- A small opening with a lid or cover that discourages users from placing potentially contaminated items, such as hands, cups, or ladles, into the stored water;
- A spigot or small opening to allow easy and safe access to the water without requiring the insertion of hands or objects into the container; and,
- A size appropriate for the household water treatment method, with permanently attached instructions for using the treatment method and for cleaning the container.

<<Add: Pictures of scooping with local container>>
Pictures from CDC, “The Safe Water System: Safe Storage of Drinking Water”
Card game: Water, Water, Water

Objective: Compete to make a row of three ways water gets dirty, or 3 ways to make water safe.

Ages: 7-adult

Time: 10 minutes

What you need: Water, Water, Water uses the same rules and board as Soap or Sorry, but uses different cards.
**Outdoor game: Race to Safe Water Relay**

Objective: Show how filtering, boiling or chlorine can remove germs from water.

Time: 20 minutes

What you need:
- 12 or more students and room to run
- If the lesson is chlorine: One hat per team. (See appendix for making a hat out of paper.)

Preparation: Select treatment = Filter, Boil, or Chlorine & Source = pipe, pond, etc.

Activity

In this game Runners try to bring all the Waters home, but only when the Waters are safe. Runners grab Water that have Germs attached and take them to [Filter, Boil or Chlorine]. The Runner then takes the now-safe Water home and the next Runner goes to get the next Water.

- Divide the students into 2 or more teams of roughly equal number and speed.
- Label the area by the school “Home” area and a pipe, pond, etc. (whatever’s closest) “Source” area
- Each team divides into 2 even lines:
  - Each team should have two Germs and one Treatment (Filter, Fire to Boil, or Chlorine bottle). (Chlorine wears a little bottle cap; that is, paper hat). The rest of the team are evenly split between Runners and Waters.
    - Runners line up at the Home area.
    - Water, line up 10-20 meters distant in the Source area (pipe, pond, etc.)
    - Whenever a Germ is in the Source line, she holds hands with the Water furthest in front who does not already have a Germ attached (until there are no more Source Waters without a Germ).
      - If teaching about the Filter: Germs have to keep their arms straight and horizontal (like a “T”) at all times.
- The first Runner runs to her first Water, who is holding hands with the germ, and grabs them. The 3 run together to the Filter, Chlorine or Boil team member.
- The Germ and Water then have to undertake a silly activity representing water treatment:
  - **If filter**: Water crawls between the legs of the Filter. The Germ does not fit with her arms outstretched, so must let go of the water and run back to the Source to grab hands with the next Water (if any are left without a germ).
  - **If boil**: The player who is Fire has to run 3 times around the Water yelling “Hot, Hot, HOT!” to make the Germ let go. (If the Water forgets to yell “Hot…” the germ can stay.)
  - **If chlorine**: The Runner has to remove the hat (“bottle cap”) from the Chlorine and act out pouring one capful of chlorine onto Water. The cap of chlorine makes the Germ run away yelling “Ouch, Ouch!” (If the Germ forgets to yell, “Ouch…” she has to return and the Runner has to do the Chlorine treatment again.)
• The Runner then runs holding hands with the now-safe Water back Home and tags the next Runner in line. The next Runner runs to the Source, grabs a Water (who is holding hands with a Germ), and the process completes until all the Waters are home.
• The first team to bring all the Waters home wins.

Discussion
• Why is important to treat drinking water with filter / boiling / chlorine?

Key words: Outdoor game, Prevention, Diarrhea, Water, Boil, Chlorine, Filter
Appendix: Making a Paper Hat\textsuperscript{26}

Objective: Make one hat per team if teaching chlorine in Race to Safe Water Relay

What you need:
- for small hat: A4 paper
- for child-sized hat: 1/2 sheet of newspaper
- OPTIONAL: scotch tape

Activity

- Fold the paper (or the 1/2 sheet of newspaper) in half
- Fold down each side to make triangles
- Fold one bottom of the two bottom layers up.
- Flip the hat over and fold the other bottom flap up.
- Add a bit of tape if you like

**Outdoor game: Safe Water Relay Race (realistic)**

**Objective:** In this relay race players act out water treatment using real water treatment supplies.

**What you need**

**Shared:**
- One filter (If available)
- One chlorine bottle (can be filled with water)
- One pot
- Optional: one unlit fireplace or stove

**For each team:**
- One water source (could be a bucket + scoop, or faucet)
- One water carrying container (for example, a jerry can or bucket)
- One cup

**Preparation**
- Fill up the buckets (or water source) with water.
- Place the water treatment supplies an appropriate distance from the water sources.
- Divide the players into 3 groups. Make 3 lines of players an appropriate distance from the water sources and water treatment supplies.

**How to play**

A player from team 1 runs to the water source and gathers water.
- Then pours the water into the water filter
- Then jumps 20 times to represent “Wait 20 minutes.”
- Then pours water into a cup, pretends to drink.
- The player runs back to line and tags the next player.

A player from team 2 runs to the water source and gathers water.
- Then grabs a bottle of dilute chlorine, measures out a capful, and pours it into the water
- Then jumps 20 times to represent “Wait 20 minutes.”
- Then pours water into a cup, pretends to drink.
- The player runs back to line and tags the next player.

A player from team 3 runs to the water source and gathers water.
- Then pours the water into a pot over an unlit stove or fireplace.
  - Option: Just have the pot, and imply a stove or fire beneath it.
- Then jumps 2 times to represent “Boil for 2 minutes.”
- Then pours water into a cup and pretends to drink.
- The player runs back to line and tags the next player.
Unless there are enough water treatment supplies for each team: Teams rotate through the products. That is, the next player from team 1 uses the chlorine, the next player from team 2 boils, and the next player from team 3 uses the filter.

**Variations:** The game can be played with one player doing 100% of one safe water procedure (gathering, treating, and using). For large teams, those tasks can be shared among two or three players.
Reminder & habits: Chart safe behaviors

Objective: Students track their safe behaviors to improve feedback and habit of handwashing, water treatment, etc.

Time: 20 minutes + 2 minutes per day to update

What you need
- Make each child a blank calendar.
  - You can download an editable calendar for a specific month at http://www.wincalendar.com/word-calendar-templates.htm
- The top can be a picture for the students to draw. Especially at younger ages, you can provide an outline that they color in.
- Drawing supplies

Activity

Day 1: Starting
- Keep the calendar at school so it will not get lost
  - Hand out and collect every few days. More specific: hand out every Monday and collect every Wednesday
- Pick one safe behavior and have students track it for 1-4 weeks.
  - Pick only behaviors where they have the means.
    - Be sure no child is too poor to participate
  - Perhaps let students pick what to track from a list you provide.
- Behaviors might include:
  - Brush teeth
  - Safe water
  - Wash hands
  - etc.
  - Option: If students are unaware that germs are all around them: Ask them to list 5 sources from where they could have picked up germs each day, on the calendar.

  - Hint: Success is more likely if kids have already made some progress towards the goal. Thus, give everyone a "star"

Days 2-20: Sustaining
- Then have students track their progress by marking their calendar in a fashion you determine.
  - For example, an X for each day
  - Or B for Brush teeth, S for safe water, etc.

Day 21: Expanding
- Then a few weeks later pick a new behavior
  - Add to or replace the first behavior.
- Continue adding or replacing behaviors
Variation: You can design several challenges:

- Eat 3 servings of vegetables
- Wash hands 5 times tomorrow
- Etc.

Then students can choose the challenges they want to sign up for. They get certificates for each successful challenge.

After a week, let students propose the challenges. Those that are appropriate go on the list.

**Integrate family with safe water topics**

**Outreach: Practice explaining about safe water**

Objective: Have students practice explaining to a younger sibling why it is important to drink only treated drinking water (after chlorine, filter, or boiling).

Time: 10 minutes

Ages: 7 and up

Activity

Have students practice explaining to a younger sibling why it is important to drink only treated drinking water (after chlorine, filter, or boiling).

Have students give feedback to each other to make sure the basic lessons are covered:

- Water around here gets poop and germs in it.
- The poop is disgusting and the germs can make you sick.
- Thus, you need to drink only treated drinking water (after chlorine, filter, or boiling).

**Assessment: Household survey and parental signature**

Objective: Students bring a brief assessment home to spark a discussion of safe water topics with their parents and family

What you need: Short assessments for each child to bring home

Activity

- Students bring an assessment home for safe water topics
- Parents sign off on assessment and the child returns the assessment

Ages: Literate students (or parents)

Time: 5 minutes in class to distribute and 5 minutes to collect (or 20 minutes, with discussion).
Dear parent:

We would like your child to circle an answer to each question.

Please put your name or mark to show your child has talked about their answers with you.

Student’s name ____________________

1) At home the student drinks water that has been boiled, filtered, or chlorinated:
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

2) Has your child explained to his or her younger siblings why it is important to drink water only after boiling, chlorine or filtering?
   - Yes
   - No
   - There are no younger family members

<<Note: If the student did a poster, add:>>

3) The student shared the poster with the family and discussed its message.
   - Yes
   - No

Parent’s signature or mark ____________________

Option: Should we have a more open-ended question such as “What are obstacles to water treatment at your home?” The student won’t write down many of the replies, but such questions probably spark better discussions.

Discussion

• Ask how did you parents treat the assessment?
  - What did you have a chance to explain from what you have learned?
  - Do parents have more interest in the soapy bottle?

• How did it go teaching younger family members?

Reminder: Reinforce the habit of safe water
See “Reinforce habits…” in handwashing section.

Apply the principles of creating small new habits to covering your safe water. First pick a cue and a habit such as:

• When you go to drink, drink from safe water container
• See the water filter is empty, refill the water filter,
• See someone drinking unsafe water, remind them to drink safe water

Each time you perform the habit, reward yourself with a moment of celebration.
• Say a quick phrase ("Great job!") or sing a little song
• Do a gesture of congratulations (fist pump, arms in air) or a little victory dance
• Imagine praise or the roar of the crowd excited by your victory!

**Arts activity: Skits**

Objectives: Students act out challenges, find solutions, and practice reminders regarding safe water in a nonthreatening and fun environment

Activity
Review the instructions in the [Handwashing unit](#).

As always, you can ask students to make up their own skits. In addition, here are some possible scenarios regarding water treatment. Note: Specify the relevant forms of water treatment (boiling, filter, chlorine, etc.) for this setting.

1) An older male relative does not understand why it is important to treat water, as long as the water *look* clean. The younger children in the family keep getting sick, but everyone is afraid to correct the older relative.

2) Anna is engaged to marry Joseph. Anna’s parents invite Joseph’s parents over to discuss the wedding with. Joseph’s parents see that Anna does not treat water before serving them. They are thinking of calling off the wedding.

3) Some actors play germs riding on poop floating down a river
   a. Act out how they feel when people gather water and do or do not filter, boil or use chlorine.
   b. What happens when chlorine arrives? Or the water is filtered?
      i. Chlorine can be other actors.
      ii. Filter can be water crawling under someone’s legs, but germs (holding or a long stick the water-actors hold) do not fit.

4) Children in a community keep getting diarrhea. When they are all healthy, for a moment, they get together and try to solve the mystery of why.

5) A new family moves to a neighborhood or a new kid moves to a school. The new people do not know to boil, chlorinate or filter drinking water. People refuse to eat with them. Then someone helpful points out the problem, and the new people or student have more friends.

6) You see a friend drinking untreated drinking water.

7) Some of the older kids make fun of a younger kid for being a teachers’ pet because he only drinks treated drinking water.
## Quiz

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What can be used to get poop and germs out of water?</td>
<td>Safe containers</td>
</tr>
<tr>
<td>Name 2 ways to make drinking water safe</td>
<td>2 of: Boil, filter, chlorine, solar disinfection</td>
</tr>
<tr>
<td>How can you help your community be safe?</td>
<td>Use safe latrines and encourage others to use safe latrines.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>True of false</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most untreated water around here has poop and germs in it.</td>
</tr>
<tr>
<td>Untreated water that looks and smells clean has no poop or germs.</td>
</tr>
<tr>
<td>When a neighbor serves untreated water, my family is less safe.</td>
</tr>
<tr>
<td>Poop and germs travel into water, onto flies and through dirt.</td>
</tr>
<tr>
<td>Using latrines prevents spread of diarrhea and worms.</td>
</tr>
<tr>
<td>How often should you treat drinking water?</td>
</tr>
</tbody>
</table>
**Quiz Game: Interactive World Scramble Game**

Objective: Students should be able to unscramble the missing word that completes the health sentence.

Time: 15 minutes

What you need:
- Paper to create worksheet

Preparation:
- Create a worksheet with the following six sentences about safe water:
  - You _______ water to make it safe
    - Answer: treat
  - You can treat drinking water by boiling, filter, or _______.
    - Answer: chlorine
  - To avoid spreading worms, poop should go in a _______.
    - Answer: latrine OR toilet
  - Safe _________ for water keep out poop and germs
    - Answer: containers
  - _________ water has germs and poop.
    - Answer: untreated
  - Untreated water can look clean even if it has poop and _________.
    - Answer: germs
**Resources on Safe water**

**Resources (free and online)**

**Healthy Water, Healthy Habits, Healthy People Activity book download**  
project WET  
You have to register (for free) to download.

**** Their *Educators Guide on Water, Health, Sanitation and Disease Prevention* is at  
This is a full curriculum. It incorporates many of the games in the existing curriculum, but also utilizes the advantages of a classroom setting.

**Videos (free and online)**

**Meena’s Three Wishes**  
Ages 5-13, 18:40  
[https://www.youtube.com/watch?v=iulgE0jEJNc](https://www.youtube.com/watch?v=iulgE0jEJNc)  
Meena dreams of a magic genie that will grant her three wishes so that everyone would be healthy and never again get sick from poor sanitation and unsafe water. When Meena wakes up she realizes that she must make her dream come true. With the help of her brother Raju, other children in the village, and Mithu, her pet parrot, Meena convinces people to build and use latrines, to use safe water and to wash their hands to stop the spread of germs and disease. A bit long, but good plot and teaches the invisibility of germs.

**NGOs with great safe water curriculum (free and online)**

**The Center for Affordable Water and Sanitation Technology (CAWST)**  
They cover all aspects of safe water. They are also the world leader on the biosand filter. You need a free account to download.

**SODIS safe water schools**  
***** SODIS has a book worth of material for safe water schools, see [http://www.sodis.ch/safewaterschool/index_EN](http://www.sodis.ch/safewaterschool/index_EN)  
Their manual goes over much of the material in chapters 1-3 of this curriculum. It includes introductory material on building latrines.  
Unit 3. SANITATION

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Background
Outdoor defecation sanitation causes over 200,000 deaths a year.\textsuperscript{27} It also causes tens of millions of illnesses that prevent children from growing as tall as they could and prevents children from learning as much in school as they could.\textsuperscript{28} Deworming can be highly effective in both improving health and learning.\textsuperscript{29} ORS (oral rehydration) is highly effective at curing diarrhea and avoiding dehydration.\textsuperscript{30}

Objective for Sanitation Unit

- **Learning** If you poop outdoors or walk barefoot you spread both serious diseases and disgusting poop to yourself and your neighbors. ORS can cure diarrhea and deworming can cure intestinal worms.
- **Behavior**: Students use a safe toilet or latrine, make ORS, and engage in deworming. Students also encourage others to do so.

**Preparation: Needs Assessment**

See assessment in Safe Water [Preparation: Needs assessment](#).

Ask students

1) My family has access to a safe toilet or latrine
   - Our own
   - Shared
   - None

2) My family uses a safe toilet or latrine
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

3) Near where I live, people poop outdoors
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

4) Near where I live, there are lots of flies
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly disagree

Fill out a similar survey for school.

5) Students at school have access to a safe toilet or latrine
   - Yes
   - No [skip to question 10]

6) The latrine or toilet is clean
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never [if always clean, skip to question 8]

7) Whose job is it to keep the latrine clean? What are barriers to them doing their job regularly? Whose help is needed to keep the latrine clean?

8) Students use the safe toilet or latrine
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never [if Always use, skip to question 13]

9) What are barriers to using the safe toilet or latrine?
10) What would make safe sanitation easier, more comfortable or fun, and more popular?
11) Whose help is needed to ensure there is a safe toilet or latrine?
12) Who has influence on the students regarding safe sanitation? If relevant, answer separately for boys and for girls.
13) There is open defecation near the school
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never
14) There are lots of flies near the school
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly disagree

15) How can students access low-cost deworming?
   - [If no students have menstrual periods, you are done.]

16) Do girls have an appropriate place to change and dispose of menstrual supplies?
17) Is there evidence that girls miss school during their periods? 

- Often
- Sometimes
- Rarely
- Never
- Don’t know

**Preparation: Hardware**

If the students do not have access to safe latrines at school, you will need to build one. There are many sources, such as SODIS, *Safe Water Schools Training Manual*, section 3.4.

If most students do not have access to safe latrines at home, you will need to adjust the lessons. It will be important to engage much of the community. See sources on community-led total sanitation for suggestions.  

---


Reminder: You are the example
Make sure you always use a safe toilet or latrine, both at home and school.

Demonstration: There is a lot of poop around here!

Objective: Show the children the importance of safe disposal of feces by calculating the amount of feces produced in school in one month.

Time: 10 minutes

Ages: All

Preparation:
- Calculate 1 defecation of 100 g of feces per day x number of people in school x 365 days.
  - So each 100 people = 100g / day * 100 people * 365 days = 3.6 tons of poop a year.
  - Each person produces about a wheelbarrow full of poop in a year.
  - So # of people in the school = how big a parade of wheelbarrows that would be – just from this school!

Activity

Ask:
- How much poop is there in our village / school / community?

- Each day people just poop a little, about 100 grams [a small cupful] for example. But when we take all the days in the year, that comes to about one wheelbarrow full of poop in a year!

Illustration: Wheelbarrow with feces
• So for all the ____ people in our village, that would be a parade of wheelbarrows about _____ [same # as population] people long! There would be nobody to watch the parade, the whole village / school would be in the parade, pushing our wheelbarrow full of poop!

OR: Imagine all that poop in this classroom! It would be quite a pile!

• Our village must have the most poop in the district! Let’s give ourselves some applause!

• Where does all that poop go?
**Map the Open Defecation**

Objective: Show vividly that poop is everywhere in this village.

Ages: 8 and above (some can be younger)

Number of participants: 5 to 50

Time: 25 minutes

What you need
- A fairly large flat area, preferably without much grass, dust, etc.
- Cards for each kid to write their name on
- Yellow powder or something else to represent poop

Activity
- Ask villagers to come and stand around a large open space (preferably the space should be clean and dry with no rubbles, stones or grass)
- Few volunteers are invited to draw a quick outline boundary to represent a village using sticks, branches, coloured powder etc. It might be 6 or 8 meters on a side.
  - Ask someone to draw only a couple of important landmarks (such as school, main road crossing, places of worship, etc. inside the boundary)
- Now ask someone to step inside the village map and indicate the place where they were all standing (today’s gathering)
- Identify a young boy or girl and ask him or her to step in and indicate his or her house in the village map.
  - Ask the gathering if he/she did it correctly. If correct, ask everyone to give him/her a thunderous clap.

These help steps everyone to get orientated with the map. Next, explain the following to everyone:
- **Only one member from each family should pick up a card (heaps of card should be kept outside the map) and walk inside the map and stand exactly on the spot where his/her house is located.**
  - Allow some time for the people to settle down on the map properly
- **Write down the name of the head of the family on your card and place it on the location of your house. That is, put the card near your feet where you are standing.**
- **These cards represent your homes. Now draw a line from your home to the place where your family goes to defecate. Use chalk to draw lines on the ground or use a stick to dig a little path connecting your home to the open defecation places.**

---


See more on school-led total sanitation at:
At this point there will be lots of laughter and fun.
Remember you should not hand out cards or chalks one by one to the community. Keep these materials in a corner of the map and ask them to go and collect it. Encourage a lot of movement and fun creativity.

- Indicating the plastic or paper bag containing the yellow powder: *Pick up and use the yellow powder to show the places of open defecation indicating their poop. Spread more yellow powder where there is more poop and less vice versa.*
  - There will be much more laughter at this stage. Remember not to bring the bag of yellow powder from person to person. Let them do it all. You will notice a big rush to pick up a handful of the yellow powder. At this point children will pour yellow powder in places henceforth unknown to many parents.
  - Allow time for this to be completed

- **Now come back and stand on your home’s positions again. Where do you go for emergency defecation? Meaning during rains, in the middle of the night, at times of severe diarrhea or when sick and so on.** Pick up yellow powder and put some on these spots of emergency defecation.
  - You will find another round of laughter and people additional heaps of yellow powder around their homestead. People might say that during emergency they go behind the house of their neighbor and similarly his neighbor comes to shit behind his kitchen garden. Everyone will notice that the map is gradually turning yellow.

- **Wow, is your entire village full of poop?**
- You can also do the calculation of poop by households on the same map and identify the family that contributes maximum amount of poop to the village environment everyday.
  - Ask everyone to give a big clap to congratulate him/her.
- Ask them to step outside the map without disturbing the cards. Thus a household map is created.
**Simulation: Poop and flies**

Objectives: Vividly demonstrate how flies spread poop.

Age: 5-adult

Time: 10 minutes

What you need
- Something to represent a fly glued to the end of a stick
  - Could be a pebble or raisin or a model fly as in the appendix.
- Something sticky to represent poop such as goopy mud, peanut butter darkened with a little soy sauce, or glitter
- A bowl or plate of light-colored food
  - such as a spoonful of white rice, mashed white potatoes, white yogurt,
  - or something light-colored like paper or cloth that represents food
- See appendix for possible pictures.

Preparation
- Put a pile of the simulated poop (roughly the dimensions of a human turd) in front of you and to your right by about 20 cm.
- Put a plate of light-colored food or simulated food in front of you and to your left by about 20 cm.

Activity
- Hold up symbol of fly. “This represents a fly.” (Have the “fly” buzz around.)
- Ask: “What do flies like to eat?”
- When they say: “Poop!”
  - “This pile will represent poop.” [Pull out the mud plate and put it in front of you to your right, and have the fly land in the mud enough to get dirty.]
- Ask: “What else do flies like to eat?”
- When they say: “Food” point to the plate in front of you to your left.
  - “This plate holds food.”
- Ask: “Do flies stay in one place? What do they do?”
- When they say: “Land and then take off and fly somewhere new and land again”
  - Show the fly moving from one pile to another.
    - OR have a kid land the fly in the poop/mud pile and then fly it to the food pile
  - Some of the mud should stick to the fly and then stick to the food.

Discussion
Ask:
- “What happened?

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33 Or stick with the CLTS original version: Gather open defecation and put in front of you on the left. Put a plate of food in front of you on the right. Wait for flies to gather and for the audience to notice that flies go from poop to food.
• “What do you think about that?”
• “How does open defecation affect food around here?”
• Fact you might mention: A single fly can carry one million germs!

Key words: Demonstration, Prevention, Diarrhea, Germs, Latrines
Appendix: Pictures for simulation \(^{34}\)

Activity: Reducing flies

Flies love anything with moisture and nutrition, including poop, garbage, and rotting fruit.

Organize a team to implement these activities at your school.

1. **Flies love poop:** Clean up toddler poop and animal poop right away. You can either bury poop or scoop it into a plastic bag that you can tie closed or dump it in a latrine or toilet.
2. **Flies love kitchen scraps:** Dispose of kitchen scraps waste properly. First, drain any moisture. Then put it in a tied plastic bag or a garbage can with a tight-fighting lid.
3. **Flies love garbage:** Tie garbage bags tightly and keep lids tightly closed on garbage cans. Make sure garbage bags or garbage cans have no holes. Scrub garbage cans now and then to remove food residue.
4. **Flies love rotting fruit:** If you have fruit trees in your yard, pick up any fruit that falls on the ground.

How can you help your family carry out these activities at home?

Outdoor game & simulation: Poop and flies

Objectives: Vividly demonstrate how flies spread outdoor poop, but latrines can prevent it.

Time: 20 minutes

Ages: All

Number of players: 5-40

What you need

- Something that represents poop such as a set of rocks or pieces of paper
- A covered box large enough that the poop symbols can fit underneath it.
  - Optional: a trowel for handing the poop symbols

Preparation

Use chalk on pavement or a stick on dirt to divide up the play area into a small poop area, small plate area, and large Defender area. The Defender area is larger than any kid can defend if multiple other students run across it.

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35 Adapted from Debbie Hadley. “How to Control Flies in Your Home and Yard.”
Activity
Ask students what flies like. Have them mention both human food and human poop. Tell them this game shows how best to stop flies from carrying poop onto food.

- One kid is the Defender and must stay in the Defender area.
- The Defender starts with six points. The Flies’ team gets a point each time a fly drops off poop on the plate.
- Everyone else is a fly for this round.
  - Flies’ job is to go to the poop area, get poop on their “front legs” (that is, in their hands) and then run through the defender area and drop their load on the Plate.
  - Important rule: The flies can only use their hands to pick up poop symbols
    - Option: Sticky loops of tape on brown paper represent the “poop”. Flies run from poop to the food plate and drop off the poop.
- If the Defender tags a fly, the fly is “swatted.” It must run to the poop area, be reborn, and try again.
- A round lasts 3 minutes (or however long ensures the flies will win more than 6 points).

Round 1: The Defender is a very fast kid.
(He or she will still lose, as the flies just keep coming.)

Round 2: The Defender is a slow kid.
Everyone expects he or she will lose. Point out the box to the Defender and remind the Defender flies cannot use their hands for anything except picking up poop. The Defender will “cover the poop” and the flies will lose!
- Optional: The box starts face down. When the teacher turns it over it reads “Latrine” on the lid. The Defender puts the poop under the “Latrine” covered box, and the flies cannot get to it.

Discussion
Ask:
- “What happened?”
- “What do you think about that?”
- “How does pooping in the open affect food around here? How does using a latrine affect food around here?”

Key words: Demonstration, Prevention, Diarrhea, Latrines, Flies
**Board Game: Germ Race**

**Objectives:**
- Students understand that germs spread along with poop via fingers, feces, flies, fluids, and food.
- Students understand germs and poop are stopped by: hands washed with soap, use of a safe latrine, boil, chlorine or filter water.
- Students feel disgusted at hands not washed with soap and at untreated drinking water.

**Ages:** 8-13. (For younger students, teachers can read the game board as students play.)

**Time:** 30 minutes

**What you need**
- One printed board and one die per group of up to 4 children.
- One token per child (e.g., colored poker chip different from the rest of her group.

**Activity**

For 2-4 players or teams. Teams can be 1-3 players.

Note: If possible, children should be allowed to play this game during breaks or before or after school.

Make sure players read each square, at least the first time they land on it.

**Discussion**

**Ask students**
- For each drawing: “What is happening in this drawing?
  - Goal: The students explain the germs ride on poop
- “What makes the germs happy?”
  - Goal: The students mention rinsing hands without using soap leaves the poop and germs on the hands.
- “What stops the poop?”
  - Goal: The students explain handwashing with soap, using safe latrines, and effective water treatment.
- “How would you feel if someone rinsed their hands without soap, and then served you food?
  - Goal: Students explain hands not washed with soap are disgusting because they often have poop and germs.
- “How do you feel about drinking untreated drinking water?”
  - Goal: Students explain untreated drinking water is disgusting because it has poop and germs in it.

**Key words:** Board Game, Prevention, Diarrhea, Water, Handwashing, Latrine, Soap, Boiling, Chlorine, Filter, Flies
**Gerry the Germ**

Objectives:
- Students understand germs and poop are stopped by: hands washed with soap, use of a safe latrine, boil, chlorine or filter water.
- Students feel disgusted at hands not washed with soap and at untreated drinking water.

Ages: 5-7 (teacher reads aloud) or 8-15 to read

Time: 30 minutes

What you need
- One book or screen per group

Activity
Read the story *Gerry the Germ.*
Before reading, identify opportunities for questions. Possibilities include:

- Brother #1 (Adam):
  - How did Gerry the Germ get to Adam?
    - Someone pooped outdoors. Rain carried poop and the germ to the river. Adam drank untreated water.
  - Do you know people who defecate outdoors around here?
  - Does the rain carry that poop into a river or pond?
  - Do you know people who drink untreated water from that river or pond?

- Brother #2 (Bernie)
  - How did Bernie avoid germs in water?
    - Added chlorine to the water
  - How did the germ get to Bernie?
    - Bernie pooped and had germs on his hands.
  - Do you know people around here who forget to wash with soap after pooping?

- Brother #3 (Charlie)
  - How did Charlie avoid germs in water?
    - Boil.
  - How did Charlie avoid germs on his hands
    - Washed hands with soap.
  - How did the germ get to Charlie?
    - A fly landed on outdoor poop and then on food.
  - Are there ever flies near poop around here?
  - Are there ever flies near food around here?

- Brother #4 (Don)
  - How did Charlie avoid germs in water?
    - Filter
  - How did Charlie avoid germs on his hands
    - Washed hands with soap.
  - How did Charlie stop flies from carrying poop and germs?
    - Built safe latrines so the flies could not get to the poop
Making: Make Your Own Fly Trap

Objective: Make a simple fly trap using material that would be garbage such as empty soda and drinking water bottles.

Time required: 30 minutes

Ages: 8-adult

Materials required

- Two clear plastic bottles; preferably identical. The larger the better. They can be smooth or corrugated. One bottle should still have its screw top.
- One smaller smooth plastic plastic bottle.
- A large spoonful (15 g) of black or dark paint.

Tools

- A sharp knife.
- A small piece of string.
- A pencil or other pointed instrument to make a small hole in the plastic bottle.
- A candle.

Method of assembly

One of the large bottles is the "bait bottle" and the other is the "trap bottle." The smaller bottle is used to cut out the "trap tube."

The Bait bottle (bottom)

If the paint is very thick then dilute it. Pour the equivalent of a large spoon (15 g) of paint into one of the large bottles. If possible do not let the paint run down the side. Roll the bottle so that the lower third is painted on the inside. Leave it to dry.

The Trap bottle (top)

Cut the bottom out of the other large bottle. Make the cut just below where the bottle tapers into the base. Now make 8 slits upwards from where you cut off the base. If the

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36 By David Morley. Downloaded and adapted from: http://www.talck.org/accessories/talck-fly-trap.htm. TALC (Teaching-aids At Low Cost) distributes low-cost books, equipment for weighing and measuring children and other teaching material. Tel: +44 (0) 1727 853869 in+f@talck.org www.talck.org
lower end of the bottle is corrugated, make the slits in the "valleys". Push the Trap bottle over the top of the Bait bottle and make a tight fit.

If the splits in the side tear further, you can glue small squares of plastic. Alternatively, cut a ring of plastic from another bottle of the same size. Slip this ring over the Trap bottle to prevent the cuts spreading upwards.

If you want to hang the flytrap, place a small piece of string under the screw top and screw the top on tightly.

The Trap Tube

The Trap Tube is a piece of plastic cut from the body of the smaller bottle. Cut a piece of bottle 8 cm. by 8 cm. Cut small slits in the bottom and bend these out as shown in the diagram. Now roll it around a pencil, tie it on with a piece of string, and place it in hot water (three-quarters boiling and one-quarter cold.) When you remove the string, it should keep its shape.

Make a hole in the screw top by holding it over a candle until the plastic darkens and softens. Push a pencil through and enlarge the hole. Push your tube up and through this hole and the “frill” you cut should now be pinched between the bottle top and the cap when it is screwed on to the bait bottle.

The Bait bottle

The paint in the Bait bottle should now be dry. Cut two half circles 2-3 cm wide halfway down the painted part at opposite sides of the bottle. The curve of the circle should be upwards. Pull the semi-circles you cut outwards and force them down so that they remain open. These are the entry ports for the flies.

Put some bait in the bottom of the Bait bottle and put some on these turned-down flaps to attract the flies.

The Fly Bait

Various baits work. Chicken entrails work well, but tend to dry up. Amongst the Masai a mixture of goat dung and cows urine is effective.

Put the trap where you see the most flies.

(This design is preliminary. Further simplification and improvement depend on field trials. It would be good to hear of alternative baits as well.)
**Activity: Three pile sorting**

Objectives: Students learn which handwashing, water, and sanitation behaviors are safer and which are more dangerous. Students demonstrate this knowledge.

Ages: 7 and up

Time: 25 minutes

What you need:
- One set of printed cards showing handwashing, water, and sanitation behaviors for each group.

Activity

See: C:\Users\David\Documents\My Dropbox\Development & Art\Games\References\Three Pile Sorting_South Asia_All With Instructions_2009-09_en.pdf

NOTE: This link is not useful for posted curriculum. Need to cite CAWST site and give instructions for a download. xx
Class participation story on boiling

Objective: Students learn that water from the pump can make you sick, while boiling makes water safe.

Time: 10 minutes

Ages: 5-9 years old

What you need: You can write the special words & sounds on the board or hold up pieces of paper showing each special word and what to do.

Activity

Explain:

When you hear each special word in the story, make these sounds and movements.

<table>
<thead>
<tr>
<th>Word in story</th>
<th>Sound to make</th>
<th>Movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td>Glub Glub or SSSSSSSS</td>
<td>Fingers make pouring downward motion with fingers of each hand pointed towards each other and wiggling</td>
</tr>
<tr>
<td>GERM</td>
<td>Heh heh (evil laugh)</td>
<td>Look slyly left and right</td>
</tr>
<tr>
<td>UNHAPPY</td>
<td>Ohh oh</td>
<td>Sad face &amp; hold tummy</td>
</tr>
<tr>
<td>BOIL</td>
<td>b-b-b-b-b-b (sound of boiling – kind of)</td>
<td>Fingers dance up and down like bubbles on boiling water</td>
</tr>
<tr>
<td>HAPPY</td>
<td>YAY!!</td>
<td>Pump fists in the air</td>
</tr>
<tr>
<td>Word</td>
<td>Picture</td>
<td>Sound</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>------------------------</td>
</tr>
<tr>
<td>WATER</td>
<td><img src="image" alt="Water" /></td>
<td>Glub Glub or PSSSSSSSS</td>
</tr>
<tr>
<td>GERM</td>
<td><img src="image" alt="Germ" /></td>
<td>Heh heh (evil laugh)</td>
</tr>
<tr>
<td>UNHAPPY</td>
<td><img src="image" alt="Unhappy" /></td>
<td>Ohh oh</td>
</tr>
<tr>
<td>BOIL</td>
<td><img src="image" alt="Boil" /></td>
<td>b-b-b-b-b-b-b</td>
</tr>
<tr>
<td>HAPPY</td>
<td><img src="image" alt="Happy" /></td>
<td>YAY!!</td>
</tr>
</tbody>
</table>

Option: Cut out these cards and hold up the right card when you read each word. Or just point to them on a page.
Read this story

I took WATER from the pump. It had GERMS in it.

When I drank the WATER the GERMS were HAPPY.

I was not HAPPY – I felt sick and UNHAPPY.

My mommy told me, “When you take WATER from the pump, it has GERMS in it. The GERMS make you sick and UNHAPPY. When you BOIL the water it is safe.”

The next time I took WATER from the pump, I BOILED it.

The GERMS were UNHAPPY! But I drank safe WATER so I was HAPPY!
Reminder & habit: Reinforce the habits of drinking treated water and using a latrine

Objectives: Create the habits of drinking treated water and using a latrine

Time: 10 minutes the first time, a few days at 3 minutes

What you need: None

Ages: 7-adult

Preparation
Recall the encouraging phrases, gestures, or images that create a good feeling in this setting that you identified in the habit for handwashing (for example, say “Great job!”, do a fist pump, and visualize a crowd cheering in appreciation).

Ensure that treated water and a clean latrine are available.
- Have a process in place to refill the water dispenser with treated water and clean the latrine.

Activity
Ask the students if they think there is an important habit that can stop the spread of poop and germs. Wait till they say “Drink treated water” and “Poop in a latrine, not outdoors.”

Tell the students:
- “That is right. Each time you drink treated water and each time you poop in a latrine, you are protecting the class and the village from pollution by poop and attacks by germs. If the whole village could see you, everyone would cheer you!
- “Thus, each time you leave you drink treated water and each time you poop in a latrine, you should stop and:
  - Repeat your encouraging phrase”
  - Repeat your encouraging gesture or movement”
  - Imagine the picture and sounds of a crowd cheering your great work.”
- “Take a moment to picture yourself drinking treated water. Then repeat the phrase, make the gesture, and hear the cheers of the crowd. Let’s practice now.
  - [Have students get a drink of safe water and perform the self-encouragement]
- “Now picture yourself using the latrine. Again, repeat the phrase, make the gesture, and hear the cheers of the crowd.
  - [If you have time: Have students visit the latrine, wash hands, and do the self-encouragement]

Repeat these instructions a few days in a row. After 2 weeks, most students should have acquired the habit of drinking treated water and pooping in a latrine.

Key words: Activity, Prevention, Reminder, Diarrhea, Latrine, Safe water

Introduction to worms

Objectives: Students learn
- Worms and other parasites that live in you come from eating poop and walking on poop.
- Worms drain your energy. Girls are not as pretty. Boys are not as strong and fast.
- You can protect yourself from worms with safe water, handwashing, shoes or sandals.
- Deworming is easy and protects you and the whole class and community.

Preparation: Identify the intestinal parasites relevant to this region. Print out gross pictures.

Activity

Worms that grow in your guts eat the food that you thought you were eating. It is like having a tenant who never pays rent!

Here is whipworm, one of the common parasites, growing out of somebody's guts. Females can lay up to 20,000 eggs a day. other worms grow longer than you are tall! 38


King Richard III of England had roundworms from eating someone’s poop. Here is the king’s skeleton. Scientists found roundworm eggs among the bones! http://www.nbcnews.com/science/richard-iii-roundworms-8C11067779
Everyone around here gets worms. What are long-term problems caused by worms?

Worms take away your energy so you:
- Cannot run as fast
- Cannot pay attention and learn as much in school
- Cannot grow up to be as strong and good looking

How do worms get from one person to another?

Even worse, it is disgusting how worms get from one person to another!

Worms are spread when someone
- Eats food or drinks water that has poop in it; or
- Steps on poop in the dirt with bare feet.
What are symptoms of having worms?

Often there are no obvious symptoms from worms and other intestinal parasites. When there are symptoms, they may include:
- Diarrhea, which may become severe and chronic
- Pain in your belly
- Feeling like you might throw up (nausea) and throwing up (vomiting)
- Sometimes you can see worms wriggle in your poop, or even come up when you cough!

How can you get rid of worms that live in your gut?

Fortunately, it is easy to get rid of worms. Just take a deworming pill.

How can you prevent getting worms?

You can prevent getting worms if you:
- Wash hands carefully with soap
- Drink safe drinking water (boil, chlorine or filter)
- Wear shoes and have a solid floor
- Encourage neighbors to avoid spreading worms:
  - Deworm
  - Wash hands with soap, and
  - Poop in a safe latrine

How do you get safer if your neighbor gets rid of and prevents herself from getting worms?

If my neighbors
- Deworm
- Drink safe water
- Wash hands with soap, and
- Poop in a safe latrine

there won’t be worm-filled poop all over the neighborhood.

See pictures at http://www.thelifetree.com/gallery.htm
**Outdoor game: Worm tag**

Objectives: Students learn that worms spread easily. While deworming protects individuals for a short while, mass deworming protects individuals much better.

Time: 30 minutes

What you need
- 5-50 players
- Area that students are able to run

Ages: 5-13

Activity

**Round 1**

- Choose about 10% of the players to start as “infected with worms.”

Explain:
- *These players are infected with worms. They try to tag other players.*
- *A player who is tagged now becomes infected. They also try to tag other players.*
- *The round is over when all or none are infected.*

Note: Pretty soon all the students should be infected.

Variation: In a much smaller play area, have the “worms” start on their bellies. They can only crawl around.

Discussion
- Ask: *How do worms spread?*  
  - *From one infected person to another?*
- Ask: *Could you always tell who had worms?*  
  - *No*
- Ask: *Are worms easy to spread? Did the pace get quicker for after we began? Why?*  
  - *Worms spreads slowly at first, but quickly when more are infected (at least until almost everyone is infected).*

**Round 2**

- Divide all the students (including those infected) into two groups, A and B. Have infected students in both groups.
- The same rules as round 2.
- Explain:
When I yell “A” or “B” that group comes to me. I will give each player a deworming pill (actually, a high five). Then they are no longer infected.

Infected players must chase uninfected players (not just remain near the deworming activity).

- Start the game. Call the two groups separately with enough time in between for some to be reinfected.
- Stop the game after a few minutes, or when all are infected.

Discussion

- Ask: What happened? Were more or fewer people sick? Why?
  - Fewer people were sick. But what happens if you wait until are all infected? Then the same amount of people will be sick.
- Before I called group B, was it easier or harder for you to avoid worms than in Round 1? Why?
  - Even people who had not yet dewormed had fewer infected people chasing them because the A group was dewormed.
- Ask: I dewormed everyone. Did I wipe out the epidemic? Why not?
  - Infected people re-infected those that had been dewormed.

Round 3

- Start round 3 with the same rules as round 2.
- Now call: Both groups A and B at the same time come to deworming.
- Deworm all the students with a high five.
- The game continues, but it is totally boring – there are no more worms!
  - Stop the game after 10 seconds.

Discussion

- Ask: What happened?
- Ask: Why did the healthy people win?
  - If we 100% deworm, there are no worms in the group to re-infect us.
- Ask: What if someone visits another village with worms and returns to this village?
  - He or she might have worms. If so, worms will start to spread again.
- Ask: Why do we need to re-apply deworming a few times a year?
  - People might bring worms here, and we do not want them to start spreading!.

Explain: Worm tag is not precise, as you do not get worms from people touching you, but from open defecation and then stepping on or consuming poop with the worms. YUCK!

Key words: Outdoor game, Prevention, worms, deworming, curing
Making: Curing bad diarrhea with ORS

Objective: Students understand the role of oral rehydration solution (ORS). Older students learn to make it.

Time: 5 minutes for younger children, 20 minutes for ages 9 and above

Ages: any age for introduction, 9 and older for recipe

What you need
- Recipe cards for each student OR paper and pencils
- Ages 9 and over, for each group of 4 or so:
  - 1 litre of clean water
  - Add 5 level teaspoons (30 ml.) of sugar
  - Add ½ level teaspoon (2.5 ml) of salt

Preparation
- Writing materials
- Option: Print recipe cards for each student.

---


Atul Gawande writes: BRAC had 7 instructions: “for instance, severe diarrhea leads to death from dehydration; the signs of dehydration include dry tongue, sunken eyes, thirst, severe weakness, and reduced urination; the way to treat dehydration is to replace salt and water lost from the body, starting with the very first loose stool; a rehydration solution provides the most effective way to do this.

BRAC’s scientists had to figure out how the workers could teach the recipe for the solution. Villagers had no precise measuring implements—spoons were locally made in nonstandard sizes. The leaders considered issuing special measuring spoons with the recipe on the handle. But these would be costly; most people couldn’t read the recipe; and how were the spoons to be replaced when lost? Eventually, the team hit upon using finger measures: a fistful of raw sugar plus a three-finger pinch of salt mixed in half a “seer” of water—a pint measure commonly used by villagers when buying milk and oil.


40 Adapted from [http://rehydrate.org/solutions/homemade.htm](http://rehydrate.org/solutions/homemade.htm)
ORS Drink for Diarrhea

If someone has diarrhea (meaning 3 or more loose stools in a day), they need to replace the fluids they have lost. Some stores have a package of ORS you can buy and mix with clean water. If the ORS package is not available, this special ORS drink is just what they need.

Recipe: Mix together
- 1 litre of clean water
- Add 5 level teaspoons of sugar (about 2 fistfuls)
- Add ½ level teaspoon of salt (about 2 three-finger pinches)
- Stir

How much should they drink?
- A child under the age of 2 years needs at least 1/4 to 1/2 of a large (250 millilitre) cup of the ORS drink after each watery stool.
- A child aged 2 years or older needs at least 1/2 to 1 whole large (250 millilitre) cup of the ORS drink after each watery stool.

Remember
- Keep providing ORS, even if they feel better, until they are done with loose stools.
- If diarrhea lasts more than 4 days or if the person’s skin remains in a little pointy peak after you pinch it, take the person to a health clinic right away.

Activity

Explain:
- When someone has regular diarrhea, their body runs out of sugar, salt and water.
- We make them this recipe which should taste a bit sweet and a bit salty, but no saltier than tears.

Everyone: Hand out cards with the recipe for ORS or put the recipe up and have the students copy it.

Ages 9 and up: Explain we are going to make ORS together. Before making it, check their knowledge about:
- Ask: When do we give it and to whom?
  - Expected student response: Anyone suffering from regular diarrhea
- Ask: Why do we give it?
  - Expected student response: To give the body the water, sugar and salt it needs
- Ask: How should it taste
  - Expected student response: A little sweet, a little salty but no saltier than tears

Lay out the ingredients and take the students through the process step by step.
  a. 1 litre of clean water
b. Add 5 level teaspoons of sugar
c. Add ½ level teaspoon of salt
d. Stir

2. Let the students taste it

3. Last 2 questions:
   • Ask: *How does this drink help our bodies when our stomach is not fine?*
     - Expected student response: *It replaces the fluid that is lost from having diarrhea*
   • Ask: *How often do we give it to someone to drink if they are using the toilet often?*
     - Expected student response: *Each time the sick person uses the toilet, give one glass of ORS*

Discussion
   • Ask: *Where will you store the ORS recipe card?*
   • Have them visualize using it. Can they picture themselves explaining it to their parents?
     - Perhaps best if they teach the ORS recipe to younger siblings now, so the younger siblings will know what to expect and perhaps even request it.
      ▪ (Seems unlikely…)

Key words: Making, Curative, Diarrhea
Appendix to be tested: Using paper to make a mini-measuring cup xx

Note: We need to test these directions. If useful, we can add photos or diagrams.
- Take a square of paper about 10 to 15 cm. on a side.
- Fold the square along the long diagonal so it is a triangle.

![Triangle]

- Fold it in half by taking the two long ends and folding them together. It should again be a triangle, but half as large.

![Folded Triangle]

- Turn the triangle so the longest side faces up. There should be four layers of paper facing up.

Q: Should they mark the cm. marks on the paper?

![Marked Triangle]

- Pull the one sheet of paper that is closest to you towards you, and away from the other three pieces of paper. That pull should leave a cone with its point facing downward. Keep pulling that one layer of paper towards you and open up the cone until it is round.

Pour sugar and salt in here.

![Poured Sugar and Salt]

For one liter of water:
- Measure xx cm of sugar into the point of the cone. Pour that sugar in to the water.
- Measure xx cm of salt into the point of the cone. Pour that salt in to the water.
**Arts & Making: Story book**

Use information from previous activities to write stories about individuals or communities affected by unsafe handwashing, water, or pooping outdoors.

**Time:** 5 hours over several days

Objective: Students will plan, write, illustrate, and publish their own children's picture books and review a peer’s story.

Ages: 8 and above

**What you need**
- Paper
- Writing supplies
- Drawing supplies

**Activity**

**Picking the scenario**

Review some of the scenarios in the Skits sections on handwashing, safe water, and safe latrines.

- Relate these themes to personal experiences, familiar stories, or characters or places you make up.
  - Use the themes list and mention a story or image from their life.
  - Ask students to use all five senses in describing this story or image.
- List all the memories and connect them to the themes.
- Brainstorm additional details.
- Incorporate as much of the material on handwashing, safe water, or safe toilets as possible (or perhaps a combination)

**Brainstorm story ideas**

- What are one or 2 things that tell me the most about the main character?
- What is the problem the main character faces?
- Now tell the possible actions of the main character and the possible complications that might result.

---

41 This activity can be included as part of any unit. This activity is adapted from: [http://www.readwritethink.org/classroom-resources/lesson-plans/children-picture-book-project-1022.html?tab=4#tabs](http://www.readwritethink.org/classroom-resources/lesson-plans/children-picture-book-project-1022.html?tab=4#tabs)

Possible Actions

<table>
<thead>
<tr>
<th>Possible Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tbody>
</table>

Fill in the plot template

Explain and have students fill in the plot template:

1. Introduce the characters and setting
2. Introduce the main conflict (2-page spread)
3. First action to deal with the conflict + resulting complications
4. Second action to deal with the conflict + resulting complications
5. Third action to deal with the conflict + resulting complications
6. Climax. Presentation of the correct action to solve the conflict
7. Examine how the main character feels (2-page spread)
8. Finish up (“Tuck in” the main character)

Students pitch their stories to their peers

Peer review questions

1. Does the main character have one or more traits that appeal to children?
2. Is the conflict something that a child will understand?
3. Does the main character try at least three different actions to solve the conflict?
4. Is the conflict solved through the main character’s self-reliance?
5. Will the plot interest the reader so the reader wants to turn each page to find out what happens next?
6. Will the reader care about what happens to the main character?
7. Where are the more exciting places?
8. Where are the places that need more “zip” added to them?

Students then use peer feedback as they develop their stories.

Students create storyboards to plan the relationship between the illustrations and text.

- Fold a piece of paper into 4 or 6 and then unfold.
- Roughly sketch each page (text and illustrations) in one box of the paper.
  - Write on only one side of a page.
- Groups of 2 or 3 students discuss their storyboards.
**Students write, edit, and illustrate the story**

- Students write and illustrate the story.
  - Also, write a paragraph “About the author.”
  - If possible: Teachers print a photo for the “About the author” page.
- Peers proofread the text before placing it in the final copy of your book.

**Students bind the story**

- There are two choices for binding
  - Staple the book on the side. Then glue a strip of ribbon or construction paper over the staples for a more pleasing look.
  - Punch a hole in the upper left and tie with ribbon, string or yarn.
    - Option: Also punch a hole in the lower left and tie.
      - Station yourself near the materials for binding the books. Provide help with the bookbinding process as students reach this stage.
- As the books are completed, encourage students to read their stories to one another as a whole class or in small groups.

**Sharing the books**

- Students read books to the class
- Students read books to younger children.
  - Select the best books.
  - Divide students into groups of three and assign the following tasks to be completed during the visit: reader, page-turner, and master of ceremonies.
  - Each group can also develop short skits, costumes, or props to enhance the presentation.
- We include the books in the school’s library.
Add sanitation topics to multi-topic activities

Remember: You should typically do one of Skits / Posters / Songs in each unit.

Arts Activity: Skits

Objectives: Students act out challenges, find solutions, and practice reminders regarding sanitation in a nonthreatening and fun environment

Activity
Review the instructions in the Handwashing unit.

As always, you can ask students to make up their own skits. In addition, here are some possible scenarios regarding using a latrine

1) An older male relative does not understand why it is important to use a latrine, even though lots of kids are getting sick in the area. He says he has always pooped out in the fresh air.
2) You see a friend pooping by the river. You do not want to drink his poop, but you do not want to lose a friend, either.
3) A new kid comes to town and does not know that it is important to use a latrine. Other kids are mean to him, and he does not know why.
4) Some of the older kids make fun of a younger kid for being a teachers’ pet because he always poops in the latrine.
5) Big brother or sister scoops poop of toddler. Explains to other siblings why it is important.
6) Advising the President: Your group has been hired by the President to explain the threat of worms and other parasites in this region and how to reduce the threat. Prepare this information and act out this skit.
7) The mystery of the slow champion: Bobby is the fastest kid in the village. Then he loses the race to a nearby village – to a kid he has always beaten. Bobby is also suffering tummy aches. He has to figure out why he is slowing down. Other students help him learn about worms, get rid of them, and win honor for the village – all before the race next week!
8) ORS and treatment for diarrhea: A child has diarrhea and the parents say, “Why should I give her something to drink when she just poops it right out?”
9) Germs narrate their voyage from gut to gut, via feces, flies, fingers, fluids, and food. See “Germ Race” game for an outline of their voyage.
   a. The germs get sad whenever soap, filters, and so forth defeat them all.
   b. One germ could be the “general” directing others into combat, and narrating their defeats.

Arts activity: Songs
See instructions in Handwashing Unit.

Arts activity: Posters
See instructions in Handwashing Unit.
**Practice explaining about safe water**

Objective: Have students practice explaining to a younger sibling why it is important to use a latrine or toilet.

Time: 10 minutes

Ages: 7 and up

Activity

Have students practice explaining to a younger sibling why it is important to use a latrine.

Have students give feedback to each other to make sure the basic lessons are covered:

- Pooping outdoors means that
  - Flies land on poop and then on food.
  - Rain washes the poop into the water
- Nobody wants to eat your poop and germs.
- So use a latrine.

**Assessment: Household assessment to engage families**

Each student receives a form similar to:
Dear parent:

We would like your child to circle a reply to each question. Please put your name or mark to show your child has talked about these answers with you.

Student’s name ___________________

1) At home your child has access to a safe latrine for defecation
   o Yes   No [skip to question 2]

   o 1A) If so: At home your child uses the safe latrine to defecate:
       ▪ Always   Usually   Sometimes   Rarely   Never

2) Has your child explained to his or her younger siblings why it is important to use a latrine?
   o Yes  No
       There are no younger family members

3) Your child has shared with me the recipe and instructions for treating diarrhea with ORS.
   o Yes  No

<<Note: If the student did a poster, add:>>

4) Your child shared the poster with the family and discussed its message.
   Yes  No

Parent’s signature or mark ____________________

Option: Should we have a more open-ended question such as “What are obstacles to using a latrine at your home?” The student won’t write down many of the replies, but such questions probably spark better discussions.
<table>
<thead>
<tr>
<th>Quiz</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is a disease flies carry from poop on the ground to food?</strong></td>
<td>Either: Diarrhea, cholera, or typhus</td>
<td></td>
</tr>
<tr>
<td><strong>What disease spreads from poop to your foot?</strong></td>
<td>Worms</td>
<td></td>
</tr>
<tr>
<td><strong>Why does it put you at risk if your neighbor poops out of doors?</strong></td>
<td>Because germs in the poop can flow to your water or be carried by flies to your food! You can step on it and get worms!</td>
<td></td>
</tr>
<tr>
<td><strong>True or False: You can stop taking ORS after you feel better but you still have light diarrhea.</strong></td>
<td>False. Keep taking ORS pills must be continued until all diarrhea is gone.</td>
<td></td>
</tr>
<tr>
<td><strong>What can cure diarrhea and cholera?</strong></td>
<td>ORS or Oral rehydration solution</td>
<td></td>
</tr>
<tr>
<td><strong>What are the ingredients of oral rehydration solution (ORS)</strong></td>
<td>Clean water, salt, sugar</td>
<td></td>
</tr>
<tr>
<td><strong>What cures worms?</strong></td>
<td>Deworming pills</td>
<td></td>
</tr>
<tr>
<td><strong>Why are you safer if all your neighbors take deworming pills?</strong></td>
<td>Then poop in the area will no longer carry worms</td>
<td></td>
</tr>
<tr>
<td><strong>What is a disease that causes terrible diarrhea that can kill in less than 2 days?</strong></td>
<td>Cholera or typhus</td>
<td></td>
</tr>
</tbody>
</table>
Quiz game: Spot the Differences between Unsafe and Safe Behavior

Objective: Students should be able to spot the differences in the pictures between a healthy community and an unhealthy community.

Time: 15 minutes

What you need:
- Two drawn pictures of a community

Preparation
- Create two drawn pictures of your community (picture A and picture B)
- Picture A shows unsafe behaviors (open defecation, worms, bare foot, not washing hands, etc.)
- Picture B shows safe behaviors (latrine, washing hands with soap, wearing shoes, etc.)
- Have some of the examples be more obvious and others be more discrete

Activity:
- Have students circle the differences between unsafe and safe behaviors.
- Check to make sure the students spot all of the differences.
Resources on Sanitation

Online resources

School-led Total Sanitation
Community-Led Total Sanitation (CLTS) is the inspiration for several activities in this chapter.
***** A manual on their variation School-led Total Sanitation is at
http://www.communityledtotalsanitation.org/sites/communityledtotalsanitation.org/files/media/S
LTS_Guidelines.pdf
Ongoing discussions of CLTS are at
http://www.communityledtotalsanitation.org/topics/children-and-schools

Videos (free and online)

Meena's Three Wishes - Meena tackles the issues of hygiene and sanitation
https://www.youtube.com/watch?v=iulgE0jEJNe
(If in Spanish, please find English version)

“Poo Loo” https://www.youtube.com/watch?v=_Pj4L7C2twI
****. Ages 13-adult; 4 min.
Very funny and gross. The language is vulgar (“shit” that “stinks to high hell”) The project website is http://www.poo2loo.com/

Saving a Life: Meena saves baby Rani when she has diarrhea
https://www.youtube.com/watch?v=FuDFJhLCgvw
*** ages 5-13
Meena is a great character and this cartoon has some dramatic plot. The lesson is about keeping up fluid intake, without mentioning ORS.

Meena: Safe From Worms. Worm infestation and prevention
http://www.unicef.org/rosa/Rosa_Meena_Safe_from_worms.PDF
*** Meena is always appealing. This cartoon is instructional, without a plot

Comic books (free and online)

Saving a Life: Meena saves baby Rani when she has diarrhea ↑
  •  http://www.unicef.org/rosa/Rosa_Meena_Saving_a_life.PDF
*** Meena is a great character and this comic has some dramatic plot. The lesson is about keeping up fluid intake, without mentioning ORS.

NGOs
Deworm the World is a great NGO working on eliminating parasites from school children.
http://www.dewormtheworld.org/
Unit 4. **Respiratory Infections**

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**Background**

Pneumonia is the leading cause of children’s deaths in most poor nations. Household air pollution from cookstoves cause 3 million or more deaths a year. More than half are from pneumonia. Second-hand smoke from tobacco causes an additional 600,000 deaths a year. \(^{43}\) Handwashing can help a lot in preventing the colds and flu that can turn into pneumonia. \(^{44}\)

**Objective for Unit 4: Respiratory Infections**

- **Learning** If you sneeze and cough and serve food with hands not washed with soap you spread serious diseases and disgusting snot to yourself and your neighbors. Smoke from stoves turns a mild cold into serious pneumonia.
- **Behavior**: Students treat by covering their sneeze and cough, wash hands with soap, and avoid smoky cookstoves. Students encourage others in these behaviors.


Preparation: Needs Assessment

Incidence of respiratory illnesses

- In most nations respiratory illnesses such as pneumonia and bronchitis are the leading cause of child death, ahead of malaria and diarrheal diseases. How do they rank around here?
  - Childhood pneumonia rates are at [http://www.who.int/bulletin/volumes/86/5/07-048769/en/](http://www.who.int/bulletin/volumes/86/5/07-048769/en/). In most poor countries about 1/3 to ½ of children under five get pneumonia each year.
  - For example, overall death rates from pneumonia (all ages combined) are at [http://www.worldlifeexpectancy.com/cause-of-death/influenza-pneumonia/by-country/](http://www.worldlifeexpectancy.com/cause-of-death/influenza-pneumonia/by-country/)

Perceptions and beliefs

- What do students believe causes colds and flu?
  - Adults?
- How disgusting is it to eat someone else’s snot?
- Do people think of colds and flu as serious or just annoyances?

Prevention at home and school

- How often do students cough and sneeze into an elbow?
  - How often do adults?
- How often do students wash hands before eating?
- How often do students share a lot of food and utensils?
- How much are families using smoky wood or charcoal fires for cooking?

Diagnosis

- How well do students distinguish the common cold from a true flu?
- How well do students distinguish flu from malaria?
  - Adults?
- Do students know what “pneumonia” is?
  - Do adults?

Treatment

- When people have a serious flu, how often do they go to a doctor or clinic?
- What is the common treatment for a flu (that is, not pneumonia and not malaria, but high fever and feel terrible)? Is it an injection? A drip? Antimalarial pills? Antibiotics?
  - Note: All of those treatments are inappropriate, waste money, and sometimes can be dangerous.

Prevention in the Community

- How often do adults wash hands before preparing food?
• How often do adults cough and sneeze into an elbow?
• What is the main cooking fuel?
  o If it is wood or charcoal: Is cooking usually done in an enclosed, semi-enclosed, or outdoor setting?

At home and at school:
• How, where and when does defecation takes place? Should it take place?
• What are the barriers and benefits of sneezing into an elbow at home? At school?
• Who has influence on the students regarding sneezing into an elbow? Making ORS?
Reminder: You are the example

Make sure you always cover your cough and use a safe cookstove, both at home and school.

Presentation: Cold, flu and measles move from snot

Some germs live in our snot, like the cold, flu and measles. How do they get from a sick person to infect a new person?

<table>
<thead>
<tr>
<th>How germs spread</th>
<th>Ill people can stop cold &amp; flu germs from spreading by:</th>
<th>And healthy people can avoid germs by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sneezes and coughs into the air</td>
<td>covering their cough and sneeze</td>
<td>washing hands with soap</td>
</tr>
<tr>
<td>Sneezes and coughs onto hands</td>
<td>washing hands with soap</td>
<td>washing hands with soap</td>
</tr>
<tr>
<td>Saliva</td>
<td>using their own food and utensils</td>
<td>using their own utensils</td>
</tr>
<tr>
<td>Use stoves that make dangerous smoke that harms the body’s defenses against germs</td>
<td></td>
<td>Avoid smoky cookfires</td>
</tr>
</tbody>
</table>

Fun facts

- Sneezes travel at 150 km / hour. No wonder germs spread so quickly!
  - a single sneeze can send 100,000 germs into the air.45
- Coughs only go about 100 km/ hour. Not as fast as sneezes, but still about 10 times faster than you can run!

---

Demonstration: Show how far a cough can travel

Objective: Show how far a cough or sneeze can travel.

Time: 5 minutes

What you need: About 15 torn up pieces of paper (each about a square centimeter).

• A piece of string about 4 meters long.

Preparation
Put the pieces of paper in your hand and make a slightly open fist.

Hold the fist to your mouth and cough vigorously into the opening. The paper should fly out. Keep practicing till the paper bits fly at least one meter.

---

46 Adapted from http://www.btboe.org/files/_paL5Y_/9fa6f2124b2f1d053745a49013852ec4/District_Handwashing_Curriculum.pdf
Activity
Say:

*We have seen how diarrhea germs travel through water and on fingers. Now we are going to see how germs that cause colds and flu spread.*

*If you have a cold or flu, your body releases germs when you cough or sneeze. What happens if you are close to me when I cough?*

Put the pieces of paper in your hand and make a slightly open fist. Hold your hand in front of your mouth and cough vigorously into the opening. The paper should fly out at least a meter.

They should say: *We get the germs on us / we breathe in the germs.*

*Real sneeze travel up to 4 or 5 meters! How many of you are sitting within 4 meters of me? What happens to you when I sneeze?*

They should say: *We get the germs on us / we breathe in the germs.*

Hold one end of the piece of string and have students walk the other end around about 4 meters away.

*How many students are sitting within 4 meters of me?*

Touch the paper and ask.

*What happens when you touch the paper?*

They should say: *We get the germs on our hands.*

*What would happen if one of your friends touches the table with germs and then you?*

They should say: *We get the germs on us.*
Discussion
Talk about ways to prevent the germs from spreading

- To stop germs spreading from a cough or sneeze
  - Cough and sneeze into an elbow
- To stop germs spreading from fingers that wiped noses and mouths or that touched a surface
  - Wash with soap before preparing food or eating
- To stop germs that move in saliva
  - Do not share utensils, cups or glasses
  - Do not pass food that has been in someone’s mouth

Fake snot recipe47 ≪Unclear how to use - need to pilot≫
Note: Needs adult supervision as borax is a strong chemical that should never go near your eyes, mouth or nose.
1. Mix 1/8 cup borax with 2 cups warm water. Let cool 5 minutes
2. In a different bowl mix 2 spoonfuls of school glue with 3 spoonfuls of water
3. Add 3 drops of green food coloring to the blue and water mix
4. Pour the glue-and-water mixture into a plastic bag. Then add 1 spoonful of the borax-and-water solution.
5. Squish together till mixed.

---

For a safe alternative: Will flour water and food coloring work? Or add oil?
**Board Game: Cold & Flu Germ Race**

Objective: Learn how respiratory diseases travel and how to prevent them.

Time: 25 minutes

**Ages 9 and above**

What you need for each group of 2-4 students:
- One game board
- One six-sided die
- 4 tokens per player

Activity: See game board for instructions

**Outdoor game: Cold & Flu Germ tag**

Objective: Learn how cold & flu germs spread and how handwashing and covering cough helps fight its spread

Time: 20 minutes

Age: 6 and up

Number of players: 4 or more (6 or more is best)

What you need
- Space for students to run around that has clearly marked boundaries
- Corner markers, stick or a chalk to make a smaller set of boundaries
- 10 soft balls, can be wadded up paper.
- Some form of noise-maker, such as a whistle or horn.
- Name tags with sleep, eating well, exercise, cover your cough, handwashing, hand sanitizer etc. on them.

Preparation
Mark off a play area with the corner markers, stick, chalk, etc.

Activity
Have students sit in a circle in the middle of the play area. Explain that you are playing a game with more than one round. Each time they hear the noise-maker, they should come back and sit down where they are now.

---

48 Adapted from Saskatoon Health Region, May 2012
**Round 1** – designate 5 “sick” students. These students are “it.” They should cover their mouth with one hand (to show they are sick) and try to tag other students. If a healthy student is tagged, they become “sick” and cover their mouth and try to tag other students. The round ends when all students (or at least the vast majority) are tagged sick.

**Round 1 Discussion** – when the students are back seated, discuss how long it took for everyone to get sick. What was it like for the few healthy at the end trying to stay away from so many sick people? Was it harder than at the start of the round when there were only 5 sick people? Discuss how people got sick in this round (through direct contact or touching someone else who is sick).

**Round 2** – designate 5 “sick” students again. But, this time add the 10 soft balls (or wadded up pieces of paper). These are airborne viruses. If a healthy student is tagged by a “sick” person or hit with a “soft ball germ”, they are sick too. The new sick people must try to tag the healthy people by touching them or hitting them with a ball. The round is over when everyone is “sick”.

**Round 2 Discussion** – when students are back seated, discuss how long it took for everyone to get sick. Did people get sick faster with both direct touching and airborne germs?

**Round 3** – designate 5 “sick” students again, and include the 10 soft balls (airborne germs) again. However, this time, shrink your space by half.

**Round 3 Discussion** - when students are back seated, discuss how long it took for everyone to get sick when they had so much less space. This is why we get sick more often when we are around lots of other people (like in school, on the bus, in church). The more dense the population, the easier it is for germs to spread.

**Round 4**: If a student is tagged, he or she must fall to the floor and sleep. Any un-tagged student can come and mime squirting soap on the fallen student. The sick student must act out washing hands and sneezing into his or her elbow, and is then unfrozen and returns to the game.

**Round 4 Discussion**: It should have been slower to get sick (that is, easier to stay healthy) when sick people stay home and do not infect others.

*If you have time…*

**Round 5** – repeat round 3 with the addition of “healthy habits”. These students wear name tags with sleep, eating well, exercise, cover your cough, handwashing, hand sanitizer etc. on them. These students cannot get tagged sick, and can un-tag a “sick” student to make them healthy again. You may need to end this round based on time since you may not reach a point where everyone is sick.

**Round 5 Discussion** – when students are back, discuss the impact of healthy habits. The more healthy people there were spreading healthy habits (like handwashing), the harder it was for the unhealthy people to spread germs and make people sick.
Discussion: Smoky cookstoves

Objective: Students learn smoke from a cookstove is very dangerous, and ways to minimize smoke exposure.

What you need: Optionally: Print out the pictures in this section.

Discussion

Ask:
- How do you feel when you spend a long time in a smoky kitchen, standing over a smoky fire?
  - Answers:
    - Sore eyes
      - (Possible prompt if they do not mention sore eyes: How do your eyes feel when you are near a smoky fire?)
    - Cough
    - Sore throat
    - etc.
- Explain: That is because you are being poisoned!

- Ask: What color are the walls of a smoky kitchen?
  - Answer: Black
- Ask: Why?
  - Answer: They are covered with soot from the fire.
- Explain, if necessary, what the lungs do.
- Ask, while pointing to your lungs: What do you think smoke does to your lungs?
  - Answer: Lungs get dark and covered with soot as well.
- Explain: That is right. The most important cause of breathing problems around here is breathing in all the smoke from cook fires.
Explain:
- *When smoke fills up your lungs, kids get more colds and flu*
  - And cold and flu turn into more serious pneumonia that can kill
- *Smoke from cooking kills the same number of children as malaria each year in Uganda!*

If students understand smoking is dangerous, you can use this image.

Ask: *Would you let a baby smoke a cigarette?*

Explain: *But that is what you are doing if a kid is in a smoky kitchen!*

Ask: *How can you reduce smoke exposure?*

Answers to expect (or prompt):
- *Get a modern stove such as gas or electric that does not make smoke*
  - Ask: *What are obstacles to a gas stove?*
    - Answer: Gas stove and gas are expensive.
    - Explain: *These cost a lot, but save hospital costs and lives!*
- *Use a chimney*
- *Open the doors and windows*
- *Keep kids out of the smoky room!*
  - Do not have a baby on the mommy’s hip or lying on the floor of the kitchen (or next door)
Appendix: Pictures for stoves & smoke

Smoker's lungs

Non-smoker's lungs
**Add respiratory infection topics to multi-topic activities**

**Skits, Poster, & Song on cold & flu topics**

Objective: Reinforce cold & flu diagnosis, treatment, and prevention

Activity
Ask students to make a skit, poster and/or song on colds and flu, preventing colds and flu, and treating colds and flu and pneumonia.
See details of each activity in Handwashing Unit.

**Skits on cold & flu topics**

Sample topics for the skits
- Billy is sick and sneezes all over. How do classmates react?
- A wife and mother is Queen of her home. (Image of a queen in a white outfit.)
  - Then she spends hours a day in a smoky kitchen. (Overlay red eyes, dingy outfit, smelly clothes, snotty nose, cough.)
  - Is this the image of a Queen? One who is respected by neighbors? One who makes her husband proud?
  - If she had a safe stove, we would have a real Queen. (Restore clean queen image.)
- Smoke from a cookstove is a tiger or snake, harming people. Would you let a snake into your home? Then why let in smoke that harms?

**Sample activity for Poster on respiratory infections**

Objective: Make sneeze pictures to illustrate how germs spread when you do not cover your mouth when sneezing.

What you need: spray bottle and food coloring

Ages: 5-8

Activity
- Each child gets a piece of white paper
- Have the children pretend to sneeze, and then spray their pictures with colored water.

Students love this activity and talk about it for quite some time.

---

49 Suggested by Monica at http://www.perpetualpreschool.com/preschool_themes/germs/art.htm
Practice explaining about colds & flu

Objective: Have students practice explaining to a younger sibling how to prevent respiratory infections.

Time: 10 minutes

Ages: 7 and up

Activity

Have students practice explaining to a younger sibling how to prevent respiratory infections. That is, students should explain to one another as if explaining to a younger brother or sister. Then they should go home and teach their younger family members.

Have students give feedback to each other to make sure the basic lessons are covered:
- Wash hands with soap to prevent spreading or getting a cold or flu.
- Cover your cough and sneeze so your family does not catch your cold or flu.
- Avoid smoky fires so you do not get sick so often.
  - Smoke that hurts your eyes is a poison that hurts your lungs even worse!
- If you are sick, stay home so others do not catch your disease.

Assessment: Household survey and parental signature

Objective: Students bring a brief assessment home to spark a discussion of respiratory diseases prevention and treatment with their parents and family

What you need: Short assessments for each child to bring home

Activity
- Students bring an assessment home on topics related to respiratory diseases
- Parents sign off on assessment and the child returns the assessment

Ages: Literate students (or parents)

Time: 5 minutes in class to distribute and 5 minutes to collect (or 20 minutes, with discussion).

- Assessment
- Talked to younger siblings
- If they did a poster: discussed with family
- Etc.

Discussion
- Ask How did you parents treat the assessment?
  - What did you have a chance to explain from what you have learned?
• How did it go teaching younger family members?

Practice explaining about avoiding colds and flu

Objective: Have students practice explaining to a younger sibling why it is important to wash hands with soap and to cover a cough and sneeze.

Time: 10 minutes

Ages: 7 and up

Activity

Have students practice explaining to a younger sibling why it is important to wash hands with soap and to cover a cough and sneeze.

Have students give feedback to each other to make sure the basic lessons are covered:
• Cold and flu germs spread through sneezes and coughs.
• To stay healthy it is important to wash hands with soap and to cover a cough and sneeze
• If you wash hands with soap and to cover a cough and sneeze then I am safer (and if I remember these behaviors, you are safer). Let’s remind each other!

Assessment: Household assessment to engage families

Each student receives a form similar to:
Dear parent:

We would like your child to circle a reply to each question. Please put your name or mark to show your child has talked about these answers with you.

Student’s name ____________________

1) Your child sneezes and coughs into his or her elbow.
   Always   Usually   Sometimes   Rarely   Never

2) Has your child explained to his or her younger siblings why it is important sneeze and cough into his or her elbow?
   Yes   No   There are no younger family members

3) Does your child stay away from smoke from a cookfire?
   Always   Usually   Sometimes   Rarely   Never

4) Has your child explained to his or her younger siblings why it is important to stay away from smoke from a fire?
   Yes   No   There are no younger family members

≪Note: If the student did a poster, add:≫

5) Your child shared the poster with the family and discussed its message.
   Yes   No

Parent’s signature or mark _________________
Reminder: Reinforce the habit of covering your cough and sneeze

See “Reinforce habits…” in handwashing section.

Apply the principles of creating small new habits to covering your cough and sneeze. That is, each time you cough or sneeze into your elbow, rewards yourself with a moment of celebration.

- Say a quick phrase (“Great job!”) or sing a little song
- Do a gesture of congratulations (fist pump, arms in air) or a little victory dance
- Imagine praise or the roar of the crowd excited by your victory!

**Quiz**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you have a runny nose but not a fever, do you have a cold or a flu?</td>
<td>Cold</td>
</tr>
<tr>
<td>What are two diseases that can spread when someone sneezes on your food?</td>
<td>Two of: Cold, flu or measles</td>
</tr>
<tr>
<td>What are two ways to slow the spread of cold and flu?</td>
<td>Wash hands, Cover your cough and sneeze</td>
</tr>
<tr>
<td>What makes it more likely a cold or flu turns into pneumonia?</td>
<td>Being around smoke from a cookfire or tobacco (Also: Having HIV, being malnourished, xx)</td>
</tr>
</tbody>
</table>
**Resources on Colds & flu**

**Online resources**

**CDC website: Are You a Flu Fighter?**
http://www.flufacts.com/pdf/FluFighter_Coloring_Book.pdf

**Videos (free and online)**

*** Crawford's Corner- Crawford Is A "Sneezer Pleaser"
Ages 5-9 5:00
https://www.youtube.com/watch?v=-k5PJIystH4
Animated cat teaches how to stop spreading germs

**Meena: pneumonia**
http://www.youtube.com/watch?v=GIsRVfbo2ls

**Computer games (free and online)**

**Meet the Microbes - How Lou Got the Flu**

**Comic books (free and online)**

**Pandemic flu Preparedness comic book**
in multiple languages
http://www.kingcounty.gov/healthservices/health/preparedness/pandemicflu/~media/health/publichealth/documents/pandemicflu/EnglishComicbook.ashx
**Unit 5. STAY HEALTHY TOGETHER**

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**Objective for Unit Stay Healthy Together**

- **Learning**: Students know how to perform and encourage safe behaviors.
- **Behavior**: Students create and enforce a class agreement to follow safe behaviors.

**Preparation: Assessment**

Do most adults here know their neighbors well? Have adults lived here long, or are many recent migrants?

What are important local norms in this community? What are examples of how the community enforces these norms? (Or could enforce them, if someone were to deviate.)
**Reminder: You are the example**

To create new norms, make sure you always wash with soap, use treated water, use a safe toilet, cover your cough and use a safe cookstove, both at home and school.

**Simulation of “How diseases spread,” WASH**

Re-play one of the Germ Tag variations.
**Demonstration: We have to work together**

Objective: Students understand they can accomplish together what they cannot do alone.

Pick one or 2 of the following activities.

**Demonstration: All break a stick**

Time: 5 minutes

What you need:
30 or so little sticks

Activity
Give several students thin sticks and ask them to break them. Ideally include some of the smaller or younger students in the group. All should be able to break the sticks.

Take the remaining sticks and make a bundle. Hand this bundle to one of the larger and older students. Can he or she break it? (If you picked your bundle size correctly) the answer is “No.”

Discussion

Sometimes we can accomplish together what we lack strength to do alone.

**Demonstration: All lift someone with one finger**

Time: 10 minutes

What you need: Nothing

Activity

Ask: Can you lift someone with one finger?
Reply: “No!”

Say: Let’s see.

A student lies down. Every other student puts exactly one finger under the prone student. On the count of three, they all lift the prone person.

Discussion

Some things seem hard, but are easy when we work together.

Key words: Simulation, Prevention, Cooperation
Demonstration: Sitting in a circle on knees

Time: 10 minutes

What you need: at least 8 (?xx) students. (A mix of sizes is not a problem.)

Activity

Stand in a circle side by side (close enough so that your shoulders touch). Instruct the group to turn 90° to the right so that everyone is facing the back of the person in front of them. Have students put both hands on the shoulders of the person in front of them. Then ask everyone to sit down slowly on the count of three. They sit back on the knees of the person in behind them, forming one continuous sitting circle. Assuming no one gives up, the group should be able to hold itself up. Once the group has held the position for a 30 seconds or a minute, have everyone stand up at the same time. Note: if not everyone sits or stands at the same time many people could end falling to the ground.

Note to Group leaders: Some people are likely to feel uncomfortable with the idea of getting so close to other people - literally sitting in their lap (or a least on their knees). For some people this can be an issue that they are self-conscious about their weight, they are uncomfortable about other people’s personal hygiene, they have a crush on the person whose lap they are about to sit on, or they just don't like people "all up in their business." Explain anyone is really uncomfortable can become a spotter who makes sure the group is lined up correctly before sitting down and helps avoid falls once the group is sitting.

Variations

For added challenge - once everyone is seated, you can then have them raise their hands above their heads, and for additional extra challenge, you can have everyone walk in a circle, once they are in the seated position (e.g. "on the count of three everyone take a step with the right foot...")

For the truly adventurous, simply give the group the following directions: "I need to see everyone sitting in someone else's lap." When they start to sit down on the ground or on a bench or chair, simply ask the bottom person "Whose lap are you sitting in?" Though it may take some coaching to reach the final goal, this variation allows you to speak about pre-conceived notions and listening in different way

Discussion

If I asked you “Everyone sit in someone’s lap” you would not figure it out.

Some things we can only accomplish by working together.

Key words: Simulation, Prevention, Cooperation

---

Simulation: Shame of unwashed hands

Objectives: In a safe and fun environment, have students experience shame from being perceived as unclean when they do not wash hands with soap and do not treat drinking water.

Time: 15 minutes

Ages: All

What you need
  • Paper dots that are blue or brown.
    o (Hint: Draw lightly, so not visible through the paper.)
  • Optional: Props to act as meals, water containers, etc.

Activity

Round 1: Break the class into small groups. Each student holds their left hand above their head and the teacher puts a blue or brown piece of paper in it. The student does not look at his or her own piece of paper, but can see the papers of others in their group. Ask students not to mention the color of other students’ paper. Students then invite other group members over to play, act out serving them water and food, etc.

Interrupt the activity and remind students to keep their piece of paper on top of their head and out of their sight. Explain that people with brown dots above their heads do not wash hands or treat their drinking water, while people holding blue dots do wash hands with soap and treat water.

Round 2: Students continue to invite friends over to play, act out serving them water, etc. Students are welcome to avoid those with brown dots.

Round 2 discussion: Interrupt the activity and remind students to keep their piece of paper on top of their head and out of their sight. Ask those who think they have a brown piece of paper to move to one side of the room.

Ask those holding pieces of brown paper:
  • How did you decide you probably had a brown piece of paper?
  • How did it feel?

Ask those holding blue pieces of paper
  • How did you treat those with brown paper?
  • Why?

Q: Can we use real water bottles in people’s hands? Run this exercise over lunch? (Do not want to be too realistic, so that “brown” people feel bad.)
Project: Agree to be safe

Objective: Have the class or group write and sign a contract for safe behaviors.

Time: 25 minutes

Ages: All

What you need
Paper and writing implement

Activity

Note: An example is below. Ideally the class writes its own contract.

Potential prompts include:

- Why do we need a contract?
- How do you feel about people carrying poop, snot and germs on their hands?
- What can we do to prevent each of us from spreading poop, snot and germs?

Note: If you introduce the Class Contract after water, sanitation and handwashing, the agreement should include only those topics. Then leave space for items such as covering a cough and sleeping under a bednet, for when we cover those topics.
Healthy Class 2013

Whereas

Each person who gets sick can often spread disease to others; and
It is disgusting and causes diseases to spread snot and poop; and
We are proud of our community and we are strong enough to keep it safe.

Let it be known that we, the 4th grade class of Mandela Elementary School, do hereby affirm and agree that we will all:

Wash our hands after pooping and before eating
Cover our coughs and sneezes
Treat all drinking water with boiling, chlorine or a filter
Sleep under a bednet
Take deworming pills each month / semester /...

Signed, this 15th day of July, 2013

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Optional Reminder: Magic eyes

Objective: Create a publicity campaign that reminds people to avoid spreading germs.

What you need
- Paper and poster supplies

Time: 20 minutes

Preparation
Identify a good slogan along the lines of Bangkok’s: “No-no, don’t litter. Magic Eyes are watching you!”

- “Hey, No Germs Here! Magic Eyes are watching you.”
- “Magic eyes are watching you. Don’t spread poo.”
- “Hey, Hey, don’t spread germs!”
  - (Students will figure out it also scans to say: “Hey, hey, don’t spread poop.”)
- “Hey, Hey, Hey, make your germs go away.”
- Taglines to increase social pressure:
  - “Don’t mess with <<village name>>!”
  - “Friends do not let friends eat poop.”
  - “Friends do not let friends eat germs.”
  - “If you wouldn’t walk in here with a poisonous snake, please do not walk in here with germs on your hands.”

Activity
- Introduce the “Magic Eyes” poster, jingle and slogan.
  - Have students practice humming the jingle when they see someone forget to wash hands.
- Students draw posters.
- Put up posters near the latrine, handwashing station, eating places.
- Optional: Have students make Magic Eyes posters they can take home.

Appendix: Magic eyes from Thailand

51 Adapted from the « Don’t mess with Texas, » anti-littering campaign discussed in Heath and Heath.
This section is based on a Magic Eyes anti-litter campaign in Bangkok, 

“Using the campaign’s specially created symbol of frowning “Magic Eyes” and the light-hearted jingle, “Ah! Ah! Don’t litter! Magic Eyes are watching you!”, children were taught to change their littering habits as well as to remind others not to litter. By repeating the Magic Eyes jingle, children could also remind their parents and still show the required respect for their elders. 52

http://www.bangkokpost.com/lite/topstories/338096/have-you-got-magic-in-your-eyes

**Card game: Trading for Health**

The game is highly involving and active, and brings out everyone's competitive instincts. The game can be played by 5 or more individuals or teams. The bigger the teams the more noise and chaos.

**What you need**

For each team, you need 8 distinctive cards. For example, if you have six teams, you'll need six sets of 8 cards (48 total cards). The six card types can be:

- Bednet, filter, chlorine, soap, immunization, sandals.

**Preparation**

Shuffle cards and distribute evenly.

**Play of the game**

When the game starts, players may swap cards by shouting how many they wish to swap and holding up that number of cards. Players must hold up cards of a single type, but should not reveal what type of cards they are offering or hoping to acquire. There should be chaotic and enjoyable trading as players hold cards aloft shouting “one, one,” “two, two”, or whatever number of cards they wish to swap.

The winner is first team to collect all 8 of the same cards.

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53 Based on the trading game Pit!

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151
Classroom game: Alternate reality game
≪See file “Development & Art\games\alternate reality game.xx”≫

Project: Safe school clubs
≪See file “Development & Art\Activities\safe school club.xx”≫

Community-level Prevention

• Get rid of mosquitoes by eliminating standard water and covering water jars
• Get rid of open defecation, so everyone poops in a safe latrine
• See “Community Projects” in “Safe School Club”

The online game UrgentEvoke.com gives missions to students along with information packets. Can we do the same for the clubs? Unfortunately, their “safe water” mission is less than what we already want of our groups. Nevertheless, it would be great to have a suite of challenges and information packets for clubs.
Outdoor game: Team Race

Objective: This game is a fun way to test learners’ knowledge of health lessons.

What you need: space to run around

Preparation: A list of questions and answers. Examples can be found at xx.

Activity
- Divide the group into teams of 5-10 players.
- Each team chooses a runner to represent the team. The runners race to a certain point (a tree or goal post) and run back again.
- The winner gets the chance to answer a question without conferring with their team. If they answer correctly they win 1 point for their team. If incorrect, the runner in second place gets a chance to answer the same question. If that learner is also wrong, then the third gets a chance to answer, and so on.
- After the first round, a new runner from each team races. The team with the most points at the end, wins.

You may vary the type of race: backwards running, hopping, skipping, jumping.

If you play the race a second time, keep the order the same. Now anyone who won the race the first time must hop the second time.

Add teamwork topics to multi-topic activities

Keywords: Outdoor game, ...

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54 Adapted from Locks, et al., 2006 “C:/Users/David/Documents/My Dropbox/Development & Art/Games/Other games/Activity_Book_Final_Acrobat5.pdf” xxcite
**Working together content for multi-topic activities**

Remember: Most units do only one of Skits, Songs and Posters. (This unit is well suited to these activities, so you might do two of them.)

**Arts Activity: Skits**

Objectives: Students act out challenges, find solutions, and practice reminders regarding working together for safe handwashing, water, sanitation, and avoiding colds and flu in a nonthreatening and fun environment

Activity
Review the instructions in the Handwashing unit.

As always, you can ask students to make up their own skits. In addition, here are some possible scenarios regarding working together:

- The group decides to have a campaign to end open defecation, but one student says, “Those grown-ups will never listen to a bunch of kids”.
- What else?

**Arts activity: Songs**
See instructions in Handwashing Unit.

**Arts activity: Posters**
See instructions in Handwashing Unit.

**Reminder: Reinforce the habits of working together**

Objective: Create a habit of working together.

Time: 15 minutes

Preparation: none

Activity
See “Reinforce habits…” in handwashing section.

Apply the principles of creating small new habits to working together. That is, each time you remind someone to be safe, or praise someone for being safe, or check off the behaviors your class is tracking, reward yourself with a moment of celebration.

- Say a quick phrase (“Great job!”) or sing a little song
- Do a gesture of congratulations (fist pump, arms in air) or a little victory dance
- Imagine praise or the roar of the crowd excited by your victory!
Quiz

Why is it important that our classmates and neighbors:

- Wash hands with soap
- Treat their drinking water
- Use a latrine
- Cover their cough

How can we encourage our classmates and neighbors to do these safe behaviors?

- Work together
- Educate others about healthy behavior
- Be willing to ask for help when needed and accept help from others

Resources on Staying Healthy Together

NGOs with curriculum (free and online)

Child-led school health programs: How-to Guide, CRS/Ghana †
2009

**** This book has many great ideas for school health club.

The SODIS Safe School manual mentioned above describes many of activities a club can engage in.
Unit 6. MALARIA

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**Background**

In 2012, there were about 200 million malaria cases and an estimated 600,000 malaria deaths.\(^{55}\) Insecticide-treated nets can be highly effective. In regions with a lot of malaria, protecting 1000 children with nets can save about 5 lives a year.\(^{56}\)

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**Objective for Unit 6: Malaria**

- **Learning**: Students know that sleeping without an insecticide-treated bednet and having uncovered water jars and puddles helps spread malaria to themselves and their neighbors.
- **Behavior**: Students sleep under an insecticide-treated bednet and reduce mosquito breeding grounds. Students encourage others in these safe behaviors.

---

**Preparation: Assessment**

Consider these questions to assess your area’s risk of malaria. Perhaps talk to a local doctor or nurse to understand how common malaria is.

<< Ideally much of this assessment will be done at the regional level and shared with individual teachers. >>

**Incidence of mosquito-borne illnesses**

- How many students have ever had malaria? Parents?
- How common is malaria in the rainy season?
  - In the rest of the year?
- How many bug bites per night can a kid expect without a bednet? With a net?
  - In the rainy season
  - The rest of the year


How prevalent are diseases spread by daytime mosquitoes?

- Chikungunya
- Dengue fever
- Yellow fever
- In the Pacific: filariasis that causes elephantiasis?\(^{57}\)
- Other diseases spread by mosquitoes active in the daytime?

These diseases are spread by mosquitoes (*Aedes*) that are most active the few hours after sunrise and before sunset. If any of these diseases are common around here, emphasize that both

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\(^{56}\) Lengeler, Christian. "Insecticide-treated bed nets and curtains for preventing malaria." *Cochrane Database Syst Rev* 2.2 (2004).

\(^{57}\) Evening mosquitoes spread elephantiasis in Africa (*Anopheles*) and the Americas (*Culex*).
evening mosquitoes that carry malaria and daytime mosquitoes that carry these diseases are very
dangerous.

**Mosquito abatement**
- If you look at uncovered jugs of water, are there usually bugs swimming in them?
- Ask a local mosquito control expert: Is it useful to cover jugs of water and drain puddles and canisters, or are there so many breeding grounds it won’t help?

**Perceptions and beliefs**
- How do people around here think malaria spreads?
  - Adults
  - Students
    - Mosquito larva in water
    - mosquito eggs in fruit
    - contact with malaria patients
    - mosquito bites
- How do people think of mosquito bites: annoyances or dangers?
- How do adults think of malaria in children: serious annoyance or danger?
  - How many people know someone who has died of malaria in the last 3 years?

**Prevention at home: Bednets**
- How many families own a bednet?
  - How many students?
  - Among those who have bed nets, how often do they tend to use them?
- Ask students: How many slept under a bednet last night?
  - Note for areas with nets that need re-treatment: At the start of each term remind students to have their parents re-treat their bednet.

**Table: Supply and demand of different bednet types**

<table>
<thead>
<tr>
<th></th>
<th>Are these nets available near here?</th>
<th>If so, where and for how much?</th>
<th>How often used?</th>
<th>Affordable to what share of parents?</th>
</tr>
</thead>
<tbody>
<tr>
<td>bednets with no insecticide</td>
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<tr>
<td>insecticide-treated bednets that need re-treatment</td>
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<tr>
<td>long-lasting insecticide-treated bednets</td>
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</table>

**Diagnosis**
- Do people distinguish malaria from other fevers?
  - Or do people consider all fevers as “malaria”?
• Do drug sellers or doctors use rapid malaria tests?
  o How easy are rapid malaria tests to find?
  o How much do rapid malaria tests cost?
  o How common are rapid malaria tests prior to dispensing anti-malarial drugs?

Treatment
  o Where do people go for treatment for suspected malaria?
    o What symptoms cause people to seek treatment?
    o How often do adults and children get medical care for suspected malaria?
  o Is artemisinin-based combination therapy (ACT) available near here?
    o If so, what is this combination drug called?
    o Where do you get it?
    o How much do they cost?
    o Where do you get it?
  o What % is fake?
  o If you ever received treatment: Did you finish your dose the last time you were treated?
  o What other treatments are used for malaria? (pepper, tree bark, etc.)
  o How much fake anti-malaria drugs are there in private and public clinics?

Prevention in the Community
  (Note: Students can assist in this portion of the assessment.)
  o Are there many uncovered water jars in this community?
    o If so, what share of uncovered containers have bugs living in them?
  o Are there many uncovered containers or puddle in this community where mosquito larvae grow?
  o Is there any program of indoor spraying?
    o If so: How many students’ homes have been sprayed in the last 2 years? Do they know why?
    o Were all rooms sprayed, or did families resist spraying some rooms?
  o Is there a way to acquire mosquito fish or guppies?

Reminder: You are the example
Make sure you always sleep under a bednet.

Preparation

Is it possible to teach the malaria unit during the rainy season?

Change the word “antimalarial” below to the local name for the artemisin-based combination anti-malarial.

If rapid malaria tests are not available, change the instructions below appropriately.
Malaria moves from blood to mosquito to blood

Explain:
- Some germs live in our blood, like malaria. These germs cannot move. How do they get from a sick person to infect a new person?

Ask
- What do you know that grabs blood from one person, then travels to another person?
  - Mosquitoes.
- If they do not say it, give a hunt such as “buzz….”
- Ask: Why is this mosquito bright red?

Answer: It is full of somebody’s blood!

Background on malaria
- See briefing at http://www.cdc.gov/malaria/about/disease.html
- 200 million malaria cases / year
- Malaria kills > 1 million per year.
- When you have hundreds of millions (!) of parasites living in you, you are supporting tenants who do not pay rent.
  - It is harder to learn in school – or even stay awake!
  - Parents earn less.
- Symptoms include
  - A high fever (> 39°C).
  - Chills.
  - Headache.
  - Sweats.
- Fatigue.
- Nausea and vomiting.

Picture of local sick kids
Simulation: Mosquitoes spreading malaria

Objectives: Students learn how mosquitoes spread malaria and how bednets protect themselves and the community

Time: 30 minutes

What you need

- About half as many sets of cards as there are students. (For example, 10 students require 5 sets of cards.) Each set has one card that says, “Itchy”, one card that says “Malaria” and one card that says “Bednet.”
- See Appendix for sample cards.

Activity

4 children are mosquitoes, the rest are just people in the community. Everyone is told the two rules:

- For people: If you are bitten by a mosquito with malaria, you now have malaria. The mosquito will give you several Malaria cards.
- For mosquitoes: If you bit someone with malaria, you now carry malaria. The person you bit will give you several Malaria cards.
  - Explain: Mosquitoes carry malaria, but it does not hurt them – it only hurts you when they deliver it!

Round 1: The 4 mosquitoes walk around the group and each mosquito hands several people cards that say “Itchy.”

Round 1- discussion: After 30 seconds the mosquitoes should have given out their 3 cards. Pause, and ask those that received a card if having a mosquito bite is a problem. Students should mention itchiness, and that is all.

Round 2: Now one mosquito carries malaria, so it has a stack of “Malaria” cards. The mosquito with malaria hands 3 people a few Malaria cards. Then the other 3 mosquitoes walk around the group. Three of them hand 3 people cards that say “Itchy.” If one of those mosquito bites someone who has malaria cards, that mosquito takes several malaria cards. From then on, anyone that mosquito bites will receive a malaria card. (Get more malaria cards if needed.)

Round 2- discussion: After a minute or so, the mosquitoes should have given out their several cards. Pause, and ask those that received a card if having a mosquito bite is a problem.

- Most students should mention itchiness, and that is all.
- A few students should say they have been bitten by a mosquito carrying malaria and now have malaria.
Round 3: Give each student and mosquito with malaria a few more Malaria cards. Have the mosquitoes continue biting, so more mosquitoes carry malaria and more students have malaria.

Round 3- discussion: After a minute or so, the mosquitoes should have given out their several cards. Pause, and ask those that received a card if having a mosquito bite is a problem. Most students should mention having malaria. Ask the original mosquito with malaria how many cards he gave out. (It should be 3.) It should be less than the number of students with malaria. Ask the students how that happened. They should explain that a peer with malaria spread it to more mosquitoes.

Round 4: Collect all the students’ cards. Give half the students cards that say: “Insecticide-treated bednet”. Start again Round 2 again, but with one change; Any mosquito that tries to bite someone with an insecticide treated net dies and cannot bite anyone else.

Round 4 Discussion

After a minute or so, the mosquitoes should have died. Pause, and ask how many mosquito bites there are and how many have malaria. A few students should have been bitten by a malarial mosquito, but it should not have spread like in rounds 2 and 3. Ask students why there is so little malaria. They should explain nets protect those sleeping under them. Ask them why even people without nets are protected. Prompt them to understand that you are safer each time your neighbor uses a net: (1) the net keeps that person safe (so they won’t spread malaria to you) and (2) the net kills mosquitoes.

In fact, nets are not 100% safe because you are not always asleep! Thus, you need your neighbors’ help to stay safe.

How else can you minimize the # of bites you get? Prompt them to say: Long sleeves help.

Key words: Demonstration, Prevention, Malaria, Bednets
## Appendix: Cards for Mosquito Simulation

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<thead>
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<td>Itchy</td>
<td>Malaria</td>
<td>Bednet</td>
</tr>
</tbody>
</table>
Outdoor game: Mosquito tag

Objectives: Students learn how mosquitoes spread malaria and how bednets protect themselves and the community

Time: 30 minutes

Number of players: 4-30

Ages: 7-14

Time required: 15 minutes

What you need
• Room to run
• Piece of cloth or paper that represents a bednet
• Marked area that represents health clinic

Activity
Round 1
• Choose a few players to be mosquitoes. They try to tag other players. Nothing happens when you are tagged; you keep running.
• Stop Round 1 after a minute or so.

Discussion
• Boring game. With no malaria, mosquito bites are not so bad.

Round 2
• Choose a few players to be mosquitoes.
• Choose one player to have malaria

Explain:
• Any player with malaria has to sit down.
• Mosquitoes try to tag other players, both those who are running and those with malaria (that is, those sitting down).
• After a mosquito tags any player with malaria, the mosquito carries malaria.
  o Note: Pretty soon all the mosquitoes should have carry malaria.
• After a mosquito carries malaria, when that mosquito tags someone the mosquito yells “MALARIA!” The tagged person now has malaria and has to sit down.
• A player can be bitten many times.
• Note: In not too long, all the players should be sitting down.

Discussion
• Ask: How do mosquitoes start to carry malaria?
  o Malaria spreads to mosquitoes when a mosquito bites someone who has malaria.
• Ask: How do mosquitoes spread malaria?
  o After that, everyone else the mosquito bites gets malaria.
• Ask: *Is malaria easy to spread?*
  o *Malaria spreads quickly from mosquito to person and from person to mosquito.*

**Round 3**
Mark an area as “The Clinic.”
  • Mostly the same rules as round 2.
  • Now a sick player sits down, count to 3, and can then stand up and run to the clinic (show the marked area).
  • At the clinic, sick players take 5 doses of antimalarials, which means they turn in a circle 5 times. Once they have finished 5 doses (circles), they no longer have malaria and can re-join the game running around.
  • Mosquitoes are not allowed to lurk near the clinic.
  • It might be that the epidemic dies down at once. If it gets started, it should not spread as easily.

**Discussion**
  • Ask: *What happened? Were more or fewer people sick? Why?*
    o *Curing malaria is a type of prevention.*

**Round 3**
  • Mostly the same rules as round 2 – that is, no antimalarials or clinic and sick people just sit down.
  • Secretly give three people a piece of paper representing insecticide treated bednets. When a mosquito goes to tag those people, the mosquito dies.
    o Note: Players with these nets are allowed to pretend to be sick people. The mosquito dies who catches them.

**Discussion**
  • Ask: *What happened?*
  • Ask: *Did people with nets ever get sick?*
  • Ask: *Were more or fewer people sick? Why?*
    o *Each person with a bednet helps protects even people without a net. You want your neighbor to have a net to protect you.*

**Key words:** Outdoor game, Prevention, Malaria, Bednets, curing, antimalarials
**Story: My Castle**

*Objectives: Students learn to think of bednets both as protection from mosquitoes and as a fun thing to sleep under*

**Time:** 30 minutes

**What you need**

- Story book

**Ages:** 3-9 years

**Preparation**

- If necessary, translate the story.
  - Note: You can contact David Levine and he will work with you to put translated text onto the picture book. [Levine@haas.berkeley.edu](mailto:Levine@haas.berkeley.edu)

**Activity**

- For younger children: Read them the story.
- Older children can read in their language or (if appropriate) in English

**Discussion**

Ask

- Why does the hero of the story at first not use a bednet?
- What happens when the hero does not sleep under a bednet?
- Why does the hero end up liking the bednet?

**Key words:** Demonstration, Prevention, Malaria, Bednets
Classroom game: Beat the Mosquito

Objective: Demonstrate how malaria is transmitted, and that bednets can keep mosquitoes away. Emphasize the value of 100% net coverage.

What you need

You need four types of cards totaling the group size:

1. 1 card depicting a mosquito
2. Several cards depicting people ill with malaria
3. Cards depicting normal, healthy people
4. Cards depicting insecticide-treated bed-nets.

Activity

• Explain: Everybody except the mosquito keeps their cards and characters secret.

• Deal out all the cards.

• The mosquito announces who he or she is and decides whom he or she wants to bite. If the person who the mosquito chooses to bite is a bed net, the mosquito loses (as the insecticide in the net kills the mosquito). The mosquito leaves the game.

• If the person who the mosquito chooses is a healthy human being, NOTHING HAPPENS. The the game just goes on to the next round.

  • Collect the cards and deal them out again. Ask the new mosquito to bite someone.

• If the person who the mosquito chooses is has a "malaria" card (and hence is infected with malaria), then they both team up and decide whom to bite.

  o If they chose to bite a healthy person, then the healthy person becomes infected and leaves the game.

  o If they bite a bed net, the mosquito and malaria patient both lose, and leave the game.

    ▪ Remove one non-mosquito card and start a new round. Make sure at least one malaria card is left in the deck.

  o If they bite someone who already has a malaria card, they choose again.

By Gautam Srikanth
After biting someone with a net or who does not have malaria, start the next round.

- Collect the cards and deal them out again. Ask the new mosquito to bite someone.

- **Ending the game:** Continue until all but two students have left the game. (That is, all other students have either been a mosquito killed by a bednet or a healthy person infected with malaria.)

- Deal out two cards: a “bed net” card and a “healthy person” card. When the students ask who won, explain that the healthy person could not have won against malaria without a bednet, and similarly the bednet would have been of no use without the human being. Hence, both are winners.

**Discussion**

Ask:

1. **How did the mosquito become dangerous?**
   - Biting an infected person.

2. **What would happen if nobody in the game were infected with malaria?**
   - Mosquito bites would do no harm.

3. **Can we defeat malaria? How?**
   - If we all sleep under bednets.
**Experiment: Covered water jars & bugs**

**Preparation**
Check there are many uncovered water jars in the community and that most of the uncovered jars have bugs living in them. If not enough uncovered jugs or if uncovered jugs rarely have bugs, do not perform this experiment.

**Objective:** Have students show that jugs in their community need covers to avoid hosting bugs.

**Activity**

1. Identify ten or so local water jars without covers and some with covers. Count the # of jars in each group that have bugs in them.

**Optional:**
2. Add covers to the uncovered jars. Return a week later. Do they still have bugs?

**Discussion**

Why is it important to cover water jars?

**Experiment: Bug bites with and without bednets**

**Objective:** Have students count their own bug bites before and after they have bednets and see how nets protect them.

**Preparation**
Have a few students report how many mosquito bites they received in the last few nights. If the number is fewer than 10 recognizable bites, do not try this exercise.

**Activity**

- Have the class report their # of bites.
- Create a group of high-bite students.
  - Among that group: Randomly pick a few students to borrow a bednet for a few nights.
- At the end of the few nights:
  - How many bites for the median students with nets?
  - Without nets?

**Discussion**

Why did #bites / kid decline in the bednet group?
**Experiment: What kills mosquitoes?**

Q: Would it work to find some mosquito larvae and show what kills them?

Examples might include:
- Experiments with mosquito-eating fish
- Put mosquitoes in a container. Show how insecticide-treated nets kill mosquitoes
Class participation story: Bednets

Objective: Students learn that insecticide-treated (“bug-killing”) bednets keep them safe from mosquitoes.

Ages: 5-9

Time: 10 minutes

What you need:
Optional: You can make cards showing the words and sounds that go with them. These cards could be words or pictures. If possible, the reader can hold up the cue card showing the action.

Activity

Explain:

We will all read a story together. When you hear each special word in the story, make these sounds and movements.

<table>
<thead>
<tr>
<th>Special word</th>
<th>Sound that goes with it</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOSQUITO</td>
<td>“BUZZ BUZZ”</td>
</tr>
<tr>
<td>SWAT</td>
<td>swat your arm</td>
</tr>
<tr>
<td>SLEEP</td>
<td>Snores</td>
</tr>
<tr>
<td>MOMMY</td>
<td>Sweet sounds or “I love you”</td>
</tr>
<tr>
<td>BUG-KILLING BEDNET</td>
<td>Bonk head and make dying sound “achhhh”</td>
</tr>
</tbody>
</table>

Note: If helpful, write these words and the action on the board. Otherwise, practice a few times.

Read:

There are a lot of MOSQUITOES in my room.

I have to SWAT them all the time. I wish I could SLEEP.

I wish my MOMMY were here. She went to get me a BUG-KILLING BEDNET.

But without a BUG-KILLING BEDNET, I cannot SLEEP. I just sit here surrounded by MOSQUITOES. It is hard to SWAT so many.

Hey, I see my MOMMY! Beware you MOSQUITOES, she has a BUG-KILLING BEDNET!

Now the MOSQUITOES do not bother me. I crawl under my BUG-KILLING BEDNET. I am safe. I go to SLEEP.
### Appendix: Cue cards

<table>
<thead>
<tr>
<th>Special Word</th>
<th>Sound</th>
<th>Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOSQUITO</td>
<td>[Image]</td>
<td>“BUZZ BUZZ”</td>
</tr>
<tr>
<td>SWAT</td>
<td>[Image]</td>
<td>Swat your arm</td>
</tr>
<tr>
<td>MOMMY</td>
<td>[Image]</td>
<td>“Ooh, I love you”</td>
</tr>
<tr>
<td>BUG-KILLING BEDNET</td>
<td>[Image]</td>
<td>Bonk head &amp; “achhhhh”</td>
</tr>
<tr>
<td>SLEEP</td>
<td>[Image]</td>
<td>Snores</td>
</tr>
</tbody>
</table>

Option: Cut these cards out and hold them up when you read each special word.

---

http://www.atlanta.k12.ga.us/domain/3984
Classroom game: Stop the Mosquito

What you need: Real mosquito net + large room or an outdoor area

Number of players: 4 to 40

Ages: 6 and up.

Time required: 15 minutes

Activity

- Divide the kids into two teams, A and B.
  - The A team is the Mosquitoes first, and the B team are the first Kids & Doctors.
- Start Round 1
  - One A team member is the first Mosquito. The Mosquito stands at one end of a room.
  - Three students from the B team are Kid1, Kid2 and Kid3. The three Kids stand towards the other end of the room, spread out in a line across the class. Another student from the B team is the Doctor. The Doctor holds a real mosquito net and standard behind the 3 Kids.
  - The teacher says “Start.” The Doctor must protect the Kids by putting the mosquito net over them before the mosquito tags a Kid. The Mosquito is not allowed to run. (See Figure 1)
  - If the Mosquito tags a Kid before the Kid is under the net, the A team gets one point. Otherwise the B team gets one point.

Figure 1: Stop the Mosquito

The mosquito walks rapidly towards the Kids (skinny red arrow pointing left). The Doctor walks rapidly to the three Kids and covers them with the Bednet (curved blue arrow).

- Next round
  - After a round, Kid1 becomes Kid2, Kid2 becomes Kid3, a new student from team A becomes Kid1, and Kid3 becomes the Doctor. The Doctor goes to the back of the A team’s line. Also, after each round a new Mosquito replaces the old Mosquito from the B team and the old Mosquito goes to the back of the B line.
- Switching roles

60 By Gautam Srikanth
After all the A team have been Doctor and all the B team have been Mosquito, the teams switch sides and the A team take turns as Mosquitoes and the B team takes turns as Kids and the Doctor.

- Ending the game
  - After all students have been both Doctor and Mosquito, the game is over.
  - Whichever team has the most points wins!
**Simulation: Why take the Right Medicine?**

Objectives: Students learn they need to know the cause before picking a medicine

Time: 20 minutes

Ages: 6- adult

What you need

Three tools and three tasks, where each tools match only one task. For example, 3 of:

<table>
<thead>
<tr>
<th>Task</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut meat</td>
<td>knife</td>
</tr>
<tr>
<td>Eat soup</td>
<td>spoon</td>
</tr>
<tr>
<td>Spear little pieces of something round</td>
<td>fork</td>
</tr>
<tr>
<td>Dig a big hole</td>
<td>shovel</td>
</tr>
</tbody>
</table>

Activity

Have the students try to do a task with the wrong tool. For example:

<table>
<thead>
<tr>
<th>Task</th>
<th>Tool</th>
<th>How well does it work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut meat</td>
<td>Spoon</td>
<td>😞</td>
</tr>
<tr>
<td>Eat soup</td>
<td>Fork</td>
<td>😞</td>
</tr>
<tr>
<td>Spear little pieces of something round</td>
<td>Butter knife</td>
<td>😞</td>
</tr>
</tbody>
</table>

Then have them perform the task with the right tool:

<table>
<thead>
<tr>
<th>Task</th>
<th>Tool</th>
<th>How well does it work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut meat</td>
<td>knife</td>
<td>😊</td>
</tr>
<tr>
<td>Eat soup</td>
<td>spoon</td>
<td>😊</td>
</tr>
<tr>
<td>Spear little pieces of something round</td>
<td>fork</td>
<td>😊</td>
</tr>
</tbody>
</table>

Note: Pick whatever tools and tasks fit this setting. For example, the mismatch could be

<table>
<thead>
<tr>
<th>Task</th>
<th>Tool</th>
<th>How well does it work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eat rice</td>
<td>Shovel</td>
<td>😞</td>
</tr>
<tr>
<td>Dig a hole</td>
<td>Chopsticks</td>
<td>😊</td>
</tr>
</tbody>
</table>

Ah, you have to figure out the right tool for the job!

Both the flu and malaria can give fever, chills and a headache. That is why you need to take a rapid malaria test before starting antimalarials.

Only take the right medicine, otherwise you are

- Wasting money
• Suffering side effects for no benefit!

More generally, for most colds and the flu, antibiotics and other medicines do not help! As we talked about earlier, you just need rest and safe fluids for your immune system to win that fight!

Keywords: Simulation, Treatment, Malaria, Flu, Diagnose
**Simulation: Finishing doses to stop super-bugs**

Objectives: Students learn why they need to finish their medicines, even if they feel better

Ages: 6-adult

Time required: 10 minutes (?)

What you need: A deck of cards, using only 1 through 10.

Preparation

Activity

If there are a million malaria parasites in you, the first dose of medicine kills all the weak ones and most of the strong ones. You feel better. What is left in you?

The STRONG ONES.

If you don’t finish your medicine, you get super-bugs!

Everyone gets a card 1-10. The card represents a germ, and the number represents how strong it is.

“The kid takes the first dose of medicine.

• “If card is 1-7, the germ dies from first dose.
• “If card is 8-10, the germ survives, but is weakened.

“The kid takes the second dose of medicine.

• “If card is 8 or 9, then die from 2\textsuperscript{nd} dose, and 10s are very weakened.
• “How many bugs are left inside you? Only 10%! How do you think you feel?”
  o Wait for: You feel a lot better!
• “Should you stop taking your medicine?”
• “Let’s think about it: what bugs are left after 2 days?”
  o Wait for: The toughest bugs survive!

“The kid takes the third dose of medicine.”

• “If the card is 10, then even the strong germs die from 3\textsuperscript{rd} dose.”

Discussion

• Why should you finish your medicine?
• Hope they explain: Take *all* the doses of your medicine or you may get sick soon again.

  Harder to explain: Also, you are breeding super-bugs. Eventually, not even the 3\textsuperscript{rd} dose will kill them!

Keywords: Simulation, Treatment, Malaria, Complete your dose
Classroom game: I See

Objective: Students practice acting safe behaviors

Ages: 5-8

What you need: 2 or more players

Activity

- Explain that when you say “I see” the students should reply, “What do you see?”
- Then you will name a behavior, and the students should act it out.
- The behaviors can mix safe behaviors (washing hands, etc.) with silly ones (hopping on one foot, etc.).

For example:
- Teacher: “I see”
- Students: “What do you see?”
- Teacher: “I see a child:

<table>
<thead>
<tr>
<th>Silly behaviors</th>
<th>Safe behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hopping on one foot</td>
<td>Brushing teeth</td>
</tr>
<tr>
<td>Shutting their eyes</td>
<td>Washing hands with soap</td>
</tr>
<tr>
<td>Clapping hands two times</td>
<td>Using a latrine</td>
</tr>
<tr>
<td>Flapping their elbows like a chicken</td>
<td>Boiling water</td>
</tr>
<tr>
<td>Making a silly face</td>
<td>Sleeping under a bednet</td>
</tr>
<tr>
<td>Etc.</td>
<td>Etc.</td>
</tr>
</tbody>
</table>
Card game: Bedents vs. Bad Bugs

Objective: Compete to make a row of three ways water gets dirty, or 3 ways to make water safe.

Ages: 7-adult

Time: 10 minutes

What you need: Water, Water, Water uses the same rules and board as Soap or Sorry, but uses different cards.

You can print these cards or draw your own.
Classroom game: BINGO

Ages: 6 and up
Number of players: 2 or more
Time required: 20 minutes
What you need

Print out cards such as this one (but with random order of cells) for each child or 2.

<table>
<thead>
<tr>
<th>Cholera</th>
<th>Malaria</th>
<th>Flies</th>
<th>Water filters</th>
<th>Worms that live in the ground and attack you</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condoms</td>
<td>Immunizations</td>
<td>No grazing</td>
<td>Anti-malarials</td>
<td>Latrine</td>
</tr>
<tr>
<td>Boiling water</td>
<td>Diarrhea</td>
<td>Health Clinic (Free Space)</td>
<td>Cover water jugs</td>
<td>Second-hand tobacco smoke</td>
</tr>
<tr>
<td>Deworming pills</td>
<td>Mosquitoes</td>
<td>Abstinence</td>
<td>Measles</td>
<td>Improved stove with chimney</td>
</tr>
<tr>
<td>Avoid indoor smoky cookstoves</td>
<td>Shoes</td>
<td>Helmet when riding a motorcycle</td>
<td>Insecticide-treated bednets</td>
<td>Washing hands with soap</td>
</tr>
</tbody>
</table>

Clues are facts they should know about each word. The clues and words should be tightly linked to recent curriculum.

A single clue should apply to only one word. For example, do not have “Effective water treatment” be the clue for both “Chlorine” and “Boiling.” Instead, you might have “Effective water treatment with a chemical” and “Effective water treatment without a chemical”.

As you call out cells, students cross out any cell they find on their card.
Everybody gets the Free Space marked when the game begins.
Whoever gets 5 in a row (up and down, sideways, or diagonally) wins that round!

Example of 2 bingo cards at the end of one game:

<table>
<thead>
<tr>
<th>Bingo card information</th>
<th>Typical clues might include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cholera</td>
<td>Extremely serious form of diarrhea that can kill you in a day or two.</td>
</tr>
<tr>
<td>2 Condoms</td>
<td>Effective way to prevent the spread of HIV, even if you are having sex.</td>
</tr>
<tr>
<td>3 Boiling water</td>
<td>Way to make sure water has no germs in it.</td>
</tr>
<tr>
<td>4 Deworming pills</td>
<td>Way to stop parasites from living inside of you.</td>
</tr>
<tr>
<td>5 Shoes</td>
<td>Things you wear that stop worms in the ground from attacking you!</td>
</tr>
<tr>
<td>6 Malaria</td>
<td>Disease carried by mosquitoes.</td>
</tr>
<tr>
<td>7 Immunizations</td>
<td>Shots that can prevent diseases such as measles.</td>
</tr>
<tr>
<td>8 Diarrhea</td>
<td>Can be treated with Oral Rehydration Solution (ORS) OR: Comes from eating food or drinking water has poop in it.</td>
</tr>
<tr>
<td>9 Mosquitoes</td>
<td>Their bites can carry malaria.</td>
</tr>
<tr>
<td>10 Helmet when riding a motorcycle</td>
<td>Way to minimize injuries in traffic accidents.</td>
</tr>
<tr>
<td>Flies</td>
<td>Little insects that can carry poop and germs from poop in a field to your food.</td>
</tr>
<tr>
<td>No grazing / be faithful</td>
<td>A great way to avoid HIV by avoiding multiple partners.</td>
</tr>
<tr>
<td>Abstinence</td>
<td>The most effective way to stop the spread of HIV</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Cover water jugs</td>
<td>Way to stop mosquitoes from having a place to lay eggs</td>
</tr>
<tr>
<td>Measles</td>
<td>Disease that spreads very easily unless you have an immunization</td>
</tr>
<tr>
<td>Insecticide-treated bednets</td>
<td>Ways to keep malaria-carrying mosquitoes away</td>
</tr>
<tr>
<td>Water filters</td>
<td>Ways to keep water from having germs</td>
</tr>
<tr>
<td>Anti-malarials</td>
<td>Ways to treat malaria</td>
</tr>
<tr>
<td>Worms that live in the ground and attack you</td>
<td>Parasites that steal your energy</td>
</tr>
<tr>
<td>Latrine</td>
<td>Safe place to put poop</td>
</tr>
<tr>
<td>Second-hand tobacco smoke</td>
<td>Dangerous substance from cigarettes</td>
</tr>
<tr>
<td>Improved stove with chimney</td>
<td>Way to keep harmful cookfire smoke from children</td>
</tr>
<tr>
<td>Washing hands with soap</td>
<td>Ways to make sure your hands have no germs after defecating</td>
</tr>
</tbody>
</table>

- Note: Probably only fun a time or 2.
- More fun if there are small prizes.
- You can make and print Bingo cards in Excel at [http://people.uncw.edu/ertzbergerj/excel_games.html](http://people.uncw.edu/ertzbergerj/excel_games.html)
- If working with a Latin alphabet, teachers can generate printable Bingo cards for free at: [http://osric.com/bingo-card-generator/](http://osric.com/bingo-card-generator/). Typical output is:

![Bingo for Life](image)

Warning: You have to remove all punctuation ("-", ",!", etc.).

There are several ways for the leader to randomize:

- Pick one card no child is using and run down its list in order. Then look up the clue that goes with each term on your card, and call out the clue.
Because the cards use a random order, this method calls the clues out in random order.

- Pull numbered balls or pieces of paper from a bowl, use a spinner, or table of random numbers to run down the numbered list of clues.
- Cut up the clues and put them in a bowl. Then draw them in random order.
Outdoor game: The "How do germs move" Relay Race

Objective: This team game uses peer education and team spirit to reinforce the ways different germs move.

Number of players: 4-20

Ages: 7-14

Time required: 20 minutes

What you need: paper, pens, a box or basket for each team

Preparation
Divide the group into two or more teams. Each student must divide an A4 or letter-sized sheet of paper into 8 sections by folding it in half three times. Tear or use scissors to create 8 rectangles of paper. On each rectangle, the learner must write one of these 8 Diseases tokens: cold, flu, measles, malaria, diarrhea, diarrhea, diarrhea, and worms. (Note that diarrhea appears three times.)

Note: It is fine to alter the Disease tokens or How germs move
Fold the 8 rectangles in half to make Disease tokens. Place all the Disease tokens in an open box or basket to create the game basket.
Each team must create eight How germs move signs: sneezes in the air, sneezes on hands, sneezes and coughs on food, poop on hands that did not wash with soap, poopy water, poop on a fly, mosquito, & in the dirt.

Variation: instead of “How germs move” signs, do “How to prevent disease” signs:
Cover your cough, immunize, wash hands after you poop, wash hands after you sneeze, wear shoes, bednet,

Activity: How to play
Each team must stand in a queue. In front of each team are the eight How germs move signs on the ground in front of them. When the group leader shouts “Go!” the players at the front of each line run to the basket to collect a Disease token. As they run back they read the token silently, fold it again, and put it on one of the How germs move signs that does not yet have a disease on it.

These piles of paper may not be touched by the team until the end of the game. As the Disease token lands on a How germs move sign, the next team member runs to the game basket.

The running part of the game stops when all a team’s players have run. At this point the winning team must shout “SAFE!” and all sit down. If any other teams’ players are holding a Disease token, they may run back to their team and put the token in the correct pile; if they are running to the basket, they must stop.

The game continues with a check of the fastest team’s piles. The group leader must observe to ensure there is no cheating and no bullying of anyone who may have made an

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61 Adapted from Locks, et al. 2006 “C:\Users\David\Documents\My Dropbox\Development & Art\Games\Other games\Activity_Book_Final_Acrobat5.pdf”
understandable mistake. During the count, the other teams may not touch their piles. This is because they may not have lost – it is possible for the second or third team to win if the other teams have not ensured that everyone in the team knows how each germ moves. The group leader then checks the other teams’ piles. The team that finishes first, with all Disease tokens in the correct piles, wins!

<table>
<thead>
<tr>
<th>Disease or symptom</th>
<th>How germs move</th>
<th>Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td>Sneeze on hands</td>
<td>Immunize</td>
</tr>
<tr>
<td>Cold and flu</td>
<td>Sneeze on hands</td>
<td>Wash hands with soap</td>
</tr>
<tr>
<td>Cold and flu</td>
<td>Sneeze and cough on food</td>
<td>Cough and sneeze in your elbow</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Poop on hands</td>
<td>Wash hands with soap</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Flies spreading poop</td>
<td>Poop in a latrine</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Poopy water</td>
<td>Boil or chlorinate or filter</td>
</tr>
<tr>
<td>Worms</td>
<td>Pooped on the dirt and wait for you to walk on them</td>
<td>Shoes</td>
</tr>
<tr>
<td>Worms</td>
<td>Pooped on the dirt and wait for you to walk on them</td>
<td>Poop in a latrine</td>
</tr>
<tr>
<td>Japanese Encephalitis</td>
<td>Mosquitos</td>
<td>Bednets</td>
</tr>
<tr>
<td>Malaria</td>
<td>Mosquitos</td>
<td>Bednets</td>
</tr>
</tbody>
</table>

Note: Highlighted items sharing a color are repeated in a column. The game works best if tokens are used only once, but it is ok to have repeated signs on the ground.
**Card game: Fishing for Health**

**Objective**
A card game similar to Go Fish where players match health hazards (mosquitoes, dirty hands, contaminated water, measles, intestinal worms, etc.) to appropriate preventions (bed nets, soap, etc.). For example, “I have Mosquitoes. Do you have a Bednet?”

**Players:** 2 to 6 (3 or 4 are best)

**Ages:** 5 and up

**Time needed:** 20 minutes

**What you need:** A deck with two types of cards:
- Health hazards such as mosquitoes
- Preventions such as bednets that match each hazard
- A 40-card deck will work.

**How to play**

**To start**
- Deal 4 cards to each player (if 3-6 players), or 6 cards if 2 players.
- Place remaining cards face down as a draw pile.
- Any player with both a Hazard and the matching Prevention in their hand makes a pair, tells everyone what the pair is, and puts the pair in front of them. The player draws another pair of cards, continuing until no hand contains a matching pair.
- Select a player at random to go first.

**Game play**
The first player asks another player for a specific Prevention for any Hazard that the first player holds or for a Hazard that the first player can Prevent. For example: “Sarah, I have Mosquitoes, give me your Bednets.” If Sarah has more than one Bednet card, she must offer the first player all of them. The first player can take no more than he or she can use that turn (for example, no more Bednets than his or her hand has Mosquitoes).

If the first player gets one or more cards from the player you ask, that player gets another turn. The first player can ask any player for any card that pairs with one he or she already holds, including the same card the first player just asked for.

If the person has none of the cards the first player requested, he or she says, “Go fish.” The first player then draws the top card from the draw pile.

If the first player happens to draw the card he or she asked for (that is, “fished your wish”), that player announces the pair, puts the pair face up, and gets another turn. However, if the first player draws a card that's not what he or she asked for (even if it makes a pair), it becomes the next player's turn. The first player keeps the drawn card.

The player who said, “Go fish” then takes a turn.
Winning

*Fishing for Health* continues until either someone has no cards left in their hand or the draw pile runs out. The winner is the player who has put down the most pairs of Hazards and matching Preventions.
**Card game: Memory**

Memory, also known as Concentration, is a card game that teaches what prevents certain health hazards. For example, the player who turns over Mosquitoes has to remember where another player had previously turned over a Bednet.

- **Players**: 1 to 6
- **Ages**: 5 and up
- **Time needed**: 10 minutes

**What you need:** A deck of printed cards with

- Health hazards such as mosquitoes
- Preventions such as bednets that match each hazard

- **Topics covered**: matching health hazards (mosquitoes, dirty hands, contaminated water, measles, intestinal worms, smoky cookstoves, indoor smoking) to appropriate preventions (bed nets, soap, etc.).
- **Goal**: To collect the most pairs of cards.

**How to play**

**Setup**

Shuffle the cards and lay them on the table, face down, in a pattern (e.g. 4 cards x 13 cards).

**Gameplay**

The youngest player goes first. Play then proceeds clockwise.

On each turn, a player turns over two cards (one at a time) and keeps them if they are a Hazard and the matching Prevention. If the player successfully matches a pair, that player also gets to take another turn.

When a player turns over two cards that either are identical (for example, 2 mosquitoes) or do not match, those cards are turned face down again and it becomes the next player’s turn.

**Winning**

When all the pairs have been found, the player with the most pairs wins.
**Card game: Health Lotto**

**Ages**
- Basic version: ages 5-8
- Advanced version: ages 7-12

**Objective:** Cover up all face-up cards

**Number of players:** 2 to 20

**Equipment**
- Deck of cards with 2 or more of each Prevention per player.
- Advanced version: 1 Hazard per player and 1 or more Prevention per player

**Preparation**
- Give each player 5 different Prevention cards (1 Bednets, 1 Soap, etc.).
- Players arrange their Preventions face up in front of them.
- Decide who goes first

**Variations**
- Deal each player a set of 5 cards at random, so some players will have duplicates face up
- Older players can start with more than five face-up cards

**How to play (basic version)**
- The first player draws one card.
  - If the drawn card matches an uncovered card the player has, the player covers the matching card.
  - If there is no match with an uncovered card, the player returns the card to the bottom of the pile.
  - The turn moves to the left.

First player to cover all their face-up cards wins!

**Advanced variation (ages 7-12)**
- Deal out one of each Hazard to each player. Leave the deck with only Preventions. Players must draw the matching Prevention so they prevent (cover up) each Hazard. First player to “prevent all their hazards” (that is, cover all their face-up hazard cards) wins!
  - Variation: Deal out a mix of hazards and preventions. The deck also contains a mix of hazards and preventions. Players must draw the prevention to match each hazard and the hazard to match each prevention.
    - note: Unlike “Go fish,” there is no matching from the initial deal.
Add Malaria content to multi-topic activities

Arts: Skits, Poster, & Song on malaria topics

Objective: Reinforce bednet usage

Activity
Ask students to make a skit, poster and/or song on malaria, preventing malaria and treating malaria.
See details of each activity in Handwashing Unit.

Possible scenarios about malaria include

- The actors act as mosquitoes in a village with no bednets, and then in a village with bednets.
- Drama version of the mosquito simulation:
  - Scene 1: A group of mosquitoes spread malaria, showing how the disease spreads from kid to kid.
  - Scene 2: Then most the kids have insecticide-treated nets, and the mosquitoes act out their own dramatic death – with minimal disease for the kids!
- One family does not use bednets and a kid gets malaria.
  - Then, even a few kids who sleep under a net gets bitten, just before bedtime.
  - The kids search near the new case to find out who started the local epidemic.
  - All the families now at risk teach the first family to use a net.
- Monkey and Chimp story: “All Alone”
- My Castle
- A mother is worried her children are often sick with malaria. (if not too scary: She has heard that some children can even die from the disease.) Somehow she learns of nets. Perhaps a challenge to get money for nets. She gets nets. Kids are healthier.

Reminder: Expand prior Class agreement

Objective: Increase bednet usage

Time: 10 minutes

What you need: Prior class agreement form

Activity
Ask students how knowledge of malaria will affect the class contract. See if there is a consensus similar to: We will all sleep under a bednet each night.

If families find nets expensive, perhaps the rule is: I will ask my parents for a bednet. If I own one, I will sleep under a bednet each night.
Reminder: Reinforce the habit of Bednet use

Objective: Create a habit of sleeping under a bednet.

Time: 15 minutes

Preparation: none

Activity

See “Reinforce habits…” in handwashing section.

Apply the principles of creating small new habits to covering sleeping under a bednet. That is, each time you prepare the bednet for use or tuck under a bednet, reward yourself with a moment of celebration.

- Say a quick phrase (“Great job!”) or sing a little song
- Do a gesture of congratulations (fist pump, arms in air) or a little victory dance
- Imagine praise or the roar of the crowd excited by your victory!

Practice explaining about bednets

Objective: Have students practice explaining to a younger sibling why it is important to use a bednet.

Time: 10 minutes

Ages: 7 and up

Activity

Have students practice explaining to a younger sibling why it is important to sleep under a bednet.

Have students give feedback to each other to make sure the basic lessons are covered:

- Malaria is a serious disease
- Mosquito bites cause malaria
- If we sleep under bednets, we can avoid malaria
- If you sleep under a net, then I am safer.

Existing Health Club adds malaria topics

Ask students if their new knowledge of malaria adds to the list of club projects. Candidates they might suggest include:

- Community assessment
- Fight against mosquitoes
  - Get rid of mosquitoes by eliminating standing water and by covering water jars
  - Question: Should we teach all children to cover water jars at home?
- Campaign for bednets
  - Remind each term for parents to re-treat bednets with insecticide (unless it is a net with long-lasting insecticide built in)
  - A group of students could circulate at bedtime singing the bednet reminder song, for example.

**Classroom game: Alternate reality version 1 and 2 xx**

**Assessment: Household survey to engage family on malaria topics**

Objective: Students bring a brief assessment home to spark a discussion of malaria topics with their parents and family

What you need: Short assessments for each child to bring home

Activity
- Students bring an assessment home on malaria topics
- Parents sign off on assessment and the child returns the assessment

Ages: Literate students (or parents)

Time: 5 minutes in class to distribute and 5 minutes to collect (or 20 minutes, with discussion).
Dear parent:

We would like your child to circle an answer to each question.

Please put your name or mark to show your child has talked about their answers with you.

Student’s name ___________________

1) At home your child has access to a bednet for sleeping.
   Always  Usually  Sometimes  Rarely  Never

2) Has your child explained to his or her younger siblings why it is important to sleep under a bednet each night?
   Yes  No  There are no younger family members

Option: Should we have a more open-ended question such as “What are obstacles to bednets at your home?” The student won’t write down many of the replies, but such questions spark better discussions.

<<Note: If the student did a poster, you can add>>

3) Your child shared the poster with your family and discussed its message.
   Yes  No

Parent’s signature or mark ____________________

Discussion

• Remind each term for parents to re-treat bednets with insecticide (unless it is a net with long-lasting insecticide built in)

• Ask How did you parents treat the assessment?
  o What did you have a chance to explain from what you have learned?
  o For families with no nets: Do parents have more interest in acquiring a bed net?

• How did it go teaching younger family members?
<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Question</strong></td>
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<tr>
<td>Why is a neighbor who does not sleep under a bednet a health problem for you?</td>
</tr>
<tr>
<td>How can you stop mosquito bites at night</td>
</tr>
<tr>
<td>What should you do before you take an Anti-malarial</td>
</tr>
<tr>
<td>What is the best type of bednet?</td>
</tr>
<tr>
<td>How can you stop mosquitoes from growing?</td>
</tr>
<tr>
<td>What are two diseases spread by mosquitoes?</td>
</tr>
<tr>
<td>What disease causes a fever that often returns each 3 days</td>
</tr>
<tr>
<td>What are the symptoms of malaria?</td>
</tr>
<tr>
<td>How often should regular insecticide-treated nets be re-treated?</td>
</tr>
<tr>
<td>What should you do if you think you have malaria?</td>
</tr>
<tr>
<td>If you start anti-malaria medicine, how long do you have to take it for?</td>
</tr>
</tbody>
</table>
| What are ways you can make your community safer? | 1. Lobby for bed nets  
2. Lobby for retreatment of nets  
3. Encourage eliminating standing water  
4. Get rid of standing water and cover water jugs |
Quiz Game: Jump to Identify What Makes a Mosquito Happy or Sad

Objective: Identify behaviors to avoid mosquitoes

Time: 20 minutes

What you need:
- Chalk (or equivalent) to draw a line in the dirt

Preparation:
- Draw a line in the dirt long enough for every student to stand next to it

Activity:
- Have the students stand on the line.
- Tell them that you will be reading a list of items.
  - Jump to the left of the line when they think the object or behavior makes mosquitoes happy.
  - Jump to the right of the line when the object or behavior makes the mosquitoes sad.
- Objects and behaviors that make mosquitoes happy:
  - Open water jars
  - Puddles and standing water
  - Sleeping without a bednet
  - Neighbor that sleeps without a bednet
  - Old, untreated bednets
  - Puddles
- Objects and behaviors that make mosquitoes sad:
  - Sleeping with a bednet
  - Covered water jugs
  - Insecticide treated bednets
  - Long-lasting bednets
  - Mosquito fish and guppies
**Resources on Malaria**

**Videos (free and online)**

**** Science video with lots of advice on avoiding mosquitoes

https://www.youtube.com/watch?v=dnugDchZL10

ages: Secondary school

** Public service announcement (English, east Africa)

https://www.youtube.com/watch?v=_8_hszXX0SA

For kids explaining mosquitoes spread malaria.

**Computer games (free and online)**

**Play the Mosquito Game** (Nobel Foundation) online game

**STOP MALARIA NOW! - Online Mosquito Game**

Nightmare: Malaria game (free app for Apple iPhones & Android devices)


You are in the bloodstream of a young girl infected with malaria. Can you make it out alive? Can you use bednets and your wits to avoid killer mosquitoes?

**Comic books (free and online)**

**Novartis (drug company) Malaria storybook**


**WHO comic book on malaria**


**Curriculum (free and online)**

Lots of activities at http://www.malaria.novartis.com/

**NGOs**

Nothing But Nets is a great NGO distributing bednets. http://nothingbutnets.net/

Roll Back Malaria is a global program http://www.rbm.who.int/. Their country reports are at http://www.rbm.who.int-multimedia/progress-and-impact-series.html
Unit 7. ACCIDENTS AND FIRST AID

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Background

Injuries lead to more than five million deaths every year, as well as a tremendous burden of disability.62
• Approximately 1.4 million of these deaths occur on roads.63 Wearing a motorcycle helmet can prevent lot of those deaths.64
• Another 300,000 people died from accidental poisoning.65
• Fires kill roughly 265,000 and leave millions more with lifelong disabilities and scars.66

Objectives

• Learning: Students know how to prevent common accidents (burns, poisons, motorcycle head injuries) and how to provide basic first aid for bleeding and stopped breathing.
• Behavior: Students review their school and home for common hazards (poisons, sharp objects, burn hazards).

**Preparation: Assessment**

How important are the following sources of accidents around here:

- Burns
  - From cookfires
  - Other
- Motorcycle accidents
  - With no helmet
- Poisoning

Is there a law requiring a motorcycle helmet?

How often do students or their families ride motorcycles (perhaps as passengers)?
Reminder: You are the example
Make sure you always wear a motorcycle helmet.

Discussion: Accident causes

Objective: To understand the causes of common accidents and injuries and ways to prevent them. To lightly review basic first aid.

Time: 60 minutes

Age range: 9-16

What you need: Printed scenarios with first aid advice

Discussion questions

Explain
- Today we are going to talk about common accidents that cause injuries and ways to prevent them.

Ask (5 minutes)
- What are common accidents that happen in this community? Think about accidents that can happen in their homes, school, the neighborhood, and the streets.

Some examples they are likely to provide:
- Burns (from fires, stoves, hot water)
- Cuts (from broken glass, knives,
- Falls (from tripping, climbing high places such as trees and roofs)
- Poisoning (bleach, pesticides)
- Drowning (in ponds, rivers, open wells)
- Car, motorbike, and bus accidents
  - Harm to drivers, passengers, and pedestrians
Demonstration: Why are motorcycle helmets important?

Objective: To understand the value of motorcycle helmets.

Age range: 9-16

Time: 10 minutes

What you need: Motorcycle helmet, ripe melon, plastic bag.

Activity

• Ask: What happens in a motorcycle accident?
  ○ You fly off the bike

• That’s right, you fly through the air and hit the ground.

• Ask: Where is the worse place to land?
  ○ On the head

Let’s act that out. This is Bob. [hold up a melon] Bob had a helmet on.

• Put a head-sized melon in a sealed plastic bag in a motorcycle helmet. Make sure the melon fits snugly. Then hurl the helmet+melon at the ground so the helmet lands with the top facing down.
  ○ The melon should be intact.

Great news! Motorcycle accidents do not need to break your skull! No worries!

Oh, that’s not realistic? You don’t usually wear a helmet?

• Take the melon-in-bag out of the helmet and hurl it at the ground.
  ○ The melon should crack and be gross.

Where do you want your brain to be?

• Who wants to eat this melon?

≪Note: Link to video xx≫

Keywords: Demonstration, safety, prevention, motorcycle helmet
**Demonstration: Stopping a fire**

Objective: show that first need air

Age range: 7-adult

Time: 5 minutes

What you need: matches and a cup. A bit of fuel.

If you are on fire, the fire eats oxygen.
- Demonstration: light a match or small stick and take away oxygen by putting it under a cup or glass jar.
  - Compare with a match or burning stick in the air.
  - Show a fire grow when you blow lightly on it.
- If you run, you give the fire lots of air!
- Instead, stop, drop and roll!

Have kids practice dropping and rolling.

**Simulation: Why cool a burn – Egg demonstration**

Objective: show why to cool a burn

Age range: 7-adult

Time: 5 minutes

What you need: 2 raw eggs, a timer, and a way to boil water. Cold water.

Activity
- Cook two raw eggs for 3 minutes.
- Take them both out, and plunge one into cold water.
- Break them open.
- Is the egg that went into cold water much softer?
- Explain:
  - That is why we want to cool a burn – it undoes some of the damage!
Arts: First Aid Skits

Objective: students act out first aid.

Age range: 9-adult

Time: 50 minutes

What you need: printed scenarios of accidents

Split the students into groups of three. Give each group a scenario that they will perform as a role-play.

- that first act out the accidents,
- for scenarios 1-3: identify a way that the accident could have been prevented and act that out
- for all scenarios: act out treating the injury

Give them 15 minutes to practice. (15 minutes)

Have each group present their two role-plays. After each one, give all of the students a chance to brainstorm other ways to prevent the accident. Also give the students some basic first aid tips for each scenario (see below). Allow seven minutes for each presentation, group discussion, and first aid lesson. (25 minutes)

Scenario 1: Accident on a motorbike

Scenario 1: Bob is riding a motorcycle with Ann behind him. The road is slick, so when Charlie crosses the road they brake hard. Bob and Ann fly off the motorcycle.

1A) Ann lands on her head, but is not badly hurt. Why not?
She wore a motorcycle helmet

1B) Bob’s head is fine, but he ends up lying on the ground with a broken leg.

Prevention aid advice for motorcycle accidents
- Slow down when it is muddy or wet!
- Always wear a helmet

First aid advice for a broken bone
After any major injury, there could be damage to the body that we do not see, so do not move the person. Cover them with a blanket to keep them warm, try to stop any major bleeding, and GET HELP QUICKLY.

Broken bones should be treated at a health center or hospital. In the meantime, try to keep the

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67 Largely adapted from GCE Curriculum, Oct. 2012.xx
broken bone from moving by putting cushioning or padding around it. Raise the broken bone above the heart (if possible) and apply ice to prevent swelling.

Scenario 2: burn

Hazima’s mother is cooking yams over an open fire. Hazima and her sister come home from school and are hungry. Hazima goes to the fire and reaches to grab a piece of yam, but the yam is hot. As she pulls her hand away, she touches the iron on the stove and burns her arm.

Prevention advice burns
Look around the home for cookfires and hot water. How can these be made safer?

First aid advice for a burn
- Cool the burn immediately, using cold water.
  - Do not cover with butter, grease, powder, etc. as these may cause infection.
- For large burns, seek treatment at a health center or hospital.
- For smaller burns, cover loosely with a bandage and check periodically to make sure it is healing
  - If it is getting red, swollen, or larger it may have an infection. Go to a health center or hospital.
- Do not break any blisters that form.

Scenario 4: poisoning

Habiba’s mother was almost out of laundry detergent, so she put the little bit that she had left in an empty soda can and threw out the bottle. Habiba was really thirsty after playing in the sun with her brother, so she grabbed the can and started drinking quickly, only to discover it was detergent and not soda.

Prevention

Ask: How can we reduce poisonings of children?
Discuss how you can look around the home for poisons that children can reach.

First aid advice for poison
- GET HELP QUICKLY.
- Drink lots of water or milk to dilute the poison.

Scenario 4: Cut from broken glass

Mary is climbing a tree in the village after school. Her younger sister comes to tell her that their mother wants her home to help prepare dinner. Mary jumps out of the tree, like she does every time she climbs this same tree. She doesn’t see the broken glass from a bottle that someone threw in the road the night before, and she lands on it and cuts her foot.

First aid advice for cuts
You can treat most small wounds at home.

- Stop any bleeding by applying pressure to the wound for 5 minutes or more, for instance by putting a napkin over it and then pressing until the bleeding stops or slows enough to bandage.
- Elevate the wound above the heart, if possible.
- Have the wounded person remain calm, so their heart beats less often.

Once the bleeding has stopped:

- Wash the wound thoroughly with clean water and soap.
- Cover the wound with a clean pad of cloth, bandage, and antiseptic ointment if you have it.
- Go to a health center or hospital if you have not been immunized against tetanus, as glass, rusty metal, etc. can cause tetanus.

Then:

- Wash the wound and change the bandage twice a day.
- If the wound gets red, swollen, or spreads, it is probably infected and you need to go to a health center or hospital.

**Scenario 5: stopped breathing**

**Ages: 12 and above**

Your neighbor is visiting and suddenly stops falls to the ground and stops breathing. You call his name, but he does not respond.

**First aid advice for stopped breathing**

When an adult unexpectedly collapses, stops breathing and is unresponsive, he or she is probably having a heart attack. In that case, do 2 things:

1. **Call for an ambulance**
2. **Push hard and fast on the middle of the person’s chest 100 times a minute until the ambulance arrives.**
   
   ![Link to video](xx)

If a child has the same collapse and lack of breathing, or a drowning victim, you have 3 jobs to do:

1. **Call for an ambulance**
2. **Push hard and fast on the middle of the person’s chest 100 times a minute until the ambulance arrives.**
3. **Every 30 seconds or so, breathe deeply, plug the other person’s nose, and then puff that air into the other person’s mouth.**
   
   ![Link to video](xx)
Add first aid content to multi-topic activities

Skits, Poster, & Songs on first aid topics

Objective: Reinforce accident prevention and first aid lessons

Activity
Ask students to make a skit, poster and/or song on preventing accidents and on first aid. See details of each activity in Handwashing Unit xx.

Existing Health Club gets first aid

See Health Club activities in chapter xx.

Ask health club members if there are possible club projects related to reducing accidents. Candidates they might suggest include:

- Community assessment
  - Burns
  - Poisons
- Prevention
  - Prevent children getting burned in the fire
  - Motorcycle helmets
  - Put poisons away from children & clearly mark poisons (fertilizer, pesticides, detergents, etc.)
  - Etc.
- Teach first aid treatment to parents, other students, etc.

Integrate family with first aid topics

Practice explaining about motorcycle helmet

Objective: Have students practice explaining to a younger sibling why it is important to use a motorcycle helmet.

Time: 10 minutes
Ages: 7 and up

Activity
Have students practice explaining to a younger sibling why it is important to wear a motorcycle helmet. Have students give feedback to each other.

Assessment: Household assessment to engage families

Each student receives a form similar to:
Dear parent:

We would like your child to circle a reply to each question. Please put your name or mark to show your child has talked about these answers with you.

Student’s name ___________________

1) Your child has inspected the home for poison risks and suggested ways to make the house safer
   Yes   Yes, but no recommendations   No

2) Your child has inspected the home for burn risks and suggested ways to make the house safer
   Yes   Yes, but no recommendations   No

3) Has your child explained to his or her younger siblings why it is important to always wear a motorcycle helmet?
   ○ Yes   No   There are no younger family members

<<Note: If the student did a poster, add:>>

4) Your child shared the poster with the family and discussed its message.
   Yes   No

Parent’s signature or mark ___________________
## Quiz

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
</table>
| What is the treatment for a burn?             | • Cool the burn down immediately, using cold water  
• For large burns, seek treatment at health center or hospital  
• For small burns, loosely cover with a bandage and regularly check to see if its healing |
| What is the treatment for bleeding?           | • Apply pressure to the wound for 5 minutes or more, by putting a napkin over it and then pressing until the bleeding stops or slows enough to bandage  
• Wash the wound with clean water and soup  
• Cover the wound with a clean pad of cloth, bandage, and antiseptic ointment if you have it |
| What are the signs that a burn or wound is infected? | • If the burn is getting red, swollen, or larger |
| What is the treatment for possible poisoning? | • Get help quickly  
• Drink lots of water or milk to dilute the poison |
| What is the treatment for someone who stopped breathing? | • Call for an ambulance  
• Push hard and fast on the middle person’s chest 100 times a minute until the ambulance arrives |
| What are three ways to prevent accidents people should do more of around here? | • Wear a motorcycle helmet  
• Inspect surroundings for poison risks  
• Inspect surroundings for burn risks |
| What should someone do whose clothing is on fire? | • Stop  
• Drop  
• Roll |
**Quiz Game: Corners—Run to the Corner for the Correct Treatment Step**

Time: 20 minutes

What you need:
- Room with four corners

Activity:
- In this game, you offer four alternative answers. Students choose the answer they think is correct by going to the appropriate corner of the room.
- When they find out which ‘corner’ was the correct answer, those students who chose wrongly sit down.
- The game continues until only one student remains standing – the winner.
- Start with treatment for a burn:
  - Step 1:
    - Upper left corner: place the burn under cold water
    - Upper right corner: place the burn under warm water
    - Lower left corner: if the burn is small, go to the hospital
    - Lower right corner: if the burn is large, cover the burn with a bandage
  - The students who ran to the upper left corner stay in the game
  - Step 2:
    - Upper left corner: regardless of the size of the burn, tightly compress the burn with your hand
    - Upper right corner: if the burn is small, loosely cover the burn with a bandage. If the burn is large, go to the hospital.
    - Lower left corner: regardless of the size of the burn, wrap the burn with a bandage
    - Lower right corner: regardless of the size of the burn, go to the hospital
  - Students who ran to the upper right corner stay in the game
- Treatment for bleeding:
  - Step 1:
    - Upper right corner: Immediately bandage the area
    - Upper left corner: Apply pressure to the wound for 5 minutes with your hand
    - Upper right corner: Apply pressure with your napkin for one minute
    - Upper left corner: Apply pressure for at least 5 minutes by putting napkin on it and pressing until bleeding slows enough to bandage
  - Students who ran to upper left corner stay in the game
  - Step 2:
    - Upper right corner: Wash the wound with water from the local river
    - Upper left corner: Wash the wound with water from the latrine
    - Lower right corner: Immediately bandage the wound.
    - Lower left corner: Wash the wound with clean water and soap
  - Students who ran to the lower left corner stay in the game
  - Step 3:
    - Upper right corner: Cover wound with your clothing
- Upper left corner: Leave wound open to dry out
- Lower right corner: Cover wound with a clean pad of cloth, bandage, antiseptic ointment
- Lower left corner: Cover wound with cloth but do not put ointment on the wound
  - Students who ran to lower right corner stay in the game

- Treatment for possible poisoning
  - Upper right corner: Push hard and fast on the person’s chest 100 times
  - Upper left corner: Have the person lie down on their back and rest
  - Lower right corner: Call for an ambulance and have the person drink lots of water or milk
  - Lower left corner: Make sure the person eats a lot of food to dilute the poison
    - Students who ran to the lower right corner stay in the game

- Treatment for someone’s who has stopped breathing
  - Upper right corner: Call an ambulance. Sit the person up and shake them until the person starts breathing.
  - Upper left corner: Call an ambulance. Push hard and fast on the middle person’s chest 100 times a minutes until ambulance arrives
  - Lower right corner: Call an ambulance. Pour water down the person’s throat so they stay hydrated.
  - Lower left corner: Call an ambulance. Leave the person alone until the ambulance comes.
    - Students who ran to the upper left corner stay in the game.
Resources on Safety & First Aid
Online resources

**** WebMD
For general diagnosis: http://symptoms.webmd.com/#introView
Ages 11-adult
WebMD is a website with valuable information on many diseases and first aid.

**** Free Android app for first aid from the American Red Cross
Ages 11-adult
http://www.redcross.org/mobile-apps/first-aid-app

Videos (free and online) First aid

A first aid training video for first responders
** ages 13-adult (graphic bleeding)
https://www.youtube.com/watch?v=iL0m5XRkdtg

Helping someone who stopped breathing

Controlling bleeding
https://www.youtube.com/watch?v=a2zwU2c-HZo

Videos (free and online) Safety for kids

Meena. It Could Happen to Anyone: Keeping children safe from accidents
https://www.youtube.com/watch?v=dT9XZfRMGxw
***** ages 5-adult; 14:26
This video combines a great character (Meena) with an interesting plot and important lessons on road safety avoiding sharp objects.
Also in Bangla https://www.youtube.com/watch?v=SwWKRSo49DY

GreenLight Traffic safety cartoon
** Ages 5-10
https://www.youtube.com/watch?v=1bh9NFeXFIU

GreenLight - Walking along the road cartoon
https://www.youtube.com/watch?v=UMVZfqV2nMI

Road Safety, Traffic Rules - Animation for Kids cartoon
https://www.youtube.com/watch?v=T4-Fjm_CCmU
**Poison Control Center: STOP! Ask First**
** ages 5-12, animation, 6 min.**
[https://www.youtube.com/watch?v=YZO-drzD1_M](https://www.youtube.com/watch?v=YZO-drzD1_M)

**Computer games (free and online)**

This collection of online road safety games will help children and families to learn about keeping safe while out and about, whether walking, cycling or travelling by car - think road safety!


Other road safety games.

**Comic books (free and online)**

***** **Meena. It Could Happen to Anyone: Keeping children safe from accidents**
Ages 5-12;
[http://www.unicef.org/rosa/Rosa_meena_It_could_happen_to_anyone.PDF](http://www.unicef.org/rosa/Rosa_meena_It_could_happen_to_anyone.PDF)
This comic book combines a great character (Meena) with an interesting plot and important lessons on road safety avoiding sharp objects.

*** **CDC coloring book  Color Me Safe**
Almost all the 26 lessons A to Z apply in poor nations.
Unit 8. PREVENTION, DIAGNOSIS AND TREATMENT

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Objectives

- **Learning**: Students know how to diagnose cases that need a malaria test, antibiotics, or just rest and safe water.
- **Behavior**: Students encourage others to use antimalarials and antibiotics only when needed, and to complete their dose.
**Preparation: Assessment**

The curriculum assumes:
- rapid malaria tests are available
- students have access to mobile phones, a watch, or other clock to time breathing
- ACT (artemisinin-based combination therapy) is available to treat malaria

The curriculum assumes there are not:
- shots to prevent flu are available
- medicines to fight flu are available
- Other common and serious viruses near here such as Japanese encephalitis that should be mentioned

Modify the curriculum if these assumptions are incorrect.

Localization questions:
- What is the local brand name for ACT (combination therapy) for malaria?
- What is the local name for Paracetamol? (Also known as Tylenol or Acetaminophen)
- Where should students and their families go for
  - Diagnosis of bacterial pneumonia
  - Diagnosis of strep throat
- Go to clinic if diarrhea remains xx more days.

Note: Modify the instructions below accordingly if there are or are not rapid tests for bacterial pneumonia and/or strep throat. If no rapid tests, then recommend treatment with the right symptoms.

If counterfeit drugs are a problem at private clinics or drug stores, but less so at public clinics, make that point.

- What care do people expect from a doctor? For example, drugs, an injection, or an IV drip?
**How your body fights germs**

- Getting a germ is an invasion.
- Happily, your body has an entire army, called the “immune system” to defend itself.
- If your body is strong and healthy, it can defeat many invaders before they enter!
- Ask: What keeps your body healthy and your army strong?

Student answers, or you can fill in:

- **Eat healthy, nutritious food**
  - If relevant: Get vitamin A supplements
  - Keep the nutrition, without letting worms eat it!
- Get enough sleep; at least 8 hours each night for most students.
- Exercise
- Special shots called “immunizations.”

So, what are “immunizations”?

Imagine an enemy army attacking, and you do not know from what direction. They can often win, right?

How about if you knew the exact time and place they would arrive, and you could get there first? Who would win?

So if your army knows all about an invader, it can win!
Classroom Game: Germ Wink

Objective: Teach how the immune system works, and how immunizations strengthen it.

Time: 30 minutes (?)

What you need
- Place to sit in a circle.
- Set of cards, 2 of which are marked distinctively.

Activity

**Round 1**: Children sit in a circle. The teacher hands out cards to each player. One card is marked “Germ,” one is marked “Immune system,” and the rest are marked “Cell.” (Or use a deck of cards with the Ace of Spades the Germ and the Ace of Hearts the Immune system.) The Immune System announces who they are, but the Germ keeps their identity a secret. The Germ can “infect” other players (the Cells) by making eye contact and winking at them. If a Cell player is winked at, he or she feigns sudden death and is removed from the game.

Cells are not allowed to wink. The objective of the Germ is to infect as many cells as possible.

The Immune System’s job is to correctly identify and accuse the Germ, minimizing the number of infected cells. A limit is often imposed upon the number of accusations the Immune System can make.

Variation: The Immune System eliminates players by pointing at them. If they are Cells, as they die they say, “But you killed an innocent cell!” If the Immune System eliminates the Germ, it can act out a grisly death scene to end the round.

Variation: If a Cell is infected, it also becomes a Germ and starts to infect other Cells. When the Immune system recognizes any Cell, it recognizes them all and the round is over.

Discussion: Note how it can take a while for the Immune System to identify the invader and then to eliminate it.

**Round 2**: The game starts over with all cells and germs alive. The same player is the Germ. The Immune system, of course, can immediately identify the Germ, so this round is very rapid!

Discussion: Note how quickly the body gets rid of familiar invaders!

**Round 3 - Immunization**: Pick a new Germ at random, but the Germ walks in with a blindfold on. The Immune system quickly learns who the germ is, but nobody gets winked at.

---

Round 4: The new Germ returns, with no blindfold. But the Immune system, of course, can immediately identify the Germ, so this round is very rapid!

Discussion

Immunizations show the immune system a harmless version of a germ or a piece of a germ so that the immune system will recognize the real thing. When the real infection arrives, the Immune System crushes it! Immunizations are awesome!

Curative care

If your body’s army knows about an enemy, victory can be quick. That is why it is important that everyone get immunized – it teaches your body what the enemy looks like so your immune system can win before you even get sick!

If your body does not know an enemy, it takes a few days (for a cold) or weeks (for flu and Dengue fever) to learn how to defeat the enemy.

- Stay home
- Rest
- Drink lots of safe fluids

Sometimes medicines can help. But you can only take the right medicine if you know the diagnosis – that is, what is wrong.

Remind students of: Simulation: Why take the Right Medicine? If you have not run that simulation, you can insert it here.

For bacterial infections like strep throat and some pneumonia, antibiotics kill the bacteria (but not your cells).

- If you have trouble breathing or breath really fast, get tested for pneumonia
- If your throat is incredibly sore, get tested for strep throat

For most viruses like cold and flu, rest is all you need to do (and all you can do). Cold and flu germs do not mind antibiotics.

- What would you think of a doctor who sold expensive medicines even if it is cold or flu, so the medicines do not help.
  - DO NOT BE FOOLED!

- What would you think of parents who want expensive medicines even if it is cold or flu, so the medicines do not help.
  - DO NOT BE FOOLS!
Sometimes the enemy tricks the immune system so it never recognizes the germ as “foreign.” Important examples include:

- Worms in your gut
- Malaria
- TB
- HIV

You need medicines to get rid of these germs.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia from bacteria in your lungs</td>
<td>If you are having trouble breathing or breathing rapidly</td>
</tr>
<tr>
<td>Strep throat</td>
<td>If your throat is incredibly sore and red, usually with white dots</td>
</tr>
<tr>
<td></td>
<td><strong>Get treated (or tested)</strong></td>
</tr>
<tr>
<td>Malaria</td>
<td>If you have a high fever</td>
</tr>
<tr>
<td>TB</td>
<td>If you have a cough for &gt; 2 weeks</td>
</tr>
<tr>
<td>HIV</td>
<td>If you have had sex without a condom (other than with a faithful partner)</td>
</tr>
<tr>
<td></td>
<td><strong>Get tested</strong></td>
</tr>
<tr>
<td></td>
<td><strong>If the test says you have this illness</strong></td>
</tr>
<tr>
<td></td>
<td>Malaria</td>
</tr>
<tr>
<td></td>
<td>TB</td>
</tr>
<tr>
<td>HIV</td>
<td><strong>If you have a virus</strong></td>
</tr>
<tr>
<td></td>
<td>Mild virus like a cold (low fever, cough, headache, low energy)</td>
</tr>
<tr>
<td></td>
<td>Serious virus such as flu or Dengue fever (high fever, feel terrible)</td>
</tr>
<tr>
<td></td>
<td><strong>Special case</strong></td>
</tr>
<tr>
<td></td>
<td>Worms</td>
</tr>
</tbody>
</table>

Antibiotics

Antimalarials called "Fill in local name xx"

Antibiotics for a long time

HAART "Fill in local name xx"

Rest and drink safe fluids. Paracetamol can help you feel better.

Rest and drink safe fluids. Paracetamol can help you feel better.

Deworming pills every few months

You will feel better in a few days. Otherwise go to the clinic.

You will feel better in a few weeks. Otherwise go to the clinic.
## Medical school

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>What is probably wrong?</th>
<th>What care do you recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td>A high fever, chills, and no energy</td>
<td>Malaria or a virus such as the flu</td>
<td>A rapid malaria test at a drug store or clinic</td>
</tr>
<tr>
<td>And a positive malaria test</td>
<td>Malaria</td>
<td>Artemisinin-based Combination antimalarial for all the doses they give.</td>
</tr>
<tr>
<td>And a negative malaria test</td>
<td>Flu or other virus such as Dengue fever</td>
<td>Rest and drink safe fluids. Tylenol can help feel better.</td>
</tr>
<tr>
<td>A runny nose, a slight fever, a mild sore throat, and is a bit tired</td>
<td>A cold virus</td>
<td>Rest and drink safe fluids</td>
</tr>
<tr>
<td>A high fever, rapid and painful breathing, and a cough that hurts</td>
<td>Pneumonia</td>
<td>Go to the clinic. If they decide it is probably bacterial pneumonia, take all the antibiotics they give.</td>
</tr>
<tr>
<td>High fever and a very sore throat that is bright red with some white patches</td>
<td>Strep throat</td>
<td>Go to the clinic. If they decide it is bacteria causing strep throat, take all the antibiotics they give.</td>
</tr>
</tbody>
</table>

See file «Medical School»

**Simulation: The New School Doctor**

See android app: Prognosis: Your Diagnosis

Prognosis: Respiratory

«OR»

**Computer Game: The New School Doctor**

«See computer game: The New School Doctor»
**Activity: The New School Doctor + Act out symptoms and diagnose**

**Objective**
By playing the roles of school doctor and patient, students learn (1) when antimalarial drugs are helpful (and the role of a rapid malaria test); (2) when antibiotics are helpful; and (3) when all they can do is rest and relieve symptoms.

**Preparation**
*Make sure local medical professionals have checked the recommendations in this section. The specific “Medical school” and “Symptoms checklists” you should use depends on the mix of diseases, local preventions and cures, etc.*

**What you need**
- “Medical school” handout for each “doctor” or “nurse”
  - Include list of available tests: Malaria, etc.
- “Symptoms” checklist

The doctor treats one patient at a time.
- The patient should act out – without using words – the their symptoms.
  - The patients have to think how to act out a mild headache versus a severe headache.
  - Note: The teacher can have class decide how to act out each symptom (for younger kids)
  - Note: Go wild if you get to act out convulsions!
- The doctor can ask yes/no questions.
  - The patient should act out a response when possible, or nod Yes or No.
- The doctor can order a medical test.
  - The teacher acts as the laboratory, reporting results from the test. For example, “The malaria test shows no malaria.”

Q: Do we give doctors a “medical chart” to track symptoms and give hints what to ask?
- How can this game work if students cannot read?
  - What of the content below can be turned into pictures?

---

69 Melanie Cernak suggested making this a game where the patients cannot talk.
Fever symptom flowchart

Fever?

Malaria Test?

Positive for malaria

Take all the antimalarials the clinic gives

Low fever, often with one or more of: a stuffy nose, headache, mild cough, and low energy. A cold usually feels better in a few days.

Hard to breath or rapid breathing?

Yes

Go to clinic. Probably pneumonia?

Yes

Take all the antibiotics in a dose

No

Sore throat?

Yes

Gargle with warm salt water can help the sore throat

Negative

No

Rest and drink safe fluids. Paracetamol can help you feel better.

Extremely sore & red with white dots?

Yes: Strep throat

No

Yes

Rest and drink safe fluids. Paracetamol can help you feel better.

Hard to breath or rapid breathing?

No

Go to clinic. Probably pneumonia?

No

Sore throat?

No. Usually flu or another virus such as Dengue fever. It often takes two weeks or more to feel better.
Outline for Diagnosing Fever

Do they have a fever?

- Yes: Is it a high fever?
  - Yes: Take a malaria test
    - Positive malaria test: Give antimalarials. Explain to finish the dose.
    - Negative malaria test: Is it hard to breathe or do they have rapid breathing?
      - Yes, trouble breathing: Go to clinic and test for bacterial pneumonia
        - Yes (or if not test for bacterial pneumonia): Give antibiotics. Explain to finish the dose.
        - No: Probably viral pneumonia. Go to next line
      - No trouble breathing: Do they have a sore throat?
        - Yes sore throat: Gargle with warm salt water. Dissolve half a teaspoon of salt in one cup of safe water. Spit the water out after gargling.
        - Is the throat really sore and red (usually with white dots)?
          - Yes: Give antibiotics for strep throat
          - No: Go to *
        - No sore throat: Go to *
    - * They might have a flu or other virus such as Dengue fever. It may take 2 weeks or longer to get well. Go to **
  - No sore throat: Go to *
  - ** They might have a flu or other virus such as Dengue fever. It may take 2 weeks or longer to get well. Go to **
  - Low fever: They probably have a cold. They will probably feel better in 2-3 days. Go to **
  - No: go to ** unless a high fever develops.

** Rest and drink safe fluids. Paracetamol may help you feel better.

- Explain safe fluids = water that has been boiled, filtered or chlorinated
- Potential lesson:
  - Where is an injection in this chart? NOWHERE!
- Q: What about counterfeit drugs? (put in needs assessment)
  - Lessons we should teach?
- How can we differentiate whether a clinic has ability to diagnose bacterial strep or pneumonia?
  - Do you need to go to the hospital for diagnosis?
  - Should bacterial strep be diagnosed by comparing pictures of sore throats with and without strep? Or is that what local clinics do?

Explain that selling costly drugs or injections for a cold or flu means the doctor is ripping you off.
# One-page medical school for fevers

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>What is probably wrong?</th>
<th>What care do you recommend</th>
<th>What prevention do you recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td>A high fever, chills, and exhausted</td>
<td>Malaria or a virus such as the flu</td>
<td>Gat a rapid malaria test at a drug store or clinic</td>
<td></td>
</tr>
<tr>
<td>And a positive malaria test</td>
<td>Malaria</td>
<td>Take combination antimalarial for all the doses they give.</td>
<td>Sleep under a bed net</td>
</tr>
<tr>
<td>And a negative malaria test</td>
<td>Flu or other virus such as Dengue fever</td>
<td>Rest and drink safe fluids. Paracetamol can help you feel better.</td>
<td>Wash hands with soap Avoid smoky cookstoves</td>
</tr>
<tr>
<td>A runny nose, a slight fever (37.6°C), a mild sore throat, and is a bit tired</td>
<td>A cold virus</td>
<td>Rest and drink safe fluids. To help the sore throat, gargle with salty water.</td>
<td>Wash hands with soap</td>
</tr>
<tr>
<td>A high fever, rapid and painful breathing, and a cough that hurts</td>
<td>Pneumonia</td>
<td>Go to the clinic. If their tests show it is pneumonia from bacteria, take all the antibiotics they give. If their tests show it is pneumonia from a virus, rest and drink safe fluids. Paracetamol can help you feel better.</td>
<td>Wash hands with soap Avoid smoky cookstoves</td>
</tr>
<tr>
<td>High fever and a very sore throat. Usually the throat is bright red with some white patches.</td>
<td>Strep throat</td>
<td>Go to the clinic. If their tests show it is strep throat from bacteria, take all the antibiotics they give. If their tests show it is a sore throat from a virus, rest and drink safe fluids. Paracetamol can help you feel better. Gargle with salty water.</td>
<td>Wash hands with soap</td>
</tr>
</tbody>
</table>

Note: replace Paracetamol and combination antimalarial with local brand names.
<table>
<thead>
<tr>
<th>Visual symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>A high fever</td>
</tr>
<tr>
<td>A slight fever</td>
</tr>
<tr>
<td>(37.6°C)</td>
</tr>
<tr>
<td>Chills</td>
</tr>
<tr>
<td><img src="http://www.illustrationsof.com/1098836-royalty-free-smiley-clipart-illustration" alt="Image" /></td>
</tr>
<tr>
<td>A bit tired</td>
</tr>
<tr>
<td><img src="http://www.aperfectworld.org/emotions.html" alt="Image" /></td>
</tr>
<tr>
<td>Exhausted</td>
</tr>
<tr>
<td><img src="http://simfonikasih.net/?paged=112" alt="Image" /></td>
</tr>
<tr>
<td><img src="http://teachsweeps.blogspot.com/2013_03_01_archive.html" alt="Image" /></td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>A runny nose</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Cough</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Cough that hurts</td>
</tr>
<tr>
<td>Rapid and painful</td>
</tr>
<tr>
<td>breathing</td>
</tr>
<tr>
<td>A mild sore throat</td>
</tr>
<tr>
<td>Very sore throat.</td>
</tr>
<tr>
<td>Throat is bright red with some white patches.</td>
</tr>
<tr>
<td>Rest</td>
</tr>
<tr>
<td>Drink safe fluids.</td>
</tr>
<tr>
<td>Tylenol</td>
</tr>
<tr>
<td>Gargle with salty water.</td>
</tr>
<tr>
<td>Sleep under a bed net</td>
</tr>
<tr>
<td>Wash hands with soap</td>
</tr>
<tr>
<td>Avoid smoky cookstoves</td>
</tr>
<tr>
<td>Headache</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>Yellow pill</td>
</tr>
<tr>
<td>Pill bottle</td>
</tr>
<tr>
<td>Malaria test</td>
</tr>
</tbody>
</table>
**Activity: Diagnosing problems with vision and hearing**

What you need
- A smart phone or tablet with apps that diagnose hearing and vision problems.
- Headphones
- Paper to record results

Ages: Any age. (Requires 2-4 literate students to act as testers.)

Preparation
- Train two students to be the class “eye doctors.”
- Train two students to be the class “ear doctors.”

Note: If testers are not available, the teacher can act as tester.

Create a reporting form similar to:

<table>
<thead>
<tr>
<th>Student</th>
<th>Interesting results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Activity
During another activity, pairs of students are called out of the group to visit the eye doctors and the ear doctors for tests.
- The eye doctors test kids one at a time using the Android device.
- The ear doctors test kids one at a time using the Android device.

If you have only one device, test students one at a time.

Both the students and the teacher get a report of any interesting findings.

Follow-up tests
The teacher should re-test students who have interesting results to confirm possible problems.

**Helping those with limited hearing or sight in the classroom**
If possible, move students who have trouble seeing at a distance or who have trouble hearing to the front of the class.

**Improving sight or hearing**
If there is medical care available:
• Refer students to clinics or NGOs that may be able to provide eyeglasses or hearing aids.
  o For example, sometimes The Lions Club and Rotary sponsor free hearing aids.
• For children who have trouble reading: If a low-cost pair of glasses is available locally, encourage the family to purchase one. Magnifiers often cost only $1 or so.
• Again: *Move children who have trouble seeing the board or hearing to the front of the room.*

Otherwise:
• If there are enough smart phones: Try using the smart phones to assist in:
  o Reading: Use a smart-phone magnifying glass app
    ▪ For example: “Your Magnifying Glass”
  o Distance vision: Use a smart-phone zoom app
  o Hearing: Use a smart-phone hearing aid app
• Does the appropriate app help the student?

Otherwise:
• For students who have trouble seeing close up:
  o For a temporary fix, consider making a home-made magnifying glass. Directions are at:
    ▪ [http://www.science-sparks.com/2012/05/21/make-your-own-magnifying-glass/](http://www.science-sparks.com/2012/05/21/make-your-own-magnifying-glass/)
      • Easy, but would spill on reading material
A person who can see at a distance but not as well close up can use a pin to punch a hole in cardboard. They can peek through the hole to read small type.\(^{70}\) This method works best in bright light.
You can even just curl your index finger or peek through the little diamond you make between your fingers like this:\(^{71}\)

By using a pinhole magnifier,

- people who normally see things fuzzily at a distance will be able to see them clearly;
- people who normally see things fuzzily close up will be able to see them clearly.

These pinhole lenses work especially well for computer and tablet screens.

**For students who have trouble hearing, consider making a home-made ear trumpet.**

To make a simple ear trumpet, get a piece of paper, scissors and tape or glue. Roll your paper into a cone so that the small end about 5 cm. wide and the wide end is 15-20 cm. Hold the small end to your ear. (Do not stab the cone into your ear.) Then tape or glue the edges of the paper. Does the ear trumpet help? Note: Some people find the trumpet works better if you cover the other ear.

Cut a large piece of cardboard into this shape. Roll it into a cone. Tape, staple or glue the cone.

---


\(^{71}\) [http://www.exploratorium.edu/snacks/pinhole_magnifier/](http://www.exploratorium.edu/snacks/pinhole_magnifier/)

Hearing and vision screening as a club project
If there are local resources to help improve limited sight or hearing, then hearing and vision screening is a great club project.

- At school
- Among elders
- In the community
Outdoor game: Doctor dodge ball

Objective: Silly game to remind people infections spread.

What you need: A few wads of paper or other soft objects for each of 2 teams.
- Option: A “medicine chest” which is an area or box, filled with tokens or paper representing cures.

Preparation: Mark off two territories with a dividing line between them.

How to play

Explain:

- Each team has a territory they have to stay within, with a dividing line in between.
- Each team has a few germs [balls] to throw. Germs are wads of paper or other soft objects.
- If a player is hit, he or she becomes infected. Infected players have to sit down and not move or play.
- One player on each team is the Doctor. The Doctor can touch sitting players and they receive antibiotics and are healed. Healed players can stand up and rejoin their team.
- If the Doctor is hit, he is infected [and has to sit for xx seconds / sing the xx song / or whatever].
  - Option #1: If the doctor is hit, the other team wins.
  - Option #2: If the doctor is hit, he is out of the game. His or her team has xx minutes to try to win by hitting the other side (or all get infected, and their team loses).

Note: It should be possible to alter the game to include more specific hazards and cures.

Variation: Each ball has a name of a disease. Clearly label each wadded paper with the name of a disease.

- Variation A: Doctor has to name the right cure. (Doctor can run back to the “medical book” to look up the right cure.)
  - OR
- Variation B: Doctor has to run to the “medicine chest” and get the right cure, tag the sitting player and run the medicine back to the medicine chest.
  - OR
- Variation C: Doctor can carry one cure at a time. If the person was hit by a different disease, the Doctor has to run to the “medicine chest” and get the right cure.
**Outdoor game: Diagnosis Dodge ball**

Objective: Teach you have to give the right medicine.

What you need:
- A few wads of paper or other soft objects in three colors.
- 3-5 different hats or flags or pieces of paper. These can be marked Cold, Flu, Malaria, etc.

Preparation: Mark off a circle that is barely big enough to throw the wads of paper most the way across it.

Activity

Explain:

There are wads of paper in different colors.
- Blue is antibiotic (cures Bacterial pneumonia)
- Red is antimalarial (cures malaria)
- Green is Paracetamol and rest (make you feel better with Flu)

**Round 1: No malaria test or knowledge of pneumonia**

- Take one third of the players inside the circle. They are Germs.
- Each Germ gets a secret piece of paper saying what type of Germ they are:
  - Flu
  - Bacterial pneumonia or
  - Malaria
- The rest of the kids are Healthy and stand around the circle.
- Each Germ grabs one kid from around the circle. That kid is Infected.
- Each Germ holds hands with the Infected kid the Germ selected. The Germ+Infected kid can move around inside the circle. The Germs try to avoid being hit by a piece of paper of the right color. The Infected kid does not need to cooperate, but cannot stop the Germ from moving (as long as they still hold hands).
- If a Germ is hit by the right color wad, the Germ is out and the formerly Infected kid is cured and joins the Healthy kids outside the circle throwing wads of paper inside.
  - If a Germ is hit and cannot see the Wad of paper, the Germ can ask the Healthy kid who threw the paper what color it was.
  - If a Germ is hit by a different color Wad, nothing happens.
- If the Healthy kids want more Wads of paper, they can run into the circle to get them back, but they cannot throw until they are outside the circle.
- The game is over when all Infected kids are Healed.
Discussion
- How long did it take? How many Germs were hit by the wrong Wads of paper? How did it feel?
- What would speed up curing everyone?
  - If you knew what germ it was
    - How can you know malaria? (malaria test)
    - How can you recognize likely pneumonia? (rapid and painful breathing)

Round 2: Medical tests
- As before one third of the players get a Germ hat, flag or paper.
- As before there are germs with different pieces of paper, but now Healthy people can see the papers so know if each germ is:
  - Flu
  - Bacterial pneumonia or
  - Malaria
- Play the game again.

Discussion
- Was it more fun to be a thrower in the first round or the second round?
- How did germs feel when the wrong Wad hit them?
- How did players feel when they made a great shot with the wrong Wad of paper?
- Did everyone get healed more rapidly? Why?
  - In this game if the Healers give the wrong medicine they just waste a few seconds to pick up a new Wad. What if it took a day to walk to the clinic + a day’s earnings to buy a Wad of paper? What then?

Option: Count # of times Healthy have to come retrieve wads of paper.
Or do something so there is a cost to medicines.
**Card game: Health Spoons**

The game Health Spoons can be played with 3 or more players,

**What you need**

A deck with hazards, preventions and cures (such as unsafe water, filter, and ORS), preferably with 8 or more hazards.

A number of spoons totaling one fewer than the number of players.

**Preparation**

The spoons are placed in the center of the table in a circle with handles pointing outward so that they may be easily grabbed by any of the players.

One person is designated first dealer and deals three cards to each player. The dealer will draw from the remaining cards.

**Play**

Once everyone picks up their cards, the dealer selects the top card from the draw pile and then discards one card to the right, face down on the table. The next player picks up the dealer's discarded card, discards a card to the right, and play continues with the next player. The last player discards card into a "discard pile", while the dealer continues to select cards from the original pile.

A player is not allowed to place a discarded card in their hand until they have discarded one, so a pile can build up before a slow player. Each player is trying to make their three cards into a matching set of hazard, prevention and cure (such as unsafe water, filter, and ORS). A player should keep cards that are most likely to produce a matching set.

No player may have more than 4 cards or fewer than 3 cards at any given moment. Players must hold their cards in their hand.

As soon as any player has a matching set of hazard, prevention and cure, he or she should take a spoon from the pile in the middle of the table. As soon as any player grabs a spoon from the pile of spoons, any other player is allowed to take a spoon as well. This usually causes a mad grab for spoons leaving one player empty handed.

The player who ends the round without a spoon drops out of the game and one spoon is removed for the next round. The game continues with a new dealer until only one person remains.
Card Game: The Race to Nairobi xx
Add diagnosis & treatment content to multi-topic activities

Skits, Poster, & Song on diagnosis & treatment topics

Objective: Reinforce good diagnosis & treatment

Activity
Ask students to make a skit, poster and/or song on diagnosis & treatment
See details of each activity in Handwashing Unit.

Possible situations:
- Monkey and Chimp story, “Getting Tired Out”
- A family is very poor and their child is sick. Grandfather insists the parents buy the child antibiotics, though it may mean the rest of the family does not eat for a day or 2. An older sibling is not sure that antibiotics are needed.
- Evil pharmacist sells unnecessary drugs. The kids show he is not doing the right tests. They teach the community (or one poor family) to reduce expensive over-treatment.
- Ignorant pharmacist sells unnecessary drugs. The kids show he is not doing the right tests. They teach him how to test, diagnose, and then recommend the right treatment.

Existing Health Club gets diagnosis & treatment topics

Ask students if their new knowledge of diagnosis & treatment topics adds to the list of club projects. Candidates include:
- Community assessment
- Informational campaigns
  - Avoid over-use of antimalarials
  - Avoid over-use of antibiotics
  - Finish your dose

Assessment: Household survey to engage family with diagnosis & treatment topics
- Assessment
- Talked to younger siblings
- If they did a poster: discussed with family
- Etc.

Discussion
- Ask How did you parents treat the assessment?
  - What did you have a chance to explain from what you have learned?
  - Do parents have more interest in the soapy bottle?
- How did it go teaching younger family members?

Alternate reality version 1 and 2 xx
### Quiz

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the downsides of taking antibiotics when not necessary?</td>
<td>Expensive and ineffective</td>
</tr>
<tr>
<td></td>
<td>Can have side effects like diarrhea</td>
</tr>
<tr>
<td>Why do you need to finish all the assigned days of a medicine?</td>
<td>Build up resistance to antibiotics if you do not finish your dosage. The germs become stronger and less curable.</td>
</tr>
<tr>
<td>What is the difference between a cold and malaria? How should you treat each one?</td>
<td>• <strong>Cold</strong>: runny nose, slight fever, mild sore throat, fatigue, negative malaria test</td>
</tr>
<tr>
<td></td>
<td>• Rest and drink safe fluids</td>
</tr>
<tr>
<td></td>
<td>• <strong>Malaria</strong>: high fever, chills, no energy, positive malaria test</td>
</tr>
<tr>
<td></td>
<td>• Take a malaria test</td>
</tr>
<tr>
<td></td>
<td>• If positive, take antibiotics</td>
</tr>
<tr>
<td>When should you go to the doctor?</td>
<td>If you are having</td>
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<td></td>
<td>• trouble breathing,</td>
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<tr>
<td></td>
<td>• high fever, or</td>
</tr>
<tr>
<td></td>
<td>• very sore throat</td>
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</table>
**Classroom Game: Quiz Show**

Objective: This game is an opportunity to test your learners and review the knowledge they have gained. It also helps them work as teams and makes discussion about health fun!

Time: 30 minutes

**What you need**
Large piece of paper or on the chalk board

**Preparation**
- Decide about 5 categories of questions.
- Identify about 5 questions in each category, ranging from easy to difficult.
  - Sample questions are below.
- On a large piece of paper or on the chalk board, make a grid with the category titles on top, and then put the numbers 100, 200, 300, 400 in the columns below. You can choose which categories to include or make up your own.

The grid should look like this (after 3 plays):

<table>
<thead>
<tr>
<th>Diseases</th>
<th>How diseases spread</th>
<th>Prevention</th>
<th>Cures</th>
<th>Bonus</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>200</td>
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<td>300</td>
<td>300</td>
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<td>300</td>
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<tr>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
</tbody>
</table>

**Activity**
1) The game rates the difficulty of questions and therefore the knowledge of the individual learner or team. You can use the questions below or create your own questions. It is best to research and collect questions and answers over the course of the term or year, and not the session before playing the game!
Questions must be:
- in categories, like the chapters in this book
- in equal number for each category
- given a point value. The more difficult the question, the more points it should have. For example, in the ABC category, the question, ‘What does ABC stand for?’ rates only 100 points. A more complicated question such as, ‘List all eight steps in using a female condom,’ might have a rating of 400 points.

3) Divide the learners into teams; about 3-5 learners per team.

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73 Adapted from Lindsey Locks, Miles Canaday and Beza Tesfaye, 2006 *Games and Activities*, http://www.sekoloprojects.org/images/uploads/Activity_Book_Final_Acrobat5.pdf
4) Ask the first team to pick a category and a number value. Each box should have a matching question on your paper. Before reading the question, draw a big X in the box that the learners chose. This means that no one else can pick this box, because there is only one question per box.

5) Read the question the learner chose, and allow the team to discuss and answer the question. If the team answers correctly, they earn the number of points in the box. For example, if they chose Prevention for 100, the question might be, “What prevents poop from spreading on fingers?” If the learners answer, “Wash hands with soap” they receive 100 points.

Option: The group leader has the option of giving bonus points, so if they also add: “after using the latrine and before eating meals” they receive and extra 50 points.

6) If the first team answers incorrectly, the second team gets a chance to ‘steal’ the points if they can answer the same question correctly. If they are also wrong, then the third team can try, and so on.

7) After the first question, give the second team a chance to pick a box and answer the question, and repeat the same for each team. Play continues in order, despite who wins the points.

8) The team with the most points at the end of the game wins!

Example questions

<table>
<thead>
<tr>
<th>Diseases</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>What disease causes dots on your face</td>
<td>Measles</td>
</tr>
<tr>
<td>200</td>
<td>If you have a runny nose but not a fever, do you have a cold or a flu?</td>
<td>Cold</td>
</tr>
<tr>
<td>300</td>
<td>What disease causes a fever that often returns each 3 days</td>
<td>Malaria</td>
</tr>
<tr>
<td>400</td>
<td>What is a disease that causes a terrible diarrhea that can kill in less than 2 days</td>
<td>cholera or typhus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How diseases spread</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>What is a disease flies carry from poop to food?</td>
<td>Either: Diarrhea, cholera, or typhus</td>
</tr>
<tr>
<td>200</td>
<td>What are two diseases that can spread when someone sneezes on your food?</td>
<td>Two of: Cold, flu or measles</td>
</tr>
<tr>
<td>300</td>
<td>What source of illness spreads by lurking on the ground and waiting for someone to step there?</td>
<td>Worms</td>
</tr>
<tr>
<td>400</td>
<td>What are two diseases spread by mosquitoes?</td>
<td>Malaria and Japanese encephalitis (or any of several parasites, if you have taught about them.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>How can you stop mosquito bites at night</td>
<td>Sleep under a bednet</td>
</tr>
<tr>
<td>200</td>
<td>What are 2 key times to wash hands with</td>
<td>Any of: After pooping, after</td>
</tr>
<tr>
<td></td>
<td>soap?</td>
<td>sneezing, before preparing food, after cleaning a baby’s bottom, before eating</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>300</td>
<td>What is the best type of bednet?</td>
<td>Long-lasting and insecticide treated</td>
</tr>
<tr>
<td>400</td>
<td>How can you stop mosquitoes from growing?</td>
<td>Get rid of standing water and cover water jugs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Cures</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>What cures worms?</td>
<td>Deworming pills</td>
</tr>
<tr>
<td>200</td>
<td>What can cure diarrhea and cholera</td>
<td>ORS or Oral rehydration solution</td>
</tr>
<tr>
<td>300</td>
<td>What should you do before you start to taking an anti-malarial after you get a fever?</td>
<td>Rapid malaria test</td>
</tr>
<tr>
<td>400</td>
<td>What are the ingredients of oral rehydration solution (ORS)</td>
<td>Clean water, salt, sugar, and baking soda</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Bonus</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Name 2 ways to make drinking water safe</td>
<td>2 of: Boil, filter, chlorine, solar disinfection</td>
</tr>
<tr>
<td>200</td>
<td>Why is open defecation by a neighbor a health problem for you?</td>
<td>Because germs in the poop can flow to your water or be carried by flies to your food!</td>
</tr>
<tr>
<td>300</td>
<td>Why is a neighbor who does not sleep under a bednet a health problem for you?</td>
<td>Even if you sleep under a net, mosquitoes sometimes are out before bedtime and can bite you.</td>
</tr>
<tr>
<td>400</td>
<td>Who is the best teacher about health in the world?</td>
<td>(NOTE: All groups get a chance to answer this question.)</td>
</tr>
</tbody>
</table>
**Quiz Game: Diagnosing**

Tell the students the Symptoms. Let them reply with “What is probably wrong?” and “What care do you recommend?”

Your little brother has

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>What is probably wrong?</th>
<th>What care do you recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td>A high fever, chills, and no energy</td>
<td>Flu or malaria</td>
<td>A rapid malaria test at a drug store or clinic</td>
</tr>
<tr>
<td>And a positive malaria test</td>
<td>Malaria</td>
<td>Combination antimalarial for all the doses they give.</td>
</tr>
<tr>
<td>And a negative malaria test</td>
<td>Flu or another virus</td>
<td>Rest and drink safe fluids. Tylenol can help feel better.</td>
</tr>
<tr>
<td>A runny nose, a slight fever, a mild sore throat, and is a bit tired</td>
<td>A cold</td>
<td>Rest and drink safe fluids</td>
</tr>
<tr>
<td>Bad diarrhea for the 2\textsuperscript{nd} day in a row</td>
<td>Diarrhea. If \textit{really} bad, maybe even cholera</td>
<td>ORS. Go to clinic if diarrhea remains xx more days.</td>
</tr>
<tr>
<td>Rapid and painful breathing, a slight fever, a cough that hurts</td>
<td>Pneumonia</td>
<td>Go to the clinic. If they decide it is from bacteria, take all the antibiotics they give.</td>
</tr>
<tr>
<td>Fever of 39.5\textdegree C, low energy, and a very sore throat that is bright red with some white patches.</td>
<td>Strep throat.</td>
<td>Go to the clinic. If they decide it is bacterial, take all the antibiotics they give.</td>
</tr>
<tr>
<td>Fever of 37.4 with a sore throat that looks a bit swollen.</td>
<td>Probably a cold.</td>
<td>Rest and drink safe fluids</td>
</tr>
<tr>
<td>Fever of 38.2\textdegree C and a runny nose</td>
<td>Probably a cold</td>
<td>Rest and drink safe fluids</td>
</tr>
</tbody>
</table>

- What are the downsides of taking antibiotics when not necessary?
- Why do you need to finish all the assigned days of a medicine?

**Review**

Ask students the main lessons they have learned in this unit. Ask follow-up questions so they cover the objectives (see quiz).