

WATER EDUCATION



TEACHER MANUAL



AGUAYUDA

Clean Water + Shared Knowledge = Flourishing Communities

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YOU

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How to Use This Manual

This manual is designed to be used as a training guide for teachers, community leaders and others interested in teaching their communities about water education. Each topic has a lesson plan outline that may include the following as applicable:

- + Preparation required
- + Step by step procedure of the lesson including exercises
- + Posters
- + Key points

This manual will provide the teachers the necessary information and guidance required to conduct the water education workshops for the community. Through the manual, various symbols are used which are explained below:



Poster: A poster from the student manual is used here..



Question: An important question that the students should answer.



Marker: Information to be written on a flip chart.



Demonstration: Teacher and/or student demonstrates information.



Group Activity: Students work together on an exercise, task or game.



Key: Essential knowledge from the lesson that the students should have learned.

During all lessons a flip chart (black board, poster paper) and markers should be available.

Through the education committee, we encourage that the lessons are expanded and new topics added. Please feel free to pass these new additions on to us so that we can consider them for inclusion in updates of this manual.

We also realize that some lessons may be more relevant than others for your community. Feel free to teach what makes most sense in your situation.

We wish you great success and fun in your water education workshops!

A. INTRODUCTION

1. WATER CYCLE

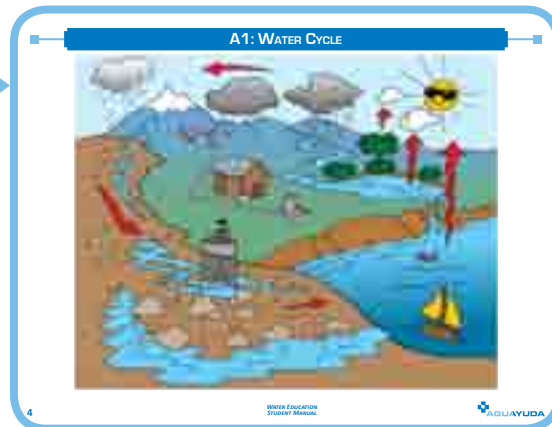
a. What is the water cycle?

Present the poster:

Water Cycle



1. The Earth has a limited amount of water. Water is in continuous movement on, above and below the surface of the Earth.
2. Water exists as moisture in the air, creates clouds and falls as rain.
3. Rainwater is one source of drinking water. Rain feeds rivers, lakes and ponds and eventually reaches the ocean.
4. Lakes and rivers are surface waters which is another source of drinking water.
5. Some water seeps into the ground and is stored underneath the earth's surface in aquifers. There are both shallow and deep aquifers. This is known as groundwater which is also used as drinking water.
6. Finally, water in the ocean and on land evaporates and the cycle begins again.



- ✚ **The water cycle is the continuous movement on, above, and below the surface of the Earth.**
- ✚ **Drinking water comes from three main sources (groundwater, surface water and rainwater).**

A. INTRODUCTION

2. WATER EDUCATION

a. What is water education?

Write the following categories on the flip chart:

- + Importance of having safe drinking water
- + Dangers of drinking and using unsafe water
- + Proper hygiene practices
- + How to prevent water-related illnesses
- + Cooking with safe drinking water
- + Conservation and storage of water
- + Sanitation



Present the poster:

Water Education

Discuss each drawing and ask the students what comes to mind when they look at each drawing.

Be sure to conclude with the idea that with proper water education, everyone can live a healthy and productive life.



+ With proper water education, everyone can lead a healthier and more productive life.

A. INTRODUCTION

3. SANITATION

a. What is sanitation?

Sanitation is the proper disposal of waste water and trash.

b. What is waste water?

Waste water is used water from various sources including:

- + Toilet / Latrine
- + Bathing
- + Kitchen
- + Laundry
- + Industry
- + Agriculture

c. What are the problems with waste water and trash?

When waste water and trash are not properly disposed they can contaminate:

- + Clean water supplies
- + Rivers, lagoons, ocean
- + Ground water
- + Ground, soil, dirt
- + Environment

Harmful effects of contaminated water sources due to improper disposal of waste water:

- + People become sick and/or have skins problems.
- + It is harmful to the wild life (fish, shrimp, birds, animals, etc.), crops and the environment.



Present the poster:

What Health Threats Do You See?

Create 3 groups and write the following questions on the flip chart. Have each group answer one of the following questions. Allow about 10 minutes for group discussion, then each group shares their conclusion with the class.



**Group 1: What types of water usage are shown here?**

- + Bathing
- + Water consumption (via buckets)
- + Providing water for animals
- + Washing laundry

**Group 2: What examples of improper sanitation are shown here?**

- + Child is urinating into the river.
- + Child is defecating outside near the house.
- + Latrine is too close to the river.
- + Animals are defecating into the river.
- + Animals are drinking from the river.
- + Animals are standing in the river.
- + Hotel waste water is entering the river.

**Group 3: How does the water affect the people of the community?**

- + The people may become sick due to the contaminated water.
- + The animals including fish may become sick which could be a source of food for the community.

**Everyone: What can people do to protect their health? How can these people work together to improve the sanitation of the community?**

- + Use safe drinking water.
- + Boil the water for at least 5 minutes or filter the water before consumption.
- + Don't bathe in dirty water.
- + Don't drink water from the river.
- + Move the latrine farther away from the river so the feces cannot contaminate the water source.
- + Provide a fenced-in area for the animals.
- + Don't urinate in the water.
- + Make sure the hotel has and uses a septic tank (tank for waste water) for its own waste water.
- + Provide an adequate number of latrines for the whole community.



+ Sanitation is the proper disposal of waste water and trash.

B. SITUATION IN YOUR COMMUNITY

1. CURRENT SITUATION

a. Water problem

The water problem can be divided into two groups:

- + **Social:** Includes community and personal habits and behaviors.
- + **Technical:** Infrastructure of water solution, sanitation capabilities and maintenance support.

PREPARACIÓN

- ☑ 3 blank posters
- ☑ Colored markers or crayons for 3 different groups

b. Discussion of the current situation

Write the following questions on the flip chart:

- + What is your present situation?
- + Is there enough water for everybody? If no, why not?
- + What can be done about the inadequate water supply?
- + Is the water safe to drink and use?
- + Where do you get your water for drinking, cooking, laundry and bathing?
- + Do you often get sick (stomach cramps, diarrhea)?
- + Do you have skin problems, rashes, etc.?
- + What is the present water infrastructure?
- + What do you do with the waste water and trash?
- + How does the present water situation affect your daily life?

Create 3 different groups and have them discuss the questions related to the present water situation and the problems associated with it. After 5-10 minutes, begin a discussion with the whole group.

c. Community map

Each group (same as before) receives a piece of poster-size paper and some colored markers. The task is to draw a map of their community. They should include the following on their map:

- + Homes
- + Places where they do laundry, bathe and cook
- + Water sources (e.g. wells, storage tanks, faucets)
- + Major landmarks (e.g. school, stores, churches, roads)
- + Waste water storage
- + Latrines



- + Rivers
- + Lagoons
- + Oceans
- + Farming areas
- + Animals

Each group presents their community map to the class.

d. Water sources in your community

Begin a discussion about different things that may be in your water that could make it unsafe to drink.

Use one of the community maps made earlier and point out the different water sources. Follow up with the **Water Sources** Poster that shows which water is safe and not safe in the community.



Present the poster:

Water Sources - Example

The **Water Sources** Poster should be created beforehand depending on your community and water sources. To fill out the chart properly, you should talk with your community leaders to have someone test the various water sources in your community via a laboratory. Once you have the results, create your own poster using the graphics provided.

B1: WATER SOURCES - EXAMPLE

	Turbidity	Smell	Salt	Chemicals	Germs	Safe: Yes or No
Well						Yes
Windmill						Yes
River						No
Pond						No
Lagoon						No
Ocean						No

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- + The community needs to work together to make a positive change in their current water and sanitation situation.
- + In your community it is important to identify, which water sources have safe drinking water.

B. SITUATION IN YOUR COMMUNITY

2. SOLUTIONS

a. How can these problems be solved?

Point out that there are many different solutions. Some solutions are better than others but it is important to discuss them all to see which ones make most sense and can be properly implemented.



Write the following categories on the flip chart:

- + Home
- + Work
- + School
- + Fishing (if applicable)
- + Farming
- + Community



Allow students to discuss each category with their own water solutions and write the ideas on the flip chart.

b. Solutions

Write the topics on the flip chart as a guide for the discussion.



Topic 1: Importance and responsibilities of the water committee

- + Key to providing sufficient supply of safe drinking water to the community.
- + Responsible for operating the water solution.
- + Responsible for maintaining the water solution.
- + Responsible for repairing the water solution.
- + Responsible for collecting a small fee for water usage from community.
- + Responsible for training new water committee members.





Topic 2: Importance and responsibilities of the education committee

- + Key to providing workshops to the community.
- + Responsible for teaching about water education.
- + Responsible for teaching about waste management.
- + Responsible for teaching other workshops depending on the interest of the community.
- + Responsible for training new education committee members.



Topic 3: Community's responsibilities

- + Attend workshops.
- + Using the education acquired and putting it into practice.
- + Assist water committee where possible.
- + Assist education committee where possible.
- + Pay a monthly fee to ensure that the water solution is sustainable.
- + Be positive role models.



Topic 4: Why a small fee for water services is necessary and crucial for the sustainability of the water solution.

- + Repairs are required from time to time.
- + Replacement parts are required from time to time.
- + Payment for maintenance, repairs and labor.
- + Payment for services emphasizes the value of the water and water solution and encourages conservation and waste avoidance.



Allow the students about 10 minutes, then select the groups, one at a time, to explain their topic and why it is important. Be sure to add any points not mentioned in the discussion.



- + **The community needs to work together to make a positive change in their current water situation.**

C. DRINKING WATER

1. EFFECTS OF UNSAFE AND SAFE DRINKING WATER

a. What are the dangers of drinking and using unsafe water?

Present the poster:

Effects of Unsafe And Safe Drinking Water



Explain the following statistics by writing the numbers, as you discuss each item in the poster, on the flip chart for emphasis.

Dangers:

- + Becoming sick (illnesses like diarrhea, skin rashes)

Statistic: 88% of diarrhea cases are due to unsafe water supply, inadequate sanitation and hygiene. (Source: WHO)

- + Child mortality

Statistic: 1.8 million people die every year from diarrhea (including cholera); 90% are children under 5, mostly in developing countries. (Source: WHO)







Statistic: Water-related illnesses are the second biggest killer of children worldwide. (Source: WaterAid)

- + Decreased productivity

Statistic: 443 million school days are lost each year due to water-related illnesses. (Source: WaterAid)

Statistic: More than 200 million hours are spent each day by women and female children to collect water from distant and often polluted sources. (Source: WHO)

- + Lack of economic and development growth
The incidences of sickness, child mortality and lack of productivity negatively affect the community's economy and development, not just one individual or family.

C1: EFFECTS OF UNSAFE AND SAFE DRINKING WATER		
	Unsafe Drinking Water	Safe Drinking Water
Health Mental Social Physical		
Child Mortality	X X X X X	X X X X X X X X X X
Productivity Children Women Men		
Economic and Development Growth		



b. What are the benefits of safe drinking water?

The benefits of having safe drinking water:

- + Health (physically, mentally and socially)

Statistic: Hygiene interventions including hygiene education and promotion of hand washing can lead to a reduction of diarrhea cases by as much as 45%.

(Source: WHO)

- + Child mortality

The child mortality decreases, meaning fewer babies and children are dying from preventable diseases.

- + Productivity

By being healthy, the productivity rate is much higher because children can go to school and women and men are able to work.

- + Economic and development growth

Water and sanitation infrastructure helps to take the first essential step out of the cycle of poverty and disease. (Source: WaterAid)

This growth occurs because healthy individuals have a substantial increase in the chance of being able to go to school and/or work, have the opportunity to learn a trade or skill and earn money.



- + When drinking unsafe water you may become sick (possibly causing death - especially in children) and unproductive at work or school.

- + When drinking safe drinking water you are more likely to be healthy, productive and have the opportunity to support your family.



D. WATER AND ILLNESSES

1. FECAL ORAL ROUTE

a. What are germs?

Germ: A tiny organism (too small to be seen) that can cause disease and illnesses. Bacteria, viruses, parasites and microscopic worms are all germs.

Germs are located in:

- + Feces
- + Rotting foods
- + Dirty places
- + Clean places (but at a much lower concentration and risk)

Germs are spread by:

- + Human contact
- + Water
- + Air
- + Cough
- + Sneeze
- + Food
- + Drink
- + Insects (mosquitoes, flies)
- + Animals

PREPARACIÓN

- ☒ Object representing a germ



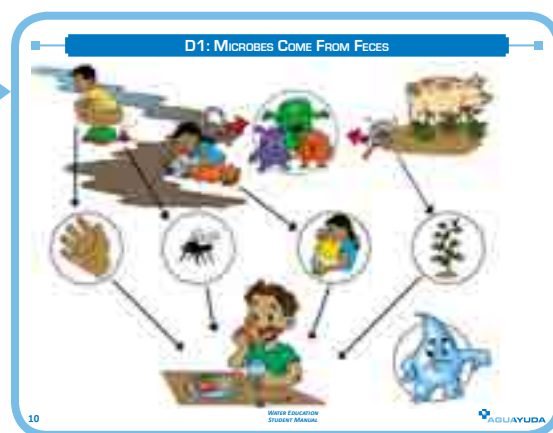
b. How germs spread via the fecal oral route

Present the poster:

Microbes Come From Feces

Explain the path of the germs and how they are spread.

All of the scenarios could be acted out with 4 volunteers. To explain the route, use an object that represents the germs.



Scenario 1: Feces - Fingers - Food - Mouth:

A person uses the bathroom and does not wash his hands. The same person decides to make a sandwich with his dirty hands. The sandwich becomes contaminated. The contaminated food is eaten, possibly by other people also. The people eating the sandwich may become sick.

**Scenario 2: Feces - Flies - Food - Mouth:**

Flies land on feces. Next, the flies land on tonight's dinner. The dinner becomes contaminated. The contaminated dinner is eaten. The person eating the dinner may become sick.

Scenario 3: Feces - Fluids - Mouth:

Feces enter the water source. A person drinks from water source. The person drinking the water may become sick.

Scenario 4: Feces - Fields - Food - Mouth:

Feces contaminate the local crops. The local crops are used to make a salad. The salad becomes contaminated. Contaminated salad is eaten. The person eating the salad may become sick.



- ✚ Germs are located in feces, rotting food, dirty places and clean places (but at a much lower concentration and risk).
- ✚ Germs enter your body through your hands, food and/or unsafe water.

D. WATER AND ILLNESSES

2. WATER-RELATED ILLNESSES

a. How water-related illnesses are spread and what their symptoms are

Present the poster:

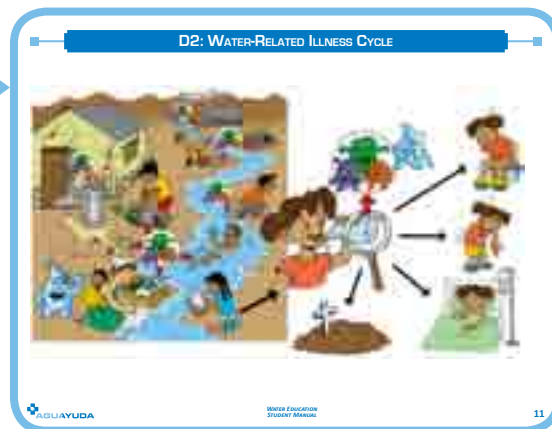
Water-Related Illness Cycle



As a review, ask the group why the river in the poster is contaminated.

Reasons include:

- + A woman is washing her laundry in the river.
- + Various animals are defecating in the river.
- + A boy is defecating in the river.
- + A boy is bathing in the river.
- + A factory is contaminated the river with chemicals.



Explain that harmful bacteria, viruses, parasites and worms that cause water-related illnesses can enter your body via the:

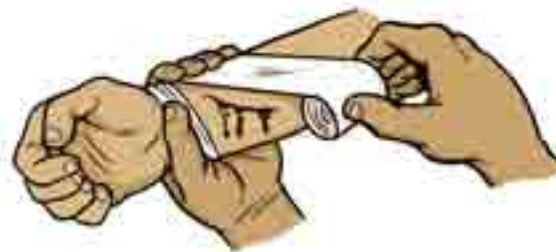
Mouth:

- + Contaminated water
- + Oral fecal route
- + Contaminated food



Skin:

- + Insect bites
- + Contaminated water
- + Open sores



Nose:

- + Polluted air
- + Dirty handkerchiefs
- + Contaminated water

Once inside the body, the harmful germs from the contaminated water can create many problems, which may result in many different types of illnesses with the following symptoms:

- + Abdominal pain
- + Chills
- + Coughing
- + Diarrhea
- + Difficulty breathing
- + Ear infection
- + Blood, worms in feces
- + Fever
- + Headache
- + Loss of appetite
- + Tiredness
- + Nausea
- + Skin rash
- + Sore throat
- + Sores that won't heal
- + Vomiting
- + Death



Explain that when you drink contaminated water, your body can suffer many symptoms. To prevent water-related illnesses, you should only use safe drinking water.



+ To prevent water-related illnesses you should only drink and use safe drinking water.

D. WATER AND ILLNESSES

3. HOW TO PREVENT WATER-RELATED ILLNESSES

a. How to prevent water-related illnesses

Present the poster:

Prevent Water-Related Illnesses



Explain how to prevent water-related illnesses.

Present only as an overview because each of these points will be discussed in detail later.

- + Drink only safe drinking water
- + Wash your hands with safe drinking water
- + Keep your body clean
- + Keep your home clean
- + Dispose waste water properly
- + Store water properly
- + Prepare and cook food properly



E. PROPER HYGIENE PRACTICES

1. WASHING HANDS

a. Why is it important to wash your hands?

Explain that washing hands is very important because:

- + Hands can get very dirty through daily use (bathroom, at work, contact with animals or other people, etc.)
- + When you put your dirty hands in your mouth or eyes or handle food, germs may get into your body and make you sick

PREPARACIÓN

- ☒ Copies of the Bingo Board
- ☒ Scissors
- ☒ Rocks or small objects

Remember when you wash your hands, be sure to use clean water and soap.

b. When should you wash hands?

Ask the students for other scenarios when hands should be washed and write the answers down on the flip chart. Make sure all of the ideas below are mentioned, if not add them:

- + Before eating
- + Before handling food
- + Before preparing food
- + During food preparation – after handling any raw meats, fish, etc. and before touching any other food or cooking utensils.
- + After using the toilet
- + After contact with animals and pets
- + When hands are dirty
- + Before having contact with sick people
- + After having contact with sick people
- + After coughing into hand (you should cough into the crook of your elbow or sleeve instead)
- + After sneezing into hand (you should sneeze into the crook of your elbow or sleeve instead)
- + After picking up trash
- + After taking things to the dump
- + When in doubt wash hands, you cannot wash hands too much.
- + Before and after changing diapers



Use the following poster to review when you should wash your hands.

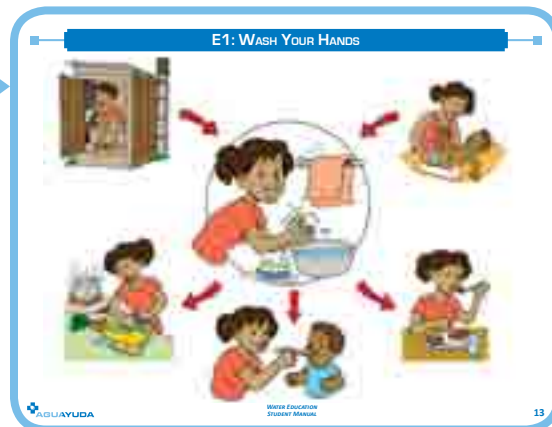
Present the poster:

Wash Your Hands

The poster depicts 5 common scenarios where it is important to wash your hands.

Choose a student to explain the 5 scenarios. It is important to wash your hands:

- + After you use the bathroom
- + Before and after changing diapers
- + Before and after you eat
- + Before you give a baby food
- + Before and after you cook



c. Bingo Board

Present the poster:

Bingo Board

Let the students cut out each field and rearrange it so that every student has its own individual Bingo Board. Each field on the board represents a situation when to wash your hands. Read one situation out loud. The student who has the situation on his board covers it up with a coin, rock or other small object. The game continues until one student has 3 fields covered in a row vertically, horizontally or diagonally and yells **BINGO!** This game can be repeated until one student has won three (or any number) of times.



- + Dirty hands can make you sick.
- + Wash hands before cooking.
- + Wash hands before eating.
- + Wash hands after using the toilet.
- + Use clean water and soap to wash hands.

E. PROPER HYGIENE PRACTICES

2. HANDLING ANIMALS

a. Why is it important to properly handle animals?

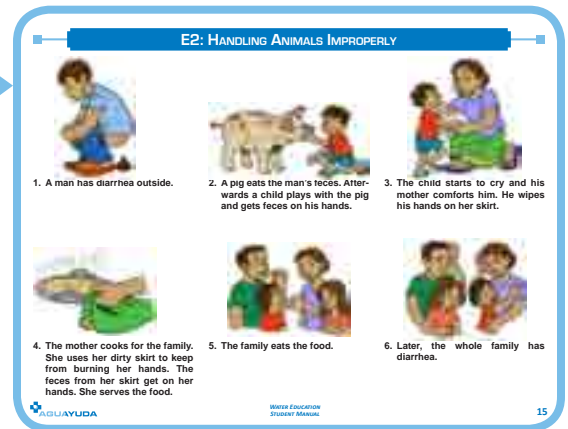
Animals are transmitters of illnesses. To prevent you or your family from becoming sick it is important to handle animals properly.

Present the poster:

Handling Animals Improperly

Ask a student to explain how animals can be dangerous to you and your family.

1. A man has diarrhea outside.
2. A pig eats the man's feces. Afterwards a child plays with the pig and gets feces on his hands.
3. The child starts to cry and his mother comforts him. He wipes his hands on her skirt.
4. The mother cooks for the family. She uses her dirty skirt to keep from burning her hands. The feces from her skirt get on her hands. She serves the food.
5. The family eats the food.
6. Later, the whole family has diarrhea.



b. What are the common animals that should be kept out of the house?

Ask the students to name all the animals they have at or near their home. Explain that generally all animals should be kept out of the house including the following animals:

- + Pigs
- + Chickens
- + Goats
- + Dogs
- + Cats



Animals can bring illnesses inside the house, especially when they have access to the kitchen and touch, sniff or eat the food.



c. What should you consider when dealing with animals?

Ask the students, where their animals sleep, eat and how they interact with them. Note these answers for later.

Explain the proper way of handling animals.

- + Wash your hands after contact with animals.
- + Keep the animals out of the house and especially out of the kitchen.
- + Don't share your water sources with animals.
- + Build a stall for the animals where they have enough space to sleep and eat.
- + Clean the stall regularly (and wash your hands afterwards).
- + Properly remove the animal feces and put them in a designated area.
- + Clean the pets on a regular basis.
- + Vaccinate pets on a regular basis.
- + Treat them well, do not hurt or kick the animals.



Go back to the students' answers and ask them how they will improve their interaction with the animals.



- + **Keep animals out of the house; especially the kitchen.**
- + **Don't share your water source with animals.**
- + **Wash your hands after contact with animals.**

E. PROPER HYGIENE PRACTICES

3. SUMMARY

a. Good, Bad and In-Between Game

The object of the three piles sorting exercise is to understand good and bad hygiene practices.

Cut out the 42 illustrations from the posters:
Good, Bad and In-Between 1 – 8

The game can be played in a large group (requires more decks of 42 cards) or a small group of 2-3 people.

Give out the cards to the students.

Tell the students to sort the cards into three piles using the categories:

- + Good: Activities that are good for your health.
- + Bad: Activities that are bad for your health.
- + In-between: Activities that are neither good nor bad for your health.

After 10 – 15 minutes ask the students to explain their selections. If necessary provide the correct answer as explained on the following page.

Ask the students:

- + What hygiene practices are used in their community?
- + Are these practices similar to any of the good and bad practices that are shown in the cards?

All 42 cards are explained below according to their category: **Good, Bad or In-Between.**
Good:



It is important to change used diapers because babies are more vulnerable to germs.



It is important to clean the area outside the home because it keeps away rodents and germs.



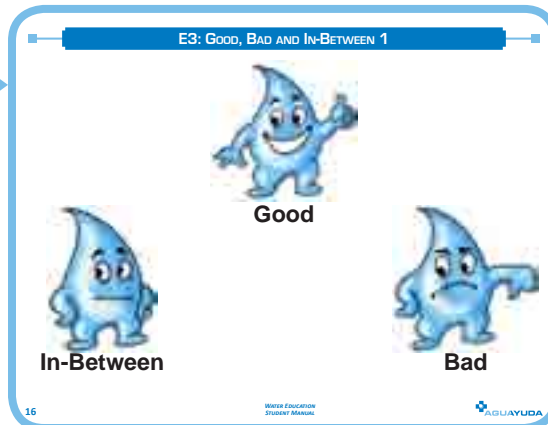
It is important to sweep and clean the area near the latrine to diminish the number of germs.



It is important to wash your children with soap and clean water.

PREPARACIÓN

- ☒ 42 illustration cards
- ☒ Scissors

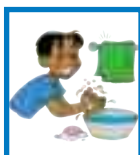




Washing hands after using the bathroom is good because it eliminates the germs that make you sick.



A closed water container with easy access to the water is the best type of water container.



Washing hands with soap and clean water is a good idea because it eliminates the germs.



After a meal, it is important to wash your dishes properly to get rid of any germs and dirt.



Using clean water to water plants is a good idea.



Using safe drinking water is important.



It is important to use proper cover materials in dry latrines to help the process of decomposition.



Using safe drinking water is important.



Washing your hands before and while you cook is important to get rid of germs and dirt.



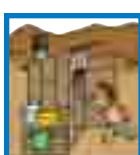
It is important to sweep to reduce the number of germs.



Food covered properly will protect you from germs and insects.



A dry latrine provides a safe sanitation solution and fertilizer for agriculture purposes.



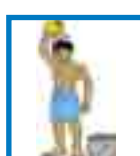
After using the bathroom, you should have access to clean water to wash your hands.



Using a fence to control animals is good for protecting your water sources and crops.

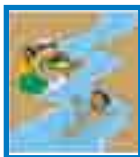


Recycling trash is a great way to protect and clean up the environment.



It is important to bathe with soap and safe drinking water.

Bad:



Bathing in a river where others wash their clothes is bad because of the dirt, germs and chemicals in the water.



Trash left by a river or other water sources will contaminate the water.



Water from a river is dangerous because the water may be contaminated.



Animals defecating near a water source will contaminate the water.



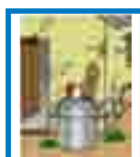
Defecating outside a home and/or near a water source is bad because it contaminates the area and attracts flies.



To pet animals and not washing your hands afterwards is bad for your health.



Animals defecating near a river contaminate potential sources of water for people.



An open water container can be contaminated easily via animals.



Uncovered food can be contaminated by flies.



It is bad to have animals drinking out of buckets used for transporting water.



Defecating in a field will destroy and contaminate the crops.



It is bad to eat food with dirty hands because you can become sick from the germs on the hands.



Defecating outside will contaminate the ground water.



An open water container can be contaminated easily.

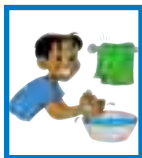
In-Between:



An open water container can be contaminated via animals and dirt.



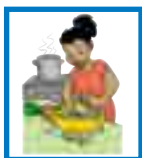
Boiling water before you consume it kills germs. However, does not remove sediments and chemicals.



Washing hands with only clean water is ok. However, it would also be better to use soap.



To place trash in a trash can is a good idea. However, it would be best to have a cover so that no animals can get into the trash.



Wash vegetables before cooking is important because it eliminates germs and dirt. However, it is better with a little bit of chlorine to kill germs.



It is good to use a spoon to get the water out of the container. However, the container needs a cover.



Filtering water removes dirt but does not eliminate any germs or chemicals.



A well should always be covered to prevent water contamination. However, using a bucket can contaminate the water source.

F. WATER MANAGEMENT

1. WATER STORAGE

a. Why is it important to store water properly?

It is important to store water properly because:

- + Water becomes contaminated easily when being transported.
- + Water becomes contaminated easily when not properly stored.
- + When water is contaminated, it is no longer safe to drink. You may become sick when you drink it or prepare food with it.
- + If you leave your water container open or have puddles of stagnant water sources, mosquitoes are attracted that can carry dengue, malaria, yellow fever and other diseases.

b. Tips on storing water properly

- + Explain the key points to storing water properly:
- + Store safe drinking water in clean containers.
- + Clean container regularly with a small cap full of chlorine and a brush (being careful to rinse all chlorine from container).
- + Store safe drinking water in closed containers so that animals, bugs and mosquitoes don't have access to the water. Covered narrow mouthed containers are safest for storing water and helps prevent germs from entering the container.
- + Obtain just enough safe drinking water for daily use (approximately 5 liters per person per day for drinking and cooking).
- + Wash hands before collecting and carrying water.
- + Don't put hands or anything other than designated water spoons (ladle) into storage container.
- + Pour water from storage container into a separate smaller container as needed.
- + Only use clean long-handled spoons to get safe drinking water out of the container.
- + Keep water container off the floor and away from animals.
- + Make sure there is no puddles of stagnant water anywhere inside or near the home. If there are, use this water to water plants right away and turn the item upside down so no water can collect again.

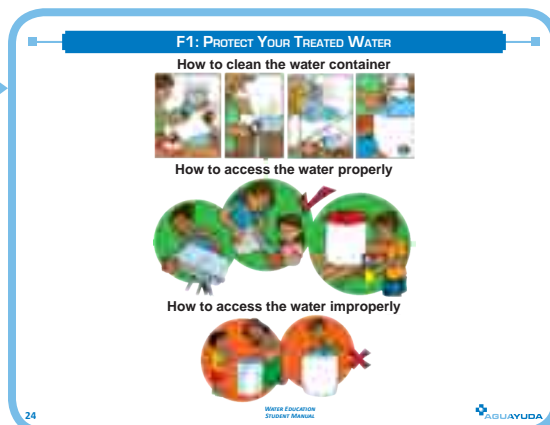




Present the poster:
Protect Your Treated Water



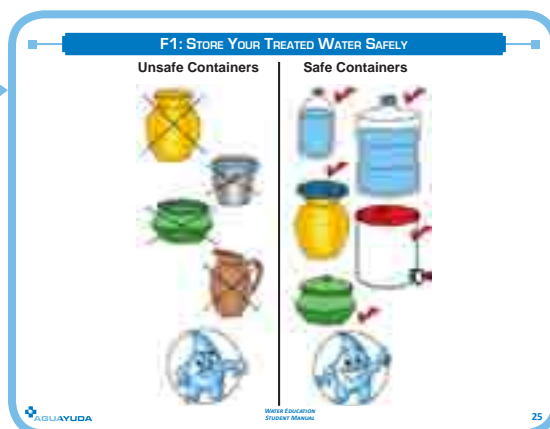
Choose a student to explain the poster as a summary.



Present the poster:
Store Your Treated Water Safely



Choose a student to explain the poster as a summary.



- ✚ Safely stored safe drinking water keeps you and your family healthy.
- ✚ Store safe drinking water in clean, closed containers.
- ✚ Don't put hands into storage container.
- ✚ Keep animals away from safe drinking water.

F. WATER MANAGEMENT

2. WATER CONSERVATION

a. How much water do we need per day?

Every community has their own needs and should determine how much water is necessary for various activities such as washing laundry, preparing food and drinking water.

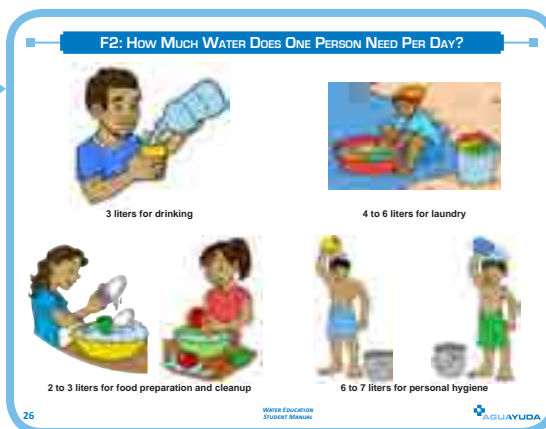
Present the poster:

How Much Water Does One Person Need Per Day?

Explain the different situations where we use safe drinking water and how much. To give the students a better feeling of how much water is needed show it in 1 liter plastic bottles.

PREPARACIÓN

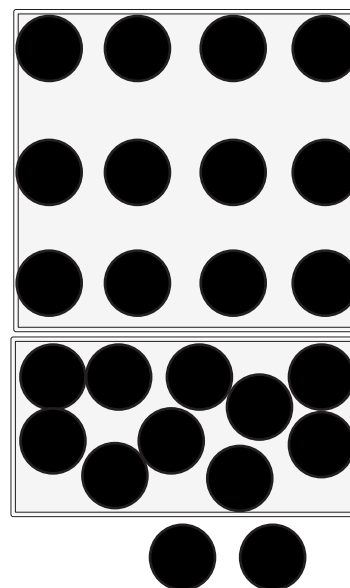
- ☒ 19 - 1 liter plastic bottles
- ☒ Stick for drawing on the ground



b. All Aboard

To explain the importance of conserving water play the following game with the group:

1. Define a small area by drawing a square with a stick on the ground that is big enough for all the students to stand in. Tell the students that this space symbolizes the safe drinking water supply available. Tell the students to stand inside the area. Everybody needs to fit. The first drawing shows all the students (circles) fit in the square.
2. The next step is to reduce the area so that not everybody fits into the area. Tell the students that due to the overuse of safe drinking water, there is only this amount available. Tell the students to stand inside the area. They will have problems fitting, maybe there is some pushing to get in and some of the students will need to stay outside the square. The second drawing shows that 2 students don't fit in the area.
3. Explain to the students, that the students that did not fit into the square will have no safe drinking water available because there is not enough because it was not conserved properly.
4. If there were conflicts, explain that this can occur when there is not enough safe drinking water for everyone. In order to prevent these problems, we all have to conserve water.



c. Safe drinking water is not free

Explain to the students that safe drinking water is not free because every water solution needs:

- + Maintenance
- + Repairs
- + Replacement parts
- + Labor to maintain and repair the water solution
- + A water purification system if the water is contaminated
- + Electricity if the water purification system requires energy to operate



That is why it is necessary to pay a small fee for safe drinking water. Explain, that it is cheaper to pay a fee for the safe drinking water than to get sick. When you become sick you have to go to the doctor and you cannot work and earn money or go to school. Being sick affects you and your family.



- + It is important to conserve water because there is not enough safe drinking water for people to waste.
- + Safe drinking water is not free due to the costs of the operation and maintenance of the water solution.

G. SANITATION

1. LATRINES

a. What does an appropriate latrine provide?

Present the poster:

What Does An Appropriate Latrine Provide?

It is important that the people of the community understand what an appropriate latrine provides.

The answers include:

- + A place to urinate and defecate
- + A way to clean oneself afterwards
- + Keeps urine and feces away from food and water
- + A clean and safe place to use the bathroom
- + Turns urine and feces into a valuable resource



b. Where is a good location to build a latrine?

Explain that when deciding where to build a latrine, make sure it will not pollute any water sources such as rivers, wells, or springs. A latrine should be at least 20 meters from all water sources. Also be sure that the latrine will not pollute the groundwater. Groundwater flows at different depths underground in different places. The risk of groundwater pollution depends on the type of soil, the amount of rain or moisture in the area, and the depth of the groundwater. Keep in mind that water levels are much higher in the rainy season than in the dry season.

c. Types of latrines

There are many kinds of latrine, and not one kind is right for every community or household. When deciding what kind of latrine to build, think about the needs of those who will be using it and the kind of space you have for it. For rural communities it makes most sense to use composting latrines which are great for keeping communities clean and safe, with the least harm to the environment and to people.

d. What is a composting latrine?

A composting latrine stores human waste until it breaks down and becomes compost. The mix will heat up and over time will kill the harmful germs. When used properly composting latrines are a safe way to manage human waste and improve soil quality at the same time.

e. Turning feces into fertilizer

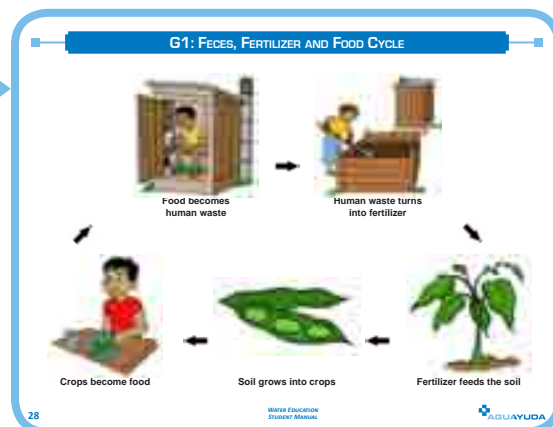
Both urine and feces carry nutrients that can improve the soil and therefore the crops. However, they can also carry germs that cause illnesses. It is important that the feces and urine decompose completely before they are used as a fertilizer on crops.



Present the poster:

Feces, Fertilizer and Food Cycle

- + Food becomes human waste
- + Human waste turns into fertilizer
- + Fertilizer feeds the soil
- + Soil grows crops
- + Crops become food



f. What and how does the loveable loo work?

The loveable loo is a composting latrine. The loveable loo collects the urine and feces while being mixed with sawdust to begin the decomposition. Then it is added later to a compost chamber where it then turns into a fertilizer after 8 to 12 months. It would be helpful to have one loveable loo constructed to demonstrate how it works to the group.

Daily Use:

- + Sit comfortably on the toilet seat and do your “business”.
- + Place the toilet paper inside the bucket.
- + After using the toilet, place a scoop of sawdust over the toilet paper, feces and urine in the bucket.
- + Wash your hands with soap and water after using the bathroom.

Maintenance:

- + Clean the latrine periodically.
- + When the bucket is almost full, transport it to the composting chamber.
- + Maintain the compost chamber periodically to assure proper compost conditions.

Advantages:

- + Saves water
- + Protects the environment
- + Produces fertilizer
- + It is affordable.



- + It can be easily constructed with local materials and labor.
- + It is a clean sanitation solution, which does not create bad odors.

Disadvantages:

- + The sanitation solution requires a composting chamber which can be used for various latrines.
- + The loveable loo requires maintenance periodically.
- + The compost chamber requires maintenance periodically.
- + The sanitation solution requires a supply of sawdust to cover the excrements.
- + The sanitation solution requires manual labor to construct it.



g. Questions for the community

It is important to have an open discussion with the community about having latrines. It is an important topic but it is also a sensitive and personal issue. Please be careful when working with communities that have different cultures and traditions regarding latrines.



The following is a list of question that should be discussed with the community before the latrine project begins.

- + How many latrines do you want to construct in the community?
- + Where do you want to construct the latrines?
- + Where do you want to construct the compost chamber?
- + What is the appropriate size for the latrines?
- + Is toilet paper available?
- + Who will be in charge of every latrine?
- + What type of housing do you want for the latrine?
- + Is there someone in the community that works well with wood?
- + Who will help in the construction of the latrines and the compost chamber?

- + **Latrines need to be clean.**
- + **Wash your hands after using the latrine.**
- + **Keep urine and feces away from food, water and crops.**
- + **Use urine and feces to fertilize plants after it goes through the decomposition process.**



G. SANITATION

2. WASTE MANAGEMENT AND WASTE WATER

a. Situation in your community



Speak with the students and ask them:

- + How do you get rid of your waste?
- + Do you have locations in your community where there are puddles of stagnant water?
- + What happens to the water you use for cleaning the home, washing laundry and bathing?



Note the answers on the flip chart.

b. Waste

Explain the problems with waste when not properly disposed:

- + To throw trash on the ground hurts the environment and creates an environment with many illnesses and dangers for the people of the community.
- + To burn trash pollutes the air.



The trash generated by each family should be disposed properly.

Waste management solutions:

- + Place all trash in a trash can or trash bag.
- + Bury trash to avoid the attraction of mosquitoes and rodents, however be sure to choose a location that will not contaminate a local water source.
- + Create a service in your community that collects waste and transports it to the local landfill. The community should pay a small fee for this service.

c. Puddles of stagnant water

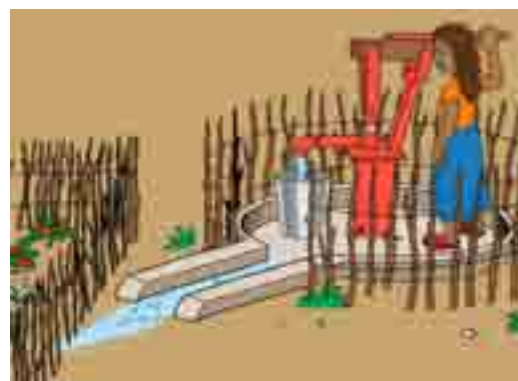
It is common to see puddles of stagnant water around pumps, wells and other water points.

Explain the problem with puddles of stagnant water:

- + Mosquitoes reproduce in stagnant water and can transmit illnesses such as malaria and dengue.

To eliminate puddles of stagnant water, you can:

- + Construct a platform to avoid water collecting in one area.
- + Send the water through a canal.
- + Construct a drainage ditch to absorb the waste water.



d. Waste Water

Explain that waste water is the water used from activities such as washing laundry, dishes and bathing.

Waste water should never be used for human consumption but it can be used in activities such as:

- + Watering gardens
- + Feeding animals when there are no chemicals in the water



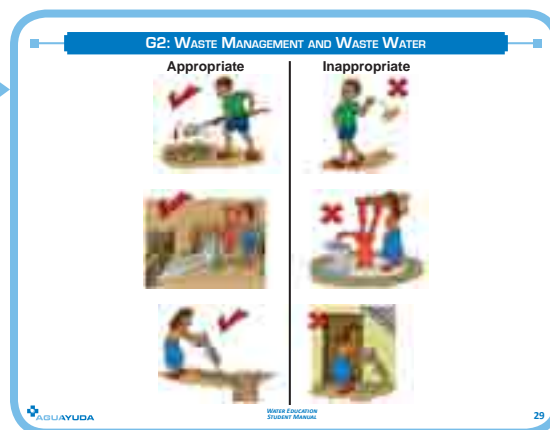
If there is no use for the waste water, a drainage ditch can be built. This is important so no mosquitoes and rodents come that transmit illnesses.

e. Summary

As a review, present the poster:

Waste Management and Waste Water

Choose a student to explain the poster to the class.



- + Place all trash in a trash can.
- + Construct a platform to avoid water collecting in one area.
- + Send the water through a canal.
- + Construct a drainage ditch to absorb the waste water.
- + Use waste water to water plants or feed animals.



H. SUMMARY

1. REVIEW

a. Where to find additional information?

Explain that additional information is available in the following places. Encourage them to seek further information about the topics that interest them. Write down the resources on the flip chart.



- + Pan-American Health Organization (PAHO)
- + SENA
- + Red Cross
- + Health Department
- + Doctor
- + Local Education Committee
- + Local Water Committee
- + Teachers
- + Aguayuda
- + Internet
- + Library

PREPARACIÓN

- ☒ Rope
- ☒ Small Prize

b. Final Activity



As a nice end to the workshop, play the following game to demonstrate the importance of each member in the community.

Make a circle with all the students. Join hands. Now pass a rope from one person to the next without letting the hand loose and letting the rope fall down until everybody is connected via the rope.

The student passing the rope needs to say one thing he/she has learned during this workshop. The response cannot be repeated by others.

Have a special treat to celebrate every ones hard work.

