

A manual for
WASH Activities
in Elementary School Clubs



Acknowledgements:

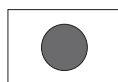
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JAPAN
From the People of Japan

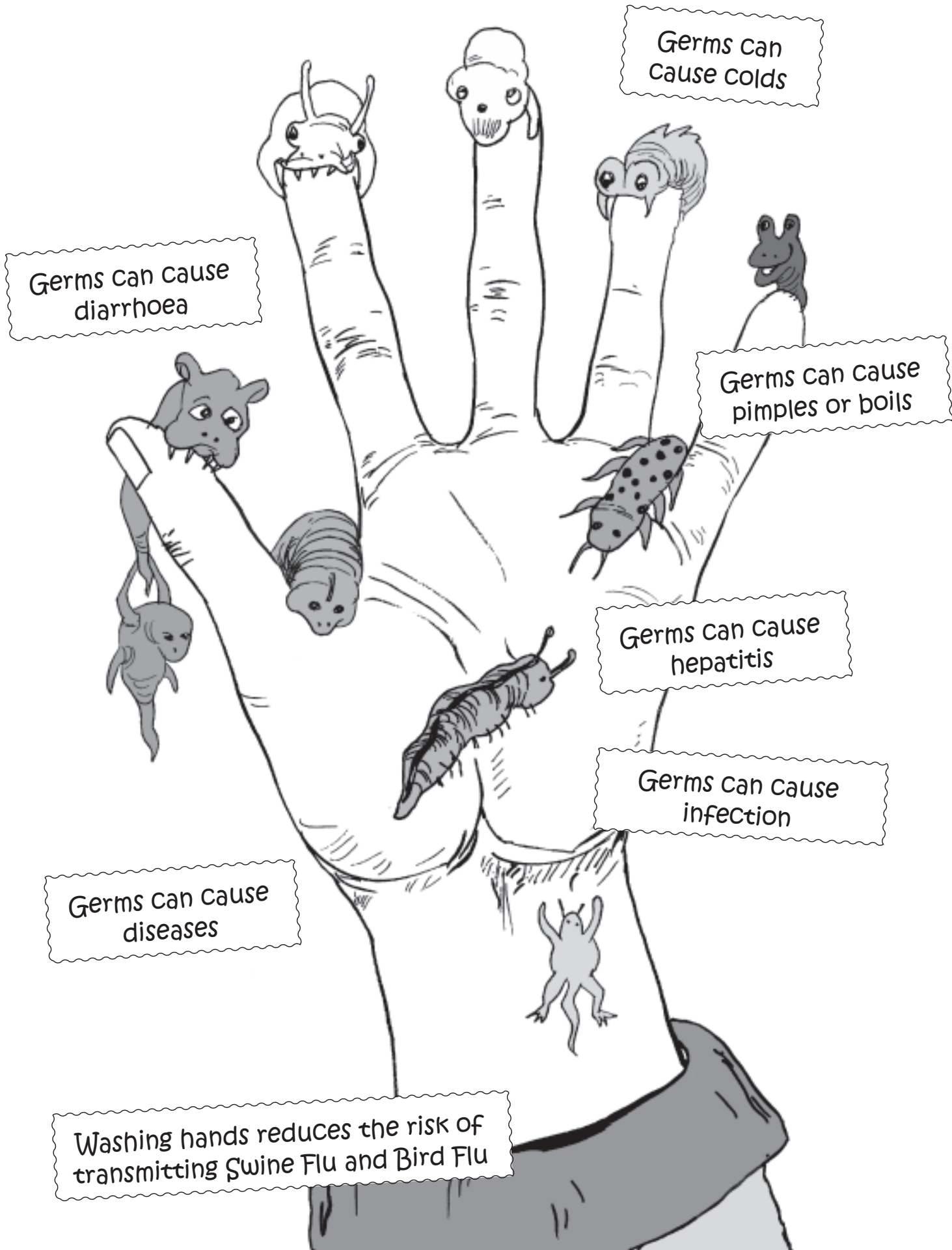


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1

Introduction

The WASH Activities book has been developed for Eritrean elementary schools to provide a set of hygiene related information and club activities around Water, Sanitation and Hygiene wellbeing for students and their families. This book is to support schools and students in Grades 1-5 to have an extracurricular club with a focus on Water, Sanitation and Hygiene. Many schools already have a Health Club or a Hygiene Club. These activities are designed to be used in these clubs.

Have Fun While Learning!



Toolbox contents

The materials are supported by a Toolbox of items to use with activities.

Item (Alphabetical order)	QTY
<ul style="list-style-type: none"> • 1 Metal box for storage of the items. • 2 padlocks. The box can be locked if your school does not have a safe storage room, but if you choose to lock the box, please ensure all teachers can have access. 	
Aluminium foil –large rolls (to make solar cooker) 150m x 44cm, or 150x 30cm.	5 rolls
Animal pictures, series 1: A4 size, 20 cards in each set (cat, dog, bird, camel, goat, cow, horse, hen, fish, lion, monkey, rabbit, snake, leopard, ostrich, tortoise, zebra, elephant, hyena, fox).	10 sets
Animal pictures - ENDANGERED AND VULNERABLE, series 2: A4 size, 7 cards in each set, (African wild ass, nubian ibex, African elephant, greater kudu, Soemmerring's gazelle, ostrich, leopard).	1 set
Animal pictures – African Animals, series 3: A4 size, 16 cards in each set, (rhinoceros, chameleon, lizard, aardvark, buffalo, eland, impala, crocodile, Arabian bustard, hedgehog, hippopotamus, giant golden mole, green turtle, Egyptian goose, gorilla, dolphin).	1 set
Animal Food Pictures: A5 size, 13 cards in each set, (meat, seeds, mice, bananas, hay, hen, insects, lizard, tree, fruit, bird, water, milk - with words).	1 set
Ball of nylon string (for web of life game) about 50 metres long	2 balls
Bird Identifier: Picture Card	10 sets
Brightly coloured twine (for hanging up artwork) roughly 80 metres	2 balls
Chalk, assorted colours, calcium carbonate, in box of 100	13 boxes of 100
Clear plastic bags –Polythene (plain) (for tree transpiration activity) - approx A3 size (297*420mm). 60/kit (<i>please re-use for each class</i>).	60
Clear plastic bags - Heat resistant (for solar cooking). A4 size (210 × 297 mm) 50 / kit. (<i>please re-use for each class</i>).	50
Clock with a second hand for a classroom. Analogue display. 350mm diameter. - Battery for clock. 1xAA. 1 Pack of 4	1
Clothes pegs (for hanging up artwork in classroom) 40/kit	40
Colouring pencils, Set of 12 assorted colours. Metal box.	12 packs
Composting poster: Simple Steps to Making compost	1 poster
Crayons, wax, 8 colours per pack/box of 10 packs.	6 boxes of 10 packs.
Deforestation Information Cards	10 sets
Drawing pad white, A3, 50 sheets. pack of 10	2 packs of 10
Ecosystems of Eritrea: Map	1 poster
Elastic bands: packet of 100 (<i>please re-use for each class</i>).	2 packets
Eye dropper (Pipet) 155 mm. Plastic. graduation 1 mm	2
Marker, flip chart, assorted colours (tip-4.5mm)/pack of 4	6 packs
Glue, classroom use, bottle, approx. 170 ml.	10 bottles

Greenhouse information cards	10 sets
Hand washing poster: Steps to wash your hands	1 poster
Hand washing poster: Don't spread germs	1 poster
Hygiene, sanitation, water, health Information Cards	10 sets
Inflatable globe, (diameter of 42cm), without stand	1
Insect identifier: Picture Cards	10 sets
Plastic binoculars for kids. Magnification 3 x.	10
Magnifying glass: Magnification x 4, or x 5, plastic handle	8
Masking tape (for making a solar cooker) 50mm x 50m. auto grade	4 rolls
Measuring containers (PP beaker) measurement 10ml . 1 of each/set Capacity 1000 ml (1), 100ml (1) and 25ml (1).	1 set
Measuring spoons (for waste activity and soil activity) 1 of each/set <ul style="list-style-type: none"> • tablespoon approx. 15 ml (1) • 1/2 tablespoon approx. 7-8 ml (1) • teaspoon (1/3 tablespoon) approx. 4-5 ml (1) 	1 set
Measuring tape – length 5 metre, retractable	10 pieces
Paint, black, for blackboards. 500 ml per tin NB: The inside lid of the metal box can be painted with blackboard paint and used as a blackboard. The blackboard paint can also be used on a smooth surface e.g. wood or on a wall.	4 tins
Paint brushes for blackboards 50-60mm	2 brushes
Paper, white, A4, 1 ream – 500 sheets	3 reams
Paper, black, A4, 1 ream – 500 sheets (<i>please re-use for each class</i>).	1 ream
Pencil, black, HB grade. Box of 10	13 boxes of 10
Plant information cards	10 sets
Red food dye – small bottle 100ml	1 bottle
Red Sea Zoo	10 copies
RRR - Reduce, Reuse, Recycle Poster	1 poster
Plastic wrap (for experiment to understand the water cycle and condensation) 300 mm X 300 m. catering size. (<i>please re-use for each class</i>).	1 roll
Ruler, plastic, 30cm. Pack of 10	5 packs of 10
Scissors, blunt, safe for school use. 135mm. Box of 10	7 boxes of 10
Seeds: packets of corn and beans	1 set
Seed Poem	10 copies
Gardening equipment: 5 of each <ul style="list-style-type: none"> • Hand trowel (Green club), 285*87mm, carbon steel (5) • Weeding fork (green Club), 285*80mm, carbon steel (5) • Spade (Green club). Wooden shaft and plastic handle 940mm Blade (235*140mm) (5) 	1 set
Soap: toilet bar, approx 110g. Wrapped.	50 bars
Soil Texture Chart	10 copies
Solar cooker kit	1 kit
Stapler: metal base half strip accepts 26/6 staples.	5

Staples: 26/6. 5000 per box	2 boxes
Sticky Tape: transparent 1,5cm x 10m/box of 20	2 boxes
Thermometers: spirit filled - 10 degree C + 100 degree C. Child safe easy to read (for measuring temp of weather and water)	3
Water cycle definition cards	10 sets
Water cycle picture cards	10 sets
Water testing kit: Bacteriological H ₂ S field testing kit	40 kits
Web of life cards: A5 size, 19 cards in each set. (hyena, vulture, cheetah, hunting dog, lion, baboon, giraffe, impala, seeds, wildebeest, tree, grass, bacteria, dung beetle, fungi, sun, water, bird, insects).	1 set
What is climate story	10 sets
Weather picture cards: A5 in size, 7 cards in each set, (rain, windy, cloudy, sunny, hot, cold, storm).	1 set
Zoo Pictures	10 sets

Books

These books can be stored in your school library to allow all students access.

Title/ISBN	Quantity
<i>Book of Eritrean medicinal plants</i> ISBN 99948-53-00-7	1
Jaws Discovery series- 8 books <i>Deserts : The driest places in the world</i> ISBN:9780435898564 <i>Disaster! Natural disasters of the world around us</i> ISBN: 9780435898939 <i>In Danger! Endangered species of the world</i> ISBN 9780435898595 <i>It Works! Jaws Discovery</i> ISBN 9780435898908 <i>Patterns in Nature</i> ISBN 9780435898588 <i>Sensation JAWS Discovery</i> ISBN 9780435898526 <i>Shapes in the world around us</i> ISBN 9780435898557 <i>Water: Nature's liquid miracle</i> ISBN 9780435898571	1 of each
<i>Africa's most amazing animals</i> ISBN: 1410930920	1
<i>The oceans most amazing animals</i> ISBN: 1410930971	1
<i>My First Book of Southern African Insects</i> ISBN: 9781770072138	1
<i>Let's Go Picture Dictionary, Monolingual English Edition, Paperback</i> ISBN 9780194358651 Using the Picture Dictionary Pictures are a great help when you are teaching new vocabulary. Use the Picture Dictionary to show students a picture of what you are talking about, rather than always translating from Mother Tongue. The Picture Dictionary is based on high frequency words so you should find all the vocabulary you need at the grades 1 to 5. The Picture Dictionary is based around topics, for example family, and weather. The illustrations, vocabulary and exercises all focus on the topic. There is also an alphabetical index so that you can look up individual words to check the page on which they are illustrated.	1

2

Ideas for WASH Activities

This section includes activities that the Health Club, or Hygiene Club organiser can use for club sessions. Another valuable resource is the *Life Skills manuals* produced by MOE and the 2007 Health Clubs guide entitled: *A Guideline for Health Clubs*, by the Eritrean Ministry of Education, Department of General Education.

The activities are divided into four sections:

- 2.1 Introduction
- 2.2 Learning a Skill
- 2.3 Investigation
- 2.4 Action



2.1

Introduction Activities

Activity 1: A Drop in a Bucket – Why Water is Important?

Grades 1-5

Time:

Task 1: 40 minutes

Task 2: 1 hour

Purpose:

- To demonstrate how much of the earth's water is available for humans to use
- To understand that there is a limited amount of fresh clean water on the Earth and that we must look after it.



What you need:

- Toolbox: 1000ml, 100ml & 10ml measuring containers
- Cylinders or beakers (You can use two empty plastic bottles and a marker to measure the amounts on the side of the bottle.)
- A metal container / empty tin
- Toolbox: eye dropper
- 1 teaspoon of salt
- Toolbox: map or world globe.

What to do:

Task 1:

You can either do this as a demonstration in front of your class or you can organise enough materials and enable your class to perform this experiment in small groups.



Steps:

1. Ask your students to think about where water can be found on the Earth. Write their answers on the chalkboard.
2. Tell the students you are going to demonstrate how much fresh water is on the Earth and compare it to the rest of the water on the planet.
3. Prepare the 1000ml, 100ml & 10ml containers, a metal container, eye dropper. Fill the 1000ml container with water. (Use bottles or jars if you don't have proper containers and mark the measurements on them.)
4. Fill the 1000ml container with water and tell each student that this represents all the water on earth.
5. Ask students where most of the water on earth is located (students should answer in oceans and seas).
6. Pour 30mls of water into the 100 ml measuring container. This represents the earth's freshwater. Put 1 teaspoon of salt into the remaining water (Now 970ml) to represent the water found in oceans. Because it is salty, humans cannot use this water.
7. Ask the students what is at the earth's poles (use the map or globe). Almost 80% of the fresh water on Earth is frozen. Pour 6ml of the freshwater into the 10ml measuring container. The remaining 24ml represents water that is frozen in icecaps and glaciers. The 6ml represents non-frozen freshwater.
8. Use the dropper to remove a single drop of water – 0.003ml. Release this one drop into the metal bucket or old tin.
9. Make sure the students are very quiet so they can hear the sound of the drop hitting the bottom. This is the amount of water that is available for humans to use.
10. Use the idea that there is a limited amount of fresh clean water on the Earth for humans to use as inspiration for a creative writing activity. Start with the statement;

'When my community ran out of freshwater.....'


Task 2: Why is water important?

Learning Objectives:

Students understand the importance of water in their community and use it wisely.

Introduction:

Start by explaining to students that water is essential for life. Water is one of the most basic of human needs. Without water, life could not exist. It is the most valuable resource on Earth. Earth's water is always moving, and the water cycle, also known as the hydrologic cycle, describes the continuous



movement of water on, above, and below the surface of the Earth. Since the water cycle is truly a “cycle”, there is no beginning or end. Humans and all other organisms (animals and plants) depend on water for their survival.

What to do:

Drama 1

Each person takes on a different role in the community: mother, father, young person, baby, elder, business person, government official and maybe also include tree, bird, insect or mammal.

Now imagine yourself in your community with lots of fresh and clean water.

Imagine drinking all you need, doing a lot of washing, cleaning, cooking, and swimming and imagine enough water for everyone.

Maybe ask: What would your relationships to other people be like?

Now imagine another scenario:

There was a drought and the local water source went salty, the tanks were empty and there was no rain.

What would you do? What would your relationships to others be like?

Act out this drama.

After this exercise: take turns explaining what happened and how you felt about the scenario. What issues or problems arose and how did you deal with it? Has this situation ever occurred before?

Drama 2

Explore the importance of fresh water in the natural environment.

Role play: half the group are humans and half are animals and plants.

Imagine the consequences if one group used up all the water e.g. if humans used up all the water from the environment without enough left for the rivers or streams or for the animals. What would happen?

This exercise may explore the inter-connectedness between humans/ plants/animals and water.

After this exercise: take turns explaining what happened and how you felt about the scenario. What issues or problems arose and how did you deal with it? Has this situation ever occurred before?

Students should write a reflection piece in their journal exploring these questions.

Conclude this activity by reminding the students that water is essential for life, all life- but that it can easily become contaminated and cause

illness. In Eritrea our sources of freshwater are limited and are vulnerable to pollution, so we must protect these freshwater sources.

☀ Teachers Note:

In a role play, two or more students are given a character to play. The teacher explains to them the story of the role play. The students then act the story.

An example is:

Role play on water in the village

Characters: Mother, father, child.

Story: The mother has to walk a long way to get water. The child wastes water by playing with and spilling the water. The father is angry with the child.

The students act out this story using their own words.

Activity 2: Sustain Not Drain

Grades 1-5

Time: 30 minutes

Purpose:

- To introduce the concept of sustainability

What you need:

- Small /balls/small stones
- 4 hoops/tubs/bins

What to do:


Steps:

1. Take the students outside and ask them to collect 5 stones about 10 cm in length each. These are to represent 'water'.
2. Divide the class evenly into four groups and give each group an even share of the 'water'. Place each group at the corner of a square (you can pace out the distances to make them roughly even; make it at least 20 paces distance). Give each group a hoop or a bucket in which to place their 'water'.





3. Tell the groups that they are each a community that is trying to survive. In order to live, they must have enough resources – but others will be coming to take their water away. One member of the team is the 'resource watcher'. This person is going to stand at their group's hoop or bucket and watch to see they still have water in it. Another member of the team is the 'resource user' representing all members of the community who use up water. This person is going to take one stone out of their own community's bucket every 20 seconds (encourage the students to count the seconds themselves). If at any time their bucket becomes empty, they must lie down on the ground to show that the community has run out of 'water' and died.
4. The rest of the community must go out and gather water from the other communities (take them from their buckets or hoops) but they are only allowed to carry one stone at a time back to their bucket. They are not allowed to get in the way of any other team members. While this is happening, the 'resource watcher' should be checking to see that the gatherers are only taking one stone at a time. In the first round, play the game for one minute and see if all the communities survive. (At the end of one minute, hopefully, all the groups are still surviving.)
5. Play the game a second time but this time make three of the communities only three members in size (one 'resource watcher', 'one resource user' and one 'resource gatherer'). Place all the other community members into the fourth community as extra 'resource gatherers' for the big community. Take all of the 'water' except three stones from the large community and distribute them evenly between the small communities. Tell the students that the big group now represents a country with a high population density that cannot grow enough food for its entire people so they must go and find it elsewhere.



Play for one minute again and see if the small communities can survive – remind the ‘resource watcher’ that s/he must lie down as soon as their bucket is empty.

6. Play the game a third time with one large community and three small communities but this time tell the small communities that they may ‘protect’ their ‘water’ by taking their bucket and running away. If another community member catches them, they must give them one of their ‘water’. See if they can survive this time.
7. The teacher leads a discussion with the class, asking questions such as:
 - In which community did everyone survive?
 - Which community had the most items left in the pile at the end?
 - In each community was there some community member who had more than others?
 - Which communities are confident they will always have enough items for everyone as long as the pile is renewed?
 - How did the community make sure this would happen?
 - Was there a leader in the community? Did the communities listen to that person?
 - How does this activity help us in real life?

Conclusion: Reflection Time- time for students to reflect on their lesson.

Developing student reflections

- The teacher asks the question – ‘What did you learn?’ to help the children reflect on the lesson.
- Students take 1 or 2 minutes to think silently about the lesson and the question.
- The teacher asks students to respond to the question.
- Have students write a sentence or a few sentences about what they learnt from the game.

Activity 3: Who is Responsible?

Grades 1-5

Time: 40 minutes

Often people blame the government, industries, other families or neighbours for problems relating to the pollution of water supplies without considering their own contribution to the problem. School students, community members, government officers, community leaders all need to take responsibility and work together to make sure there is clean safe water for everyone.



Purpose:

- To help students to understand that maintaining a clean water supply is everybody's responsibility.
- To encourage students to take responsibility for their own actions to maintain a clean water supply.

What you need:

- Opinion Cards - three large pieces of paper with the following statements written on (one statement per piece).
Agree, Disagree and Undecided.

What to do:

Steps:

- You can be either inside or outside the classroom to run this activity.
- Place the opinion cards at eye level in a different area of the classroom or outside location (depending on if this is held inside or outside).
- Write the statement 'Keeping our school water supply clean is the responsibility of the Teachers' (you can make up your own statement to use for the activity) on the chalk board or if you're outside pose the question verbally to the students.
- Ask the students to think about the question and then move to the location of the opinion card that best matches their own point of view in relation to the statement.

- Once students have made their selection, facilitate a group discussion – why do they agree, disagree or are undecided about the statement?
- Ask the group of students at each opinion card to discuss why they have made their decision. After they have adequate time to discuss their thoughts encourage them to nominate a group leader to report back to the class.
- After each student or group speaks, others should be encouraged to ask them questions. Allow each student or group the opportunity to have their say.
- The aim of the activity is to get everyone to listen to and appreciate different people's opinions. After each group has reported back to the class ask participants if anyone would like to change where they are standing based on the arguments they heard. Explain the importance and value of considering a range of ideas and being prepared to change your mind. Ask the students if anyone changes places, what were some of the things that made you change.

Conclusion / Application:

- You can conclude this activity by having the class brainstorm things that they think they can do to help maintain a clean water supply at the school or in the wider community. Write the list on the chalk board or record it in a note book for future reference.
- This activity is a good introduction or lead up activity to planning or preparing an action project. 'Now I understand I have a responsibility to help maintain a clean water supply for the benefit of everyone, what can I do?' See notes on planning action projects Page 46

Teachers Note:

What is Brainstorming?

Brainstorming is a process for gathering ideas and developing creative solutions to problems. It works by focusing on a question or problem, and then deliberately coming up with as many suggestions or solutions as possible. It is a great way to encourage students to share their ideas and listen to those of other students.

Tips for Better Brainstorming

- Don't criticize any idea until the brainstorming session is over
- Write down the idea using the exact words of the student
- Encourage creativity. Remind the group that there no right or wrong ideas
- All ideas belong to the group. Get as many ideas as possible
- Remember that lots of unusual suggestions can lead to a great idea. Record all ideas.
- Encourage the group to use other people's ideas as starting points for new ideas.
- At the end, look for recurring themes. Try to make groupings of like thoughts and build towards consensus.

Activity 4: Dramatic Connections

Grades 1-5

Time: 45 minutes

When people throw their waste away they rarely consider that away is actually somewhere else. Similarly, when we do not use the toilet (open defecation) we don't think about what might happen to it after we leave. There are consequences related to the amount and quality of waste that we introduce into our community. This waste can have effects on the environment and our water but also to our economy and health.



Purpose:

- Highlight the links between wastes and social / environmental impacts.
- To take part in an enjoyable and participatory game which encourages creative thinking and teamwork.

What you need:

The following lists should be written on three separate sheets of paper:

List 1	List 2	List 3
A baby	A student not using the toilet (Open Defecating)	A student using the school toilet
A well	A goat walking through a field	A student using soap to wash her hands after using the toilet
A student drinking	A sick man	A student closing the toilet door after using it.
Several dirty nappies	A boy milking a goat	A girl helping to prepare vegetables for her family
A student with diarrhoea	A women cooking for her family	A family eating together
A student failing his exams	An empty pocket / wallet	A happy family



What to do:

Steps:

1. Divide participants into groups of six or into larger groups if you have more participants than is divisible by six.
2. Provide each group with one of the three lists (above). Ask each group to devise a short drama performance that must include each of the six objects or people on their list. Explain that the list can be arranged to tell a story that shows relationships between the actions and people's lives. There is no right or wrong order to use the objects or people in the drama.
3. Allow 15 minutes for the group to prepare a drama performance, and 5 minutes for each performance.
4. Discussion: After each performance ask the audience;
 - *What was the message in the performance?*
 - *Do you agree with the links that were made between people and the actions?*

Ask the performers,

- *Did you get your message across?*
- *What were the relationships that you were trying to show?*
- *Is this a realistic scenario in your community?*

Extension:

Students can write their own lists about water, sanitation and hygiene to perform for the school or the wider community.



Learning a Skill

Activity 5: Hygiene, Sanitation, Water and Health Information Walk

Grades 1-5

Time: 1 hour

Purpose:

- To learn the skills and knowledge required to wash hands, use the toilet, use a hand pump and dispose of waste properly.
- To learn the skills and knowledge required to keep water clean and handle food safely.

What you need:

- Toolbox: *Hygiene, Sanitation, Water and Health Information Cards* (see page 20 for examples of this).
- Pen / pencil and paper
- Any materials that can help students do the action written on the cards (optional).

What to do:

Steps:

Task 1: Train Your Friend

1. Choose six different locations around the classroom or outdoor area that your students will visit to collect information. The information can be on six different desks or in locations on the floor.
2. At each location place an *Information Card* (see page 20) and any materials you have that can help students to practise the action written on the card.
3. Split your class into groups of six (one student from each group will go to a different place on your information walk).

4. Explain to the students that they will be responsible for training the other members of their group about how to keep themselves and their water clean and healthy. Each member of the group will need to go to a different location to learn what to do. When they have understood the information they will teach the rest of their group.
5. Encourage students not to copy the information down, but to take effective notes that will enable them to train their fellow students.
6. Let each group decide themselves who will go to which location as long as each group has a representative visiting each location.
7. When the students have had long enough at the locations, ask them to go back to their groups. Ask each student to pass on their new skills to the other students in their group.
8. The idea of this activity is that all students get the information they need without having to visit all locations. It teaches students research skills and encourages them to read and process the information to share with others.

Extension:

The Toolbox also contains hand washing posters which can be discussed.





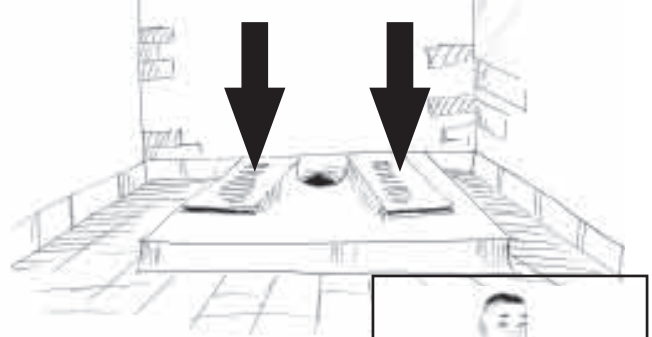
Hygiene, sanitation, water and health information cards

Tips for Hand washing

1. Wet your hands with water.
2. Rub soap into the palm of one hand.
3. Rub your hands together for 20 seconds so you produce lather.
4. Make sure you scrub between your fingers, under your fingernails and the backs of your hands.
5. Rinse your hands well with clean water for at least 10 seconds.
6. Shake your hands dry.



Tips for using toilets



1. Pit toilets

1. Put your feet on either side of the hole. After using the toilet, clean yourself by pouring and splashing water. Usually this requires one mug of water.
2. Clean around the toilet hole using water.



2. Ceramic pans

1. Pour about a mug of water into the pan to make sure it is wet before using the toilet.
2. Put your feet on the footrests and use the toilet. After using the toilet, clean yourself by pouring and splashing water. Usually this requires one mug of water.
1. Pour water into the pan to clear away all urine and faeces.

3. Boys should hit the hole, not "spray" around.

4. Leave the toilet clean

5. Wash your hands!



Tips for fetching water from a hand pump

1. Check if your bucket or container is clean. Has it been washed out with soap and/or sand today?
2. Wash your own hands before you begin using the pump
3. At the hand pump, pump slowly. Do not jiggle or slam the handle.
4. Do not put your hands or fingers in the water you are fetching for drinking as other people will use it.
5. Check that the drain is clear so that spilled water will not collect in puddles.





Hygiene, sanitation, water and health information cards

Rules for solid waste disposal

1. Have a waste bin or waste box in each class. Children should put all solid waste in this.
2. Once a day, the solid waste from the class should be deposited in the school's waste pit. This should be separated into organic and non organic waste. Organic waste should be composted. Non organic waste should be buried in the school pit.
3. Once a day, the solid waste from the school compound should be deposited in the school pit.
4. Waste should not be burnt as this creates pollution. Burning plastics releases toxic chemicals.



Tips for keeping water clean

1. Take cover off pot and use dipper to draw the water.
2. Pour the dipper water into a cup or glass and then hang the dipper back up.
3. Cover the pot of water.
4. Drink the water from the cup or glass without putting your mouth on the cup or glass. (For little children this is difficult – after drinking someone helps them wash the cup or glass).
5. Put the cup back in the right place.



Eating hygiene

1. Always wash hands before eating.
2. Always wash hands before preparing food.
3. Children should not throw around food.
4. Do not eat food off the ground
5. Ensure cooking utensils are washed after every use.



Activity 6: Washing Our Hands

Grades 1-5

Time:

Task 1: 30 minutes

Task 2: 30 minutes

Task 3: 30 Minutes



Purpose:

- To understand the importance of washing hands.
- To have the skills and knowledge to wash their hands properly.

What you need:

- Toolbox: soap
- Water
- Cooking Oil
- Tea or ground coffee

Introduction:

Start by explaining to students that most intestinal, stomach, and cold viruses are spread by our hands. Through touch, micro organisms are transferred from small amounts of faeces on our hands or the fluids in our nose and mouth to something (e.g., a pencil, food, a cup) or to someone else. When other people bring their hands or the object near their mouths, the bacteria or viruses may find a new home.

What to do:

Task 1: Shaking wet hands in a circle

- Ask the students to stand in a circle.
- One student will pretend to sneeze and cover his/her mouth, then wet one of her/his hands.
- Ask this student to then shake the hand of her/ his neighbour.
- The neighbour then shakes the hand of the next student in the circle and so on. The students will be surprised how many of them will still feel the wetness from the hand. **Students should wash their hands after this demonstration.*
- Remind students that most intestinal, stomach, and cold viruses are spread by our hands.
- Lead a discussion based on this experience, how many students felt a wet hand? What would happen if a virus or bacteria were in this wet



hand shake? What would be the best way to prevent the spread of such a virus or bacteria?

- Write on the chalkboard all of the suggestions made by your students.
- The next part of the activity is to test your students' hypothesis.

Task 2: What is the most effective way to remove bacteria from your hands?

- Ask three classmates to volunteer for the experiment.

For the student volunteers;

- Rub 1 tablespoon of cooking oil all over their hands until completely coated. Then sprinkle 1 teaspoon of tea or ground coffee on hands and rub it around until it's evenly distributed. The tea or coffee will be like bacteria. It's all over!
- Wash hands as follows, **rubbing them briskly for 20 seconds**:
 - *Student #1*: do not wash your hands but shake them or rub them on a towel.
 - *Student #2*: wash hands with **water** and **no soap**
 - *Student #3*: wash hands with **water** and **soap**

For the rest of the class:

- Observe the three hand washing methods.
- Record the results.
- Lead a discussion with students based on the results of the experiment;
 - *the method of hand washing that removed the most "bacteria" was...*,
 - *the method that removed the least "bacteria" was...*,
 - encourage students to suggest their own thoughts on good hand washing practice.

Ask students when they need to wash their hands. The answers you are looking for include:

- after using the toilet
- before eating
- after blowing your nose
- after coughing or sneezing into your hands
- after playing outside
- after touching animals or animal waste
- before and after preparing food
- before and after changing a nappy
- before and after treating wounds or cuts
- before and after touching a sick or injured person



Task 3: Hand Washing Demonstration and Song

Remind students that our hands spread an estimated 80% of common infectious diseases like the common cold and flu. But these disease-causing germs slide off easily with good hand washing techniques. Hand washing is easy to learn, cheap and very effective at stopping the spread of disease-causing germs.

To conclude these activities demonstrate the steps for good hand washing technique to your students.

1. Wet your hands with water.
2. Rub soap into the palm of one hand.
3. Rub your hands together for 20 seconds so you produce lather.
4. Make sure you scrub between your fingers, under your fingernails and the backs of your hands.
5. Rinse your hands well with clean water for at least 10 seconds.
6. Shake your hands dry

Repeat the demonstration, this time have the students sing the '*Hand Washing Song*' (see next page) while rubbing their hands together. This will teach them the amount of time it takes to clean their hands properly. To make washing hands more fun, you can have students create songs that are 15 seconds long.

You can repeat the activity; whenever hand washing is required ensure students demonstrate the steps for good hand washing technique using soap. Encourage them to sing the song.

The Hand Washing Song

*Wet, wet, wet your hands, wet with water clean
Wash them, wash them, wash your hands, to keep them always
clean*

*Put, put, put some soap, rub it in your palm
Use the soap, use the soap, to make your hands all clean*

*Rub, rub, rub your hands, with soap and water too
Scrub them, scrub them, scrub between, your fingers all the ten.*

*Rinse, rinse, rinse your hands well with water again
Clean them, clean them, clean them well, germs go down the
drain*

*Dry, dry, dry your hands, dry them really well
Shake and shake, to get your hands all dry.*





Investigating

Activity 7: School Compound Mapping

Grades 1-5

Time: 40 mins + 40 mins

Purpose:

- To encourage students to think and talk about water, hygiene and sanitation issues in their own school environment
- To enable students to explore their school compound, improve their powers of observation and their recording skills.

What you need:

- Examples of maps
- Pens or pencils
- Copies of an outline map of the school site or paper for students to create their own
- Clip boards or something solid for student to rest against while they are creating maps.

What to do:

Steps:

Before the lesson

1. Draw a large outline map of the school compound. Be sure to include major features such as buildings, play areas, paths, fences, etc.
2. You may like to include a map key. Use symbols to represent the features mentioned above as well as trees, grass, dirt, rocks, etc
3. If you are able make enough copies so that when divided into small groups, each student in your class has access to a copy to work with.
4. If you are unable to make copies, draw this onto a chalk board and have your students copy it down in their note books or other paper ready for your lesson.

During the lesson

1. Bring in a series of maps to show your students. These can be from the library, a street map, or from books and atlases. Try to get a variety of map scales and purposes (i.e., not all road maps).
2. Ask students what these are and why people use them. See if they can identify the features that the maps share in common. What is different about them?
3. Ask students if they have ever made a map before. (Some may have made maps to buried treasures with their friends).
4. Tell them that they are going to make a map of their school compound today. Remind them that maps are views of an area from above -- like what you would see from flying in an airplane.
5. Divide the group into teams of three or four students (or larger if necessary).
6. If you have made copies of the map distribute one map to each group, if not then ask each group to copy the outline map you have drawn on the chalkboard.
7. Familiarize the students with the study area by having them identify features on the map, discuss the symbols used in the map key, so that all students use the same symbols for these features.
8. Explain to the students that they are going to survey the school grounds for water, sanitation and hygiene features and mark them on the map.
9. Ask the groups of students to head out into the school compound (encourage each group to go to a different location) and make their observation.





Each group should look for and mark on their map the following features;

- Location of water supplies i.e. well, water tank, hand pumps
 - Where Toilets exist
 - Areas where open defecation occurs (if relevant)
 - Hand / body washing facilities
 - Food preparation areas
 - Places where animals are kept
 - Waste disposal areas i.e. bins, rubbish pits, waste water drainage
10. Allow about 30 minutes for students to create their maps. Periodically check with each team to see how they are doing and lend assistance as needed.
11. When all of the groups have finished, bring the teams together. Lay out all of the maps. Spend some time comparing the features.
12. Back in the class room combine all group maps into one comprehensive class map of the school compound showing all of the features above.

Next day or new session:

1. As a class, discuss the school compound map to identify possible problems (through questions) e.g. animals kept near water supply, play areas near defecation sites, waste water pooling at water sources etc.
2. Are these problems putting student's health and safety at risk?
3. Are there any other problems with the school compound identified i.e. unsafe play equipment, damaged fences etc?
4. Can students think of possible solutions to the problems they identify?
5. In their groups ask your students to create a new vision of the school compound i.e. draw a new map imagining a better situation.
6. This can be presented to the School management or to a PTA meeting.

Extension:

Based on the problems identified through this mapping exercise and the solutions students have identified your class can consider taking action.

Decide what students should do in response to an issue identified, e.g. what can be done to keep animals away from the well? What can be done to stop children from defecating near a play area? Use the notes in 'Planning an Action Project' section to help guide the development of a project for your students.

Activity 8: What's in your Water?

Grades: 1-5

Time:

Task 1: 1 hour

Task 2: 1 hour

Task 3: 1 hour (allow 1 week for students to do research)



Purpose:

- To become aware of how water sources can be contaminated by faeces.
- To be able to identify some diseases associated with drinking contaminated water.

What you need:

- A copy of the 'On the Way to School' story (see page 30).
- Note books / paper
- Pens or pencils
- Background information about diseases that can come from drinking contaminated water (check with your local doctor / health post).

Introduction

According to UNICEF (1999) one gram of faeces can contain 10, 000, 000 viruses, 1, 000, 000 bacteria, 1, 000 parasite cysts, 100 parasite eggs! Infectious diarrhoeas (including dysentery, cholera and typhoid) are caused by infectious agents like viruses, bacteria and parasites. These agents get into humans via the mouth and are passed out in faeces. So faeces are enemy no. 1! Ensuring that faecal material does not get into water supplies at the source is probably far more effective than boiling, filtering, and covering water tanks. We need to protect well water and rainwater from faecal contamination.

Open water sources can also be contaminated by freshwater snails that can carry a parasite dangerous to humans. This parasite can penetrate the skin of humans and develop into worms within the body. This disease is known as bilharzias or schistosomiasis. Children are particularly susceptible to contracting this disease as a result of playing in contaminated water. People using this water for washing are also at risk.

Traditionally in Eritrean culture, people washed clothes using soap made from the berries of a plant called *Phytolacca dodecandra*, ('Shibiti' in Tigrianiya). The berries from this plant not only act as a cleaning agent, but also kill the snails that could potentially carry disease. Due to the

introduction of commercially available soap products, the use of Shibiti has declined. In recent years, people have been using synthetically developed chemicals to treat contaminated waterways but the berries of Shibiti could be used to treat small scale outbreaks.

The berries are most potent to snails when picked unripe, green and dried in the shade. They should then be ground into a powder, mixed with water, left for 24 hours and stirred occasionally. This mixture should be filtered and used at 1 part per million for 24 hours. It is useful to note that this mixture has little effect on other plants and animals in the waterway.



The shibibi tree with berries that can be used as a soap and a pesticide.

What to do:

Task 1: On the Way to School Story Reflection

Read the following story to your group. If your group is made up of older students they might like to carry out a role-play.

On the Way to School

One sunny morning while walking to school a boy felt like he needed to go to the toilet, he was too far from home to go back and still too far from school to wait that long. He looked around for a private place to go; he noticed a clear area behind some bushes and found a comfortable position.



Because he had to stop the boy was now late for school, when he was finished he quickly pulled up his trousers and continued on his way. The boy was in such a hurry that he did not stop to bury his waste or to wash his hands after. He also did not pay enough attention to see that the spot he had chosen was very close to a bore hole and hand pump.

When it next rained the faeces left unburied by the boy was washed along the ground and as the rainwater soaked into the ground so did the faeces. It made its way through the ground water into the bore hole. The rainwater carrying little bits of the boy's faeces also added water to puddles that had formed around the hand-pump where there is no proper drainage channel to direct water away.

- After the story ask questions to help children to reflect critically on the scenario presented. For example,
 - Ask the students what are some of the problems (potential risks of contamination) in this story? Answers should include, open defecation, not burying waste, not washing hands, faeces run-off after rain, poor drainage at hand pump.
 - Does this kind of thing happen in your community?
- Ask the children for local names of diseases that may be transmitted by drinking contaminated water.
- Link the story with an overview and explanation of the diseases that can come from drinking contaminated water.
- Depending on age, include official names, symptoms, transmission, prevention and treatment. Invite questions from all children to get them to understand how many diseases can result from contaminated water.

Teacher Note

With a younger class you can stop the activity here and then follow up with the suggestion in the extension section of this activity.

Task 2: Contamination Investigation at your school

In your school grounds investigate whether your water storage may potentially be contaminated by faeces.

- As a class, walk into the school ground and locate your nearest water storage. Write answers to the following questions;
 1. What is the water used for (i.e. drinking)?
 2. Does the water smell or look unusual?
 3. Does open defecation occur near the water storage?
 4. Are animals kept near the water storage area (animal waste can also contaminate drinking water)?
 5. If you have toilets, how close is the nearest toilet or septic tank?
 6. Has anyone ever tested the quality of the water?
- Return to the classroom. Discuss the answers to the questions.
- Discuss with the students whether they think there is a possibility that their well water may be contaminated.
- Speak to the local Health Clinic about testing the well water.



Task 3: Contamination Investigation - your local supply

Students are to investigate whether local water sources may potentially be contaminated by snails carrying the parasite that causes the disease bilharzias.

- Ask students to conduct some interviews with family or community members after school.
 1. Are snails present in your local water source?
 2. Is anyone in your community affected by the disease bilharzias?
 3. Students are to interview an elder about the use of Shibiti as soap. Did parents or grandparents ever use the berries of the Shibiti plant to clean their clothes?
- Students to discuss their research findings as a group at the next club meeting.
- If the local water source is found to contain dangerous parasites, action should be taken. Community members should be made aware of this. Students could discuss the use of Shibiti to eradicate snails.

Conclusion:

Remind the students that water is essential for life, but that well water can become contaminated by faeces from open defecation, soiled clothes, leaking septic tanks or animal waste. If we drink contaminated water we can become sick. There are many diseases associated with drinking contaminated water. We must all be careful not to let faeces (human waste) enter our water supplies.

Extension:

You can follow this activity with the 'Clean Living Campaign' activity on page 49.



Activity 9: Safe Household Water Collection and Storage

Grades 1-5

Time:

Task 1: 30 minutes

Task 2: 1 hour after school, then 1 hour in class

Regardless of whether or not collected household water is initially of drinking water quality, it often becomes contaminated with germs during transport and storage due to unhygienic storage and handling practices.

Purpose:

- To understand the possible sources of contamination if water is not collected or stored safely.

What you need:

- Drawings of different implements used to store and draw drinking water (see examples below).
- Or real examples of these implements
- Slips of paper
- Pens / pencils

What to do:

Steps:

Task 1: Water containers

1. Bring in examples of different implements used locally to store or draw water, e.g. a drum, a pot, a bucket, a bottle, a can, a filter, a ladle, a dipper, a jar, a tin, a cup, a glass. Include the items used in school. If you are unable to bring in examples you can prepare drawings of them.
2. Prepare cards or slips of paper with the names of the implements.
3. Lay out the drawings on the floor or arrange the examples you have collected.
4. Now ask the students to group the drawings into storage vessels and drawing vessels.
5. Put the name cards under the drawings or ask the students to do so. Older children may write and place the cards themselves.
6. Once you are confident that your students recognize and know the names of the objects, mix up the drawings and/or name cards and ask your students to regroup them.



7. Ask the students to identify which types of water storage vessels/ water drawing utensils are safer and less safe and give reasons for their choices. This can also be done as a sorting game, by ordering them into less safe and safer, or from worst to best. The following ideas may assist you to guide students in determining which storage containers are safe;
 - **Storage vessels with wide openings** – are vulnerable to contamination because more water is exposed, easier to put in hands, cups and dippers that can introduce germs, wider openings make it harder to pour water for use without spillage. Safety can be improved by introducing a lid or cover.
 - **Containers with narrow openings** – are easier to fill / use without spilling, offers more protection to collected water while being stored or used as less water is exposed, and prevents you from putting cups, hands or dippers inside the water.
8. Set the students the task of making a drawing of the water storage and drawing utensils that is used in their home and bring to school for the next session.
9. Once students have brought in their drawings of utensils used at home, facilitate a discussion on which utensils are safer and less safe.
10. Ask the students to think of alternatives or ways to make current utensils or water collecting practices safer.

Task 2: Observing collection practices

1. Ask the children to accompany their parents in the process of water collection from the nearest, hand-pump, well or rainwater tank.
2. Tell them to observe good and bad practices. Ask older children to record some of the things they observe. They can, for example, list answers for the first five users:



- the types of container;
 - the sex of the persons collecting;
 - the perceived age groups of the persons collecting (agree in advance how to divide age groups);
 - whether the collectors rinsed the container before filling;
 - whether they washed hands or not;
 - whether their hands touch the water during transport or not.
3. Back in the classroom ask the children to work out, individually or in small groups, the totals of safe and unsafe water practices for each group and write these down in a table (see example below).

Safe and unsafe practices chart

After observing water collection practices record on the chart.

Type of Container	Male	Female	Child	Youth	Adult	Elderly	Rinsed container	Washed hands	Touched Water
<i>Bucket</i>	*			*			Y	N	N

4. Use the information the students collected to facilitate a group analysis and draw conclusions on the characteristics of water collectors and safe and risky collection behaviours. Some sample questions:
- What type of persons did you see most often collecting water?
 - What may that mean for the lives of these persons?
 - Did most collectors use safe practices?
 - What does the information in the table show you?
 - What kind of person(s) used safe practices?
 - What do you conclude about hygienic water collection in your community?
 - Do the observations give the true picture or may it be different at other times?
 - What could the users do to improve their water collection behaviours?

Conclusion:

Remind students that keeping water as clean as possible is very important. When rain falls it is very clean and contains no bacteria and very little salt. However, by using bad water collection or storage practices we can contaminate our water supplies. Therefore, it is important to collect and store drinking water safely, otherwise we can become sick.

Activity 10: Good Waste Management

Grades 1-5

Time:

Task 1: 30 minutes a week for many weeks (depending on time you have available).

Task 2: 1 hour

Purpose:

- To identify various types of solid waste and where they occur.
- To identify negative effects of careless disposal.
- To develop positive attitudes to a clean environment.



What you need:

- 4 plastic containers, (can use water drinking bottles cut in half)
- 4 different waste materials -plastic, paper, fruit waste, peel, skins, vegetables, leaves, etc.
- Paper
- Drawing materials
- Locally available waste materials

Introduction:

As our lifestyles have changed, so too has the waste we produce. Wastes are no longer just composed of organic materials; they also are made from metals, plastics and hazardous wastes. Also, we are producing a lot more waste. This means that dumping mixed waste around our communities at different places, or burning it, is no longer effective in removing waste. These new wastes do not breakdown quickly, so the wastes remain for longer, potentially affecting our health, environment and livelihoods.



What to do:


Steps:

Task 1: Waste Decomposition

1. Take a few different waste materials and place one in each container. Leave them in the containers and check them each week for at least six weeks (depending on the time you have available).
2. Each week record: - Are some things changing? Which are changing and which are not?
3. This experiment will show students that different materials break down at different rates – some organics (matter derived from living things) can break down very quickly while things like plastic may not break down. With organic materials some have high nitrogen and break down quickly while others have higher carbon and break down slowly. When organic materials break down they will make a smell and attract flies and rats.
4. Once you have finished your observation (after a number of weeks) discuss with students:
 - What is the difference between organic and inorganic waste?
 - What happens if we throw inorganic waste in waterways and on the ground?
 - What breaks down the quickest, an apple core, a plastic bag, or some paper?
 - Can waste affect human health?

Task 2: Waste not, want not

1. Ask your students to go out and bring different types of waste materials from the school compound.
2. Ask the students to show all the materials that they have found and put the same materials together (cans with cans, paper with paper, etc.).
3. Facilitate a discussion with the students on which materials are biodegradable (easily broken down by natural processes) and which are non-biodegradable (cannot be easily broken down by natural processes).
4. Ask the students to think of the effects of litter in the environment, health and livelihoods. Include ideas such as:
 - bad smell
 - insects breeding
 - rats
 - implications for health
 - mosquitoes breeding in water

- 
- accidents (cuts, falls)
 - general contamination and degradation of the environment.
5. Write a list of students' ideas on the chalkboard or large sheets of paper.
 6. Encourage students to think about ways to improve the problem in your community with waste by facilitating a discussion about reduce, reuse and recycling practices in the homes of the children and in the community.
 7. Ask each student to draw a picture of an item of common waste showing a way that it can be disposed of more appropriately, reused or recycled.
 8. Make sure the students wash their hands after touching waste materials.
 9. Lead by example in the classroom such as,
 - use old jars or tins to store classroom materials
 - use both sides of all sheets of paper used in the class
 - supply a bucket or box for students to put their organic food scraps in (empty this on a compost heap at the end of each day.)
 - use clean household waste for art and craft activities, i.e. Boxes, cartons, plastic bottle or other packaging
 - Use jars and other re-used containers for holding paints etc.
 - Engage older community members to teach students how to make or repair things e.g. clothes, shoes, toys.

Conclusion:

Remind students that poor waste management practices can impact on our health and on our environment. So we all need to manage our wastes in ways to minimize impacts on our community health.

Ideas for Action: Organise a clean Up of the school yard or local community.



Action

Activity 11: Planning an Action Project

Grades 1-5

There are dozens of different types of projects that your students might be interested in that will help them to learn more about the importance of water, sanitation and hygiene and, at the same time, address a local problem.

Some projects might focus on teaching others about water, sanitation and hygiene issues. Some might help to actually improve the conditions of water, sanitation and hygiene, of your school or community such as students practising safe behaviours like toilet use and personal hygiene practices.

The following are steps that will help you and your students to plan your own action project.

Choose a topic for your project to focus on

You and your students can get some ideas about water, sanitation and hygiene issues through information supplied in 'The Healthy School - A water, sanitation and hygiene manual for Eritrean elementary schools' or by collecting information from newspapers or other media, interviewing community members and parents, or contacting organisations and government agencies that focus on water, sanitation and hygiene issues. You can also encourage students to explore their community and identify problems firsthand.

Encourage students

When planning the action project, encourage student ownership and initiative. The more students are involved in the project, the more they will get out of it. As much as possible, allow students to make their own decisions. It is also important to help students to appreciate the value of their work. Students need to know that their project, no matter how small, is valuable.



Set a goal

Have a clear goal for the project and a plan to accomplish this goal. What would you like to see change as a result of the action project? Set goals that can be accomplished. Do not take on projects that are beyond the available resources and time.

Think about timing

What is the timeline for the project, such as the approximate start date and ending dates? Can it fit into your school term or school year? Does it fit in with other plans in the school or the community?

Map it out

Before getting started, think about the specific steps or tasks that need to be accomplished to help meet the objectives of the project. Creating a timeline or a task list can help to get a clear overview of the project.

What do you need?

Who needs to be involved? What supplies or equipment are needed for the project? Try to identify individuals, groups or organisations that might be able to provide useful information, specific skills or expertise, or other help.


Encourage support for your project

Think of ways to promote and generate support for your project, from within your school or the wider community. Conflict can sometimes occur when students interact with community members or parents who don't agree with a specific activity or who don't feel that action projects are an appropriate educational approach. In many cases you can prevent this by discussing projects with parents, school members and community members and by explaining how action projects can enhance the children's learning and may even improve the conditions of water, sanitation and hygiene in the community.

Appraisal

How will you know if the project has been a success or that the students' knowledge has increased?

Taking time to appraise a project helps students to understand what they've accomplished and allows them to recognise how their project has assisted their personal growth.



Action Projects can make a big difference, not only to water, sanitation and hygiene in the community but also to your students. By taking action and contributing to a school or community project your students can feel a sense of accomplishment and satisfaction.

Ideas for projects can come from many sources, including your own interests and experiences.

Here are a few suggestions of possible projects:

Develop and perform a play for the community – A play about water, sanitation and hygiene issues can educate others and serve as a fundraiser for other action projects. Work with local drama teachers or theatre groups to help get your play started.

Develop a newspaper or newsletter – Creating a newspaper or newsletter on water, sanitation and hygiene issues can help students to fine-tune their writing skills and explore and share their thoughts. Students might like to distribute the newspaper or newsletter beyond their school to raise the profile of the issue in the community, with a specific target audience or media.

Do a school waste audit – Conduct ongoing surveys of the school's waste and document the results. Present the results to your school administration along with ways to reduce waste. Refer to the Resource section at the back for an example of a waste audit and other audits you can conduct at your school.

Participate in decision making – Students can learn a lot about the environment and learn citizenship skills by getting involved in issues faced by the local community. The students' ability to study an issue from all perspectives and develop an opinion can be developed. They may need to contact organisations, request information, write letters, conduct surveys, circulate petitions, build coalitions with other schools or groups, and make presentations.

Survey the community about an issue – Students can find out how a community feels about an environmental issue by surveying people about their thoughts and points of view. The survey can also lay the groundwork for future action projects by identifying issues that people are most concerned about.

Test your local water – Water testing can be the first step towards discovering local water problems, so that people can decide what action is needed to solve those problems. Test water at several locations and compare the results to water quality standards.

There is a water testing kit and instructions in the Toolbox



Activity 12: Clean Living Campaign

Time: 1-2 hrs (Posters)

Half a day (Painting)

Purpose:

- To understand examples of good and bad personal hygiene.
- To understand the importance of maintaining good personal hygiene.
- To design and create materials or a painting to educate others about the importance of maintaining good personal hygiene.

What you need (Posters):

- Paper
- Drawing material / Paints
- Toolbox: scissors / Glue (optional)
- Examples of public education materials to show students (optional).

Introduction:

Hygiene is the practice of keeping oneself and one's surroundings clean, especially in order to prevent illnesses or the spread of diseases (Postma et al, 2004). This includes, using the toilet, brushing your teeth, washing your face and hands, and looking after hair and nails. If you learn good practices when you are a child you can take these lessons throughout your whole life. Teaching children to keep their body's clean is an important part of keeping them and their families healthy and helping them to feel good about themselves.



What to do:

Steps:

1. Start by introducing the idea that our personal hygiene practices can affect our own health, or the health of our family.
2. If you have carried out the **'What's in your water?'**, **'Safe Household Water Collection and Storage'** or the **'Washing Your Hands'** activity your students should have a good understanding of the kind of things that can cause contamination of water or the spread of germs and illnesses. Refresh their memories by asking them for ideas.
3. If you have not carried out either of these activities then spend some time holding a brain storm activity with your class about things that we should do to ourselves or our surroundings that will prevent illness or the spread of disease.
4. Write students' ideas on the chalk board.
5. Now explain to your class that a very effective way of getting people to practice good healthy behaviours is to have public service announcements or awareness campaigns. You might like to give an example of one from your community that will be familiar to your students.
6. Challenge your students to design their own materials (posters, small signs, banners) to help educate others about the importance of maintaining good hygiene.
7. Your club can work as individuals, pairs or small groups according to the size of the club and the availability of materials.
8. Ask each group, pair or individual to think about what message they would like to include in their public education materials and ask them to share their idea with the rest of the class.
9. You can either give suggestions of possible topics or let them decide themselves; try to encourage the creation of materials that would be most useful in addressing issues with sanitation or hygiene in your own school or community. These could include:
 - Using the toilet (if available) rather than open defecating.
 - Instructions for using toilets (if available) properly.
 - Tips for keeping toilets and/or hand washing facilities well maintained.
 - Washing your hands after using the toilet, before preparing food etc.
 - Washing your face / body.
 - The importance of burying your waste (if open defecation is occurring).
 - Instructions for properly washing your hands.

- Encouraging Students to bring their own drinking water to school.
- Keeping finger nails short and clean.

10. Tell students that before designing their public education materials (posters, small signs, banners) they should decide who is their audience. For example, they can target a particular group of people (peers, parents, younger children, mothers, farmers etc.)

11. They should also decide what their message will be and if they need examples to help get their message across. Explain that by doing this before they start it will make it easier to come up with a good design.

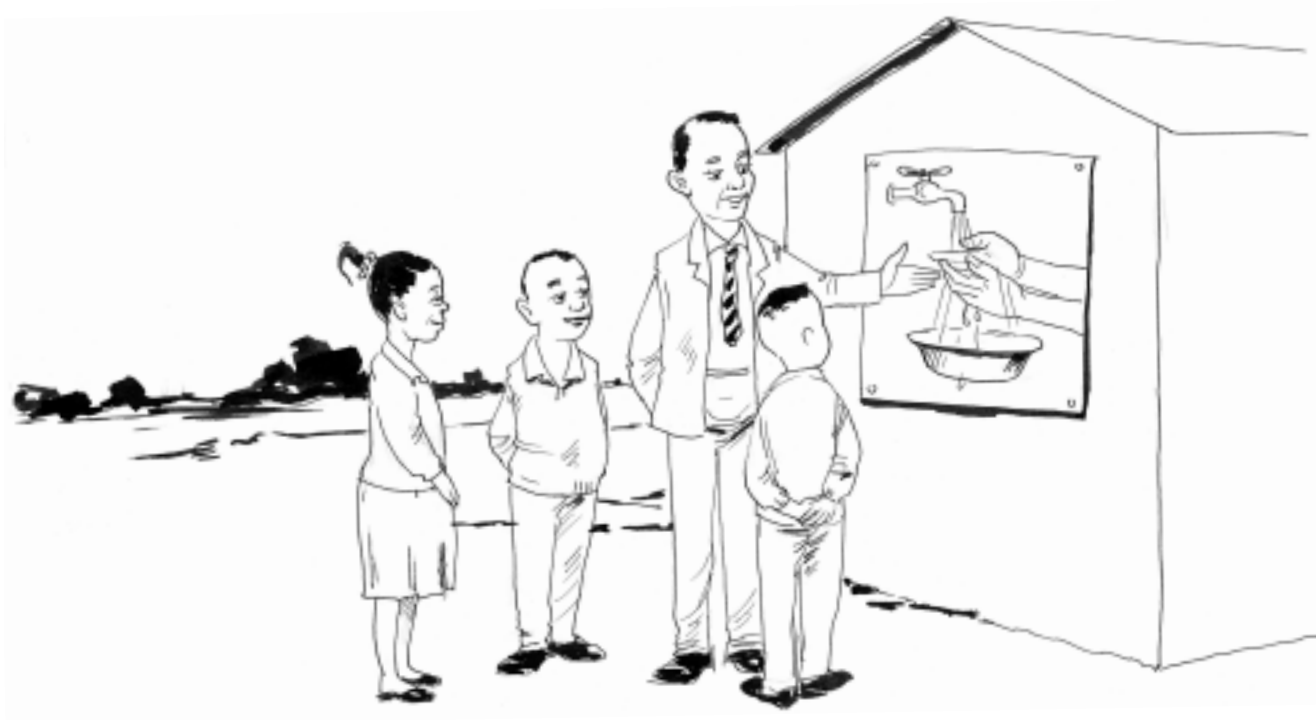
12. Before the students start, have them brainstorm in their groups what makes an interesting and effective public information product (you might like to get examples from health workers or other organizations to give the students some inspiration).

Tips for interesting and effective public information products:

- presents a clear message that is easy to read
- relates the message to people's lives
- is attractive and will catch people's attention

13. Have students draft their public education materials (posters, small signs, banners) before working into a final version. Encourage them to be creative, use colour, drawings, paints or other ways to make their work attractive.

14. When your students' public education materials are complete place them around your school or community in areas that are relevant to the issue. e.g. Toilet use poster in the toilets, hand washing instructions in classrooms near handwashing facilities etc.





Hygiene Wall Painting (option A)

An alternative to each student producing their own poster, you could create a school painting about maintaining good personal hygiene.

A wall painting is an artwork painted on a permanent surface, such as a wall or a fence, or even a structure such as a rainwater tank. Paintings are usually painted in a prominent position where they can be viewed by the public. Paintings are big and colourful – the bigger and the more colourful the better.

Paintings can be made in urban or rural areas. This task creates a painting on a wall in a prominent position in your school or community to help inform others about the importance of maintaining good personal hygiene.

You might like to choose the outside wall of the toilet block in your school or your water storage area.

First you will need to get permission from the owner of the wall.

What you need (wall painting) :

- Exterior paints in various colours
- Toolbox: Paint brushes
- Spray can of sealer (if available)
- Large piece of paper

What to Do:

Steps:

1. Think of a short, catchy message about personal hygiene to include in your mural design. Use the suggestions of possible topics listed in the poster activity above as inspiration. Write the slogan in your local language and in English.
2. On a large piece of paper, design a great picture to go with your slogan.
3. Draw an even grid over your design.
4. Draw another grid onto your mural wall to help you place the picture on the large surface in the correct proportions.
5. Draw the mural on the wall in pencil or chalk first.
6. Paint your mural and slogan neatly and clearly on the wall.
7. If available, spray the finished mural with clear sealer once it is dry. This will help protect the picture from fading and peeling in the weather.
8. Hold an 'unveiling' or 'opening' event for the mural and invite the local community, community leaders and media. You could launch the mural with speeches about good personal hygiene practices, perform a song, a play or conduct a clean-up of the local area.



Extension:

Follow up the placement of these materials by interviewing students or people in the community to see if they have seen the material and if they have changed their behaviours or done something different as a result of the campaign. E.g Have more students used the toilets? Brought their own drinking water? Washed their hands before eating? Are the toilets cleaner now? Have more people buried their waste after open defecating?

Hygiene Wall Painting (option B)

If you do not have access to coloured exterior paint, another way for your school to promote hygiene messages is through a large exterior blackboard on the wall of a building. Students can then be responsible for creating and drawing up a new health message each week in chalk. For hygiene messages, a good location would be the wall of the school toilet block. The Toolbox contains blackboard paint for this purpose.

What you need :

- Toolbox: Blackboard paint
- Cement (to even out the wall surface if it is not flat)
- Toolbox: Brushes
- Chalk

What to Do:

Steps:

1. You will need to choose a wall surface that is flat so that it will be smooth enough to write on with chalk. If your wall is rough, you can use cement to prepare a flat, smooth surface.
2. Once your surface is prepared and dry, paint an area with the blackboard paint.
3. This then becomes the place for weekly hygiene messages. Teachers can select students to be responsible for preparing new messages.

Extension:

Follow up the creation of your chalk board by interviewing students to see if they have seen the messages and if they have changed their behaviours or done something different because of seeing it. E.g. have more students used the toilets, washed their hands, before the blackboard? Are the toilets cleaner now?

Activity 13: Testing Water Quality - The Hydrogen Sulphide (H₂S) Paper Strip Test

Use on rainwater from the roof of the school and your local drinking water supply.

The H₂S test is a simple test that will tell us if the water being tested is contaminated within three days (or less) depending on the amount of contamination. The test identifies if hydrogen sulphide (H₂S) is in the sample. H₂S is produced by faecal coliform bacteria. Faecal coliform is a type of bacteria that lives in the gut of humans and animals, if it is found in the water it means that harmful bacteria or viruses could be in the water. If the water being tested changes colour, this means that

hydrogen sulphide is present, and also indicates the likely presence of bacterial contamination by faecal coliforms in water. This also means that we need to take urgent action. The Hydrogen Sulphide- H₂S Paper Strip Test uses a paper strip to check for bacterial contamination in drinking water sources. The gas that coliform bacteria produces is called hydrogen sulphide (this is the gas that smells like rotten eggs). In order to check for the presence of coliform bacteria in water, a water sample is collected into the test bottle with the paper strip. Chemicals have been mixed into a solution and placed on the paper strip. The paper strip will react with the water sample by turning black if it comes into contact with hydrogen sulphide. If the water sample or paper-strip turns black, this indicates that hydrogen sulphide was produced. This means that it is likely that bacteria of faecal origin are present in the water- that is, the water has been contaminated with animal or human waste.

The advantages of the H₂S Paper Strip test are, that it is low-cost, does not require samples to be shipped or refrigerated, does not require a laboratory or expensive equipment, and most importantly, it is easy to understand and carry out in the field!

Purpose

To help the students understand the importance of doing regular H₂S tests on drinking water and to provide them with the opportunity to observe and record the results of the water test.



What you need:

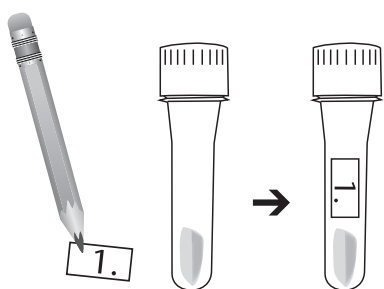
- Toolbox: H₂S paper strip test
- Water samples – for water collection
- Labels for jars – to record where water was collected
- Plastic gloves for collection of water (incase water is contaminated)
- Optional map of area to record water collection
- Result sheet

What to do

Now that the students have learned about contamination theory use this test to see if the school drinking water contains H₂S which would indicate that it is contaminated with coliform bacteria.

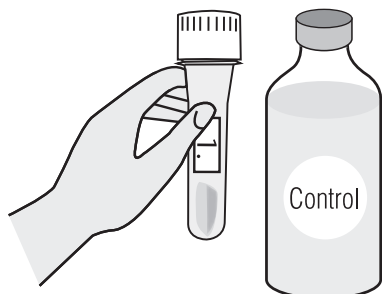
Read the information on the H₂S Paper Strip Test and then follow the instructions below.

Steps



1. Fill in the details

- Fill in S1. Sample number and date on the round sticker or sticker strip label and stick on the sample bottle.
- Be careful not to get the sticker wet!
- Record your Sample number, date, time, location and description of the water sampled on the Result Record Sheet.
- Record any other information e.g. **turbidity**, (how cloudy the water is), smell, source of pollution, faulty pump, etc.



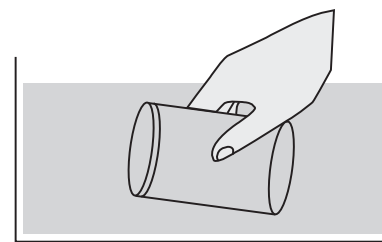
2. Collecting the Control

- A control is used to compare the colour change in the test samples, and to ensure that the sample bottles are not contaminated before use.
- **A control is a sample that you know for sure should not be contaminated. You need to collect the control only once for each monitoring programme.*
- Collect distilled water, boiled water, bottled water or water treated with chlorine. This is to be used as the control. There may be a slight change in the colour of the sample to a pale yellow or light brown due to the colour change of the reagent. This is normal.

3. Collecting the water sample:

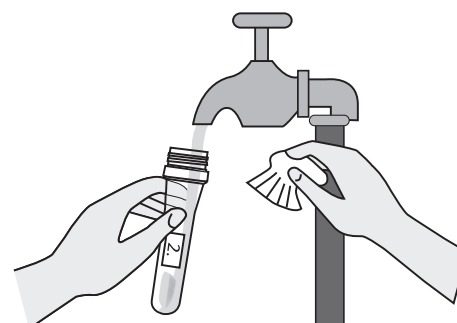
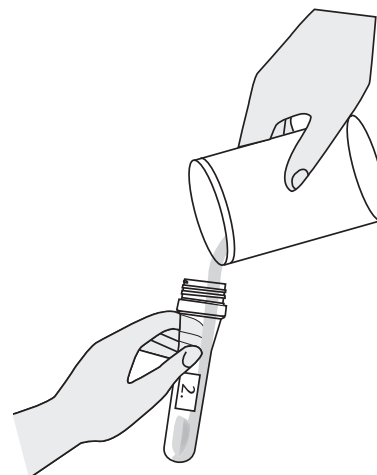
A. Water from the roof

- collect water from the roof in the rainy season in a very clean container.
- make sure you don't collect rain water from the first week of the rainy season as this water is dirtier and is not normally collected for drinking.
- fill the test bottle carefully, this is because the test bottle will fill very quickly to the marked line and may overflow. If you do overfill the bottle, do not spill the water out and do not worry. Your result will still be valid.
- immediately close the sample bottle.



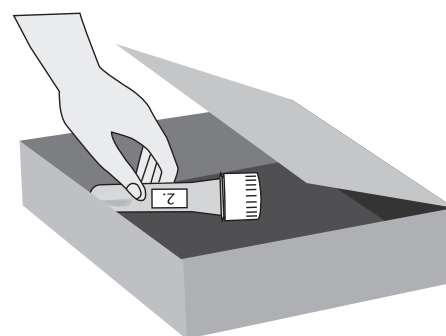
B. Town's drinking water supply

- rinse the container to collect the water several times in clean water.
- collect a sample of water from the container by filling the sample bottle up to the mark.
- close the sample bottle.
- place all the test samples in a dark place at room temperature.
- wash your hands!



4. Check your results






- check your test sample at the same time each day for 3 days for changes in colour.
- record the date and time for each observation on your recording sheet and your result for each day.
- compare the colour change with that of the control.
- use the H₂S Colour Code to indicate the degree of contamination.



Note! Do not expose your bottles to direct sunlight. Store in a dark place. The sun's rays can kill the bacteria inside the test bottles and you will not get a true result.

5. What do your results mean?

Result Card H2S Colour Code

-  (-) If there is no colour change this indicates that there is no hydrogen sulphide producing bacteria present.
-  (+) If the water has turned grey, there is a possibility that bacteria, is present in the water. Wait for a few days and check again.
-  (++) If the colour change is partially black then there is some amount of bacterial contamination in the drinking water. You may want to set up a regular monitoring programme and boil your drinking water!
-  (+++) If the paper strip and the water sample are noticeably black then there is a very high risk of bacterial contamination in the drinking water, therefore, it is not safe for drinking. Take action!
-  (+++) If there is a fast reaction—that is, the water solution and paper strip turns black overnight—that means that there is a high probability of bacteria present!

Is your water is contaminated! Then what you can do is clean out your water storage containers, tanks or well and boil or treat the water before you drink it! Or perhaps consider another source of water for drinking.

6. Fill Out the Result Record Sheet:

Every time a Water ambassador is going out for water monitoring, he or she needs to fill in the provided Result Record Sheet.

All the relevant details need to be filled in the Sheet.

- Fill in the address or the location of where you did the water sampling e.g. Asmara,
- Write in the sample number in the first column.
- Fill in the type of water that is being sampled e.g. rainwater.
- Record the date and time of when a sample was taken.
- Identify the location of the sample e.g. the school water tank
- In the “Remarks” column, fill in information like the colour of the

H ₂ S paper strip test on school water - result record sheet				Class			
Name of school & address		Date	Time	Location	Remarks	Result	Remarks
<small>(Copy and paste, Date, Time, Location, Remarks, Result, Remarks)</small>				<small>(Specify where the sample is collected)</small>	<small>(Specify if the water has a strong odour, taste or odour or suspension also problems of pouring the & a reading for colour, odour, taste, etc.)</small>	<small>(White, grey, black, +, ++, +++)</small>	<small>(Specify colour, odour, taste, etc.)</small>

Note: _____

By: _____

See page 52 for an example of the Result Record sheet.

water, the smell or if there is faulty tap or pipe.

- Use the colour code to find out your results- e.g. "+" or "++" and record this in the "Results" column. Fill in observations each day for three days and record the date and time of observation.
- The 'Notes' section below the table can be used for other information like the source of contamination or if there is a toilet built within a short distance from the drinking water source.



Teacher Note:

After the water safety audit has been completed the class will be able to make connections between water hygiene and clean safe water.

7. Interpreting the results from the H₂S test

Go over the test results with the students.

- Look to see if the water in the test tube after 3 days turned grey or black. What does it mean?
- How do students feel about the test results?
- Get the students to break into groups and write down why they think the water is or isn't contaminated.
- Students brainstorm what they could do to improve water quality in areas where the water quality needs improvement.

8. Social Action

If water quality needs improvement, *plan for action*. Refer to section on Planning an Action Project. More ideas for what can be done can also be found in the *Healthy Schools: A Manual for Water, Sanitation & Hygiene for Elementary School Directors and PTA*.



Result Record Sheet: H₂S paper strip test on school water

Name of school & address:

Class

Type of water source (deep well, dam, bore-hole, river, rainwater etc.)	Date	Time	Location (place where the sample is collected)	Remarks: (Is the water muddy, coloured, contain solids or materials in suspension also problems at sampling site like a leaking tap, unclean, drainage problems etc.)	Results each day over 3 days -clear, +grey colour, ++part black, +++very black

Notes:



Background for Teachers

Water Collection Methods, Storage and Handling


Regardless of whether or not collected household water is initially of drinking water quality, it often becomes contaminated with pathogens during transport and storage due to unhygienic storage and handling practices.

Collection

Since ancient times, water for household use is collected by a variety of physical methods ranging from manual (e.g., dipping), to passive (e.g., roof catchments and diversions) to mechanical (e.g., pumps), and it is stored in a variety of containers. In developing countries, many of the traditional types of water collection and storage methods employing vessels of various compositions and sizes are still widely used today. These include traditional pots or urns fashioned from natural materials (e.g., gourds or wood) or fabricated from clay, copper, brass and other impervious materials, and flexible bags or other vessels made of animal hides, other animal parts or fabrics treated to seal and prevent leakage. Today, other metals, including aluminium, steel and iron, as well as other materials, primarily plastics, have come into widespread use for water collection and storage in the form of buckets, jerry cans, picnic coolers and other vessel types and shapes. Cisterns and other basins are also still widely used for water collection and bulk storage near or adjacent to dwellings, as they have been since ancient times.

Storage

Higher levels of microbial contamination and decreased microbial quality are associated with storage vessels having wide openings (e.g., buckets and pots), vulnerability to introduction of hands, cups and dippers that can carry faecal contamination, and lack of a narrow opening for dispensing water. Studies show that the use of containers with narrow openings for filling, and dispensing devices such as spouts or taps/spigots protect the collected water during storage and household use. Improved containers



protect stored household water from the introduction of microbial contaminants via contact with hands, dippers, other faecally contaminated vehicles or the intrusion of vectors. The most desirable water storage vessels for many household treatment and storage options are:

- between 10-25 litres capacity, rectangular or cylindrical with one or more handles and flat bottoms for portability and ease of storage,
- made of lightweight, oxidation-resistant plastic, such as high-density polyethylene or polypropylene, for durability and shock resistance,
- fitted with a 6-9 cm screw-cap opening to facilitate cleaning, but small enough to discourage or prevent the introduction of hands or dipping utensils,
- fitted with a durable, protected and easily closed spigot or spout for dispensing water,
- provided with pictorial and/or written instructions for use affixed permanently to the container, as well as an affixed certificate of approval or authenticity.

The cost of water storage vessels is also an important consideration, as they must be affordable or be subsidized. Locally available buckets, pots, urns, jerry cans, barrels, used beverage containers and flexible bags and flagons are usually low in cost and readily available. However, only some of these, in particular jerry cans, some plastic beverage containers, some urns and some flexible vessels, have properties and characteristics that are preferred or desirable as readily transported water storage vessels. Others, such as some buckets, cooking pots, some plastic beverage containers and other cylindrical vessels are less desirable for household water storage, but may be suitable for water collection and transport, especially if they are lightweight, have protective lids and are composed of easily cleaned materials (e.g., plastics).

Other factors contributing to greater risks of microbial contamination of stored water are higher temperatures, increased storage times, higher levels of airborne particulates (dust storms) and inadequate hand washing.

Teacher resource sheet information from http://www.who.int/household_water/en/



Environmental School Audit

What is an environmental audit?

An environmental audit is the process of assessing our attitudes towards the environment. The environmental audit is done through self-reflection and critical thinking on our actions and our use of resources. During this process we have the opportunity to identify and investigate problems that need to be challenged.

What outcomes can be expected?

An Environmental School Audit is valuable for the student, teacher and the school. It will assist the teacher and the student to identify problems in the schools environment and more specifically help identify resources used in the school environment.

It provides a first step for the student to investigate solutions to environmental problems such as waste, water and energy conservation.

More importantly, an Environmental School Audit will encourage the students and the teachers to have a good look at their own attitudes towards the school environment and their participation. In order for an Environmental School Audit to be effective, honesty and openness are two critical factors.

Eritrean green schools school audit

Activities for conducting an Environmental School Audit.

Teachers and students can do an Environmental School Audit suitable for their school environment.

On the following page, are two examples on how to conduct activities as a part of an Environmental audit.

School Audit:

Example 1:

Plant Survey

1. Divide a map of your school into areas and assign each area to an action team. Visit each area and identify all species of plants growing there. Use elders in you villages to help you identify plants and add this information to your map.
2. Find out which plants growing in your schools are locally native and which are introduced species. Research the problems associated with introduced species of plants.
3. Identify areas around the school ground that have been cleared or that are lacking in trees and plants. Highlight these areas on your map.
4. Is there a creek or waterway near your school? If there is, look to see whether the banks are well vegetated. If you find areas with little or no plant cover, note the effects on the banks and the water.
5. Identify local native plants suitable for your school ground. Consult elders, community groups or The Department of Agriculture for help.

Example 2:

Litter Bin Survey

- How many bins are there on your school ground? Number _____
- Are the bins full? Yes No
- Can rubbish blow out of the bins? Yes No
- Are the bins clean? Yes No
- Is rubbish around the bin? Yes No
- Are more bins needed?
(if yes, what actions can you take?) Yes No
- Are there any recycling bins available? Yes No

Creating a sustainable school environment

Some actions for a sustainable school environment:

- Energy Conservation.
- Use of skylight
- Use of alternative resources (wind and sun).



Waste Reduction and Recycling

- Reduce paper use (reuse returnable handouts).
- Reuse paper.
- Collect and recycle paper in every classroom and office.
- Reuse or recycle cardboard boxes.
- Collect and reuse beverage containers.
- Collect and recycle cans and glass.
- Compost organic waste.
- Reduce plastic consumption.
- Identify recycling possibilities for plastics.
- Salvage reusable materials and supplies.

Water Conservation

- Use flow restrictors on taps.
- Ensure regular maintenance to prevent leaks.

Wildlife Habitat

- Plant (or maintain) locally indigenous trees and shrubs.
- Put out bird feeders and nesting boxes.

Greening the school grounds

- Plant native trees.
- Establish a school vegetable garden.
- Plant drought tolerant plants in containers and gardens (succulents need little water).

Communication

- Establish a school council where students participate in decision-making.
- Ensure school involvement with the community and action-based environmental education initiatives.
- Develop a mission statement for the environment.



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Overview of the Resources



The Environmental Education Curriculum Companions for elementary schools provide practical examples of how Environmental Education can be integrated across the subject areas of:

English

Science

Social Studies



A manual has been developed to provide teachers with practical ideas for extra-curricular activities, including suggested activities for Green Clubs and Health Clubs.

A resource has also been developed to support the School Directors, School Staff and PTA about ways in which they can contribute to ensuring their school operates as a sustainable school environment.



There are additional resources provided in the Toolbox which includes posters, information cards and reference materials.