

# BLUE SCHOOLS

Linking WASH in schools with  
environmental education and practice

## FACILITATOR'S GUIDE

Support material for teachers  
and training of trainers



## AUTHORS

Lucie Leclert (Caritas Switzerland)  
 Daya Moser (HELVETAS Swiss Intercooperation)  
 John Brogan (Terre des hommes)  
 Adeline Mertenat (Eawag-Sandec)  
 Jane Harrison (PITCHAfrica, consultant)

## CONTRIBUTORS

**Caritas Switzerland:** Augustine Baroi (Bangladesh), Abatneh Biazen (Ethiopia), James Ndenga (Kenya), Catherine Wanjihia (Kenya), Beverly Mademba (Kenya)

**HELVETAS Swiss Intercooperation:** Madan Bhatta (Nepal), Monique Gbaguidi (Benin), Heritiana Rakotomalala (Madagascar), Jacques Louvat (Mali), Valerie Cavin (Switzerland), Ramesh Bohara (Nepal)

**Terre des hommes:** Shahid Kamal (Bangladesh), Daniel Varadi (Switzerland)

**Eawag:** Regula Meierhofer, Fabian Suter, Vasco Schelbert, Christoph Lüthi, Christian Zurbrügg (Switzerland)

**COOPI:** Duessa Negera (Ethiopia)

**International Rainwater Harvesting Alliance (IRHA):** Marc Sylvestre, Han Heijnen (Switzerland)

**Nepal Red Cross Society/ Swiss Red Cross:** Raj Kumar Kshetri (Nepal)

**PITCHAfrica:** Jane Harrison (USA)

**Drawings:** Joe Ngari (Kenya)

## SUPPORTED BY

Swiss Agency for Development and Cooperation (SDC)  
 Swiss Water & Sanitation Consortium  
 Terre des hommes  
 Caritas Switzerland  
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A Blue School offers a healthy learning environment and exposes students to environmentally-friendly technologies and practices that can be replicated in their communities. It inspires students to be change agents in their communities and builds the next generation of WASH and environment sector champions.

The purpose of the Facilitator's Guide is to provide a visual support for teachers and training of trainers to introduce or strengthen extra-curricular topics—including overlooked topics such as gender, menstrual hygiene management and transformation of solid waste into resources. For eight different topics, it suggests learning objectives and refers to the Catalogue of Practical Exercises for inspiration. Images should be adapted to the local context and culture as appropriate.

The examples provided allow to teach and inspire students on environmentally-friendly activities that they can replicate at home and in their communities. This resource draws on knowledge that has been assembled within the international development community. The Blue Schools kit is structured in eight topics : My Surrounding Environment, The Water Cycle, The Watershed around My School, My Drinking Water, Sanitation and Hygiene, Growth and Change, From Soil to Food, and From Waste to Resources. The Facilitator's Guide includes a selection of easy-to-do activities that demonstrate relevant practices for all the topics.

The Facilitator's Guide is evolutive. It is intended as a source of information and as an inspiration on how to encourage environmental awareness among students through practical teaching exercises. The full exercises, content and picture sources, as well as technical background sections on each topic are found in the Catalogue of Practical Exercises. Users of the Facilitator's Guide and the Catalogue of Practical Exercises are encouraged to also use the Catalogue of Technologies, which gives further ideas and inspiration.





# 1 My Surrounding Environment

## KEY LEARNING OBJECTIVES

- To understand the opportunities and resources that our surrounding environment offers and how we can responsibly use and conserve them
- To be aware of the fragility of our surrounding environment and learn in what ways we can protect/support it





# 1 My Surrounding Environment

This topic introduces the concept of environment and encourages students to carefully observe and analyse the characteristics of their surroundings. This includes paying attention to the climate conditions such as temperature, and rainfall, as well as observing the landscape, the topography, the soil characteristics and the vegetation around them.

## **IMPORTANT**

- 22nd April: Earth Day
- 5th June: World Environmental Day
- Observation and analysis
- Resources and limitations
- Land formation and water bodies
- Nature conservation

## LIST OF ACTIVITIES



### 1.1 Transect walk

To familiarize students with their local environment and to encourage them to become keen observers of it.



### 1.2 Participatory mapping

To learn about, describe and share knowledge of the local environment through a community map-making exercise.



### 1.3 Participatory modelling

To help students to visualize how different parts of the environment relate to one another.

## QUESTIONS FOR DISCUSSION

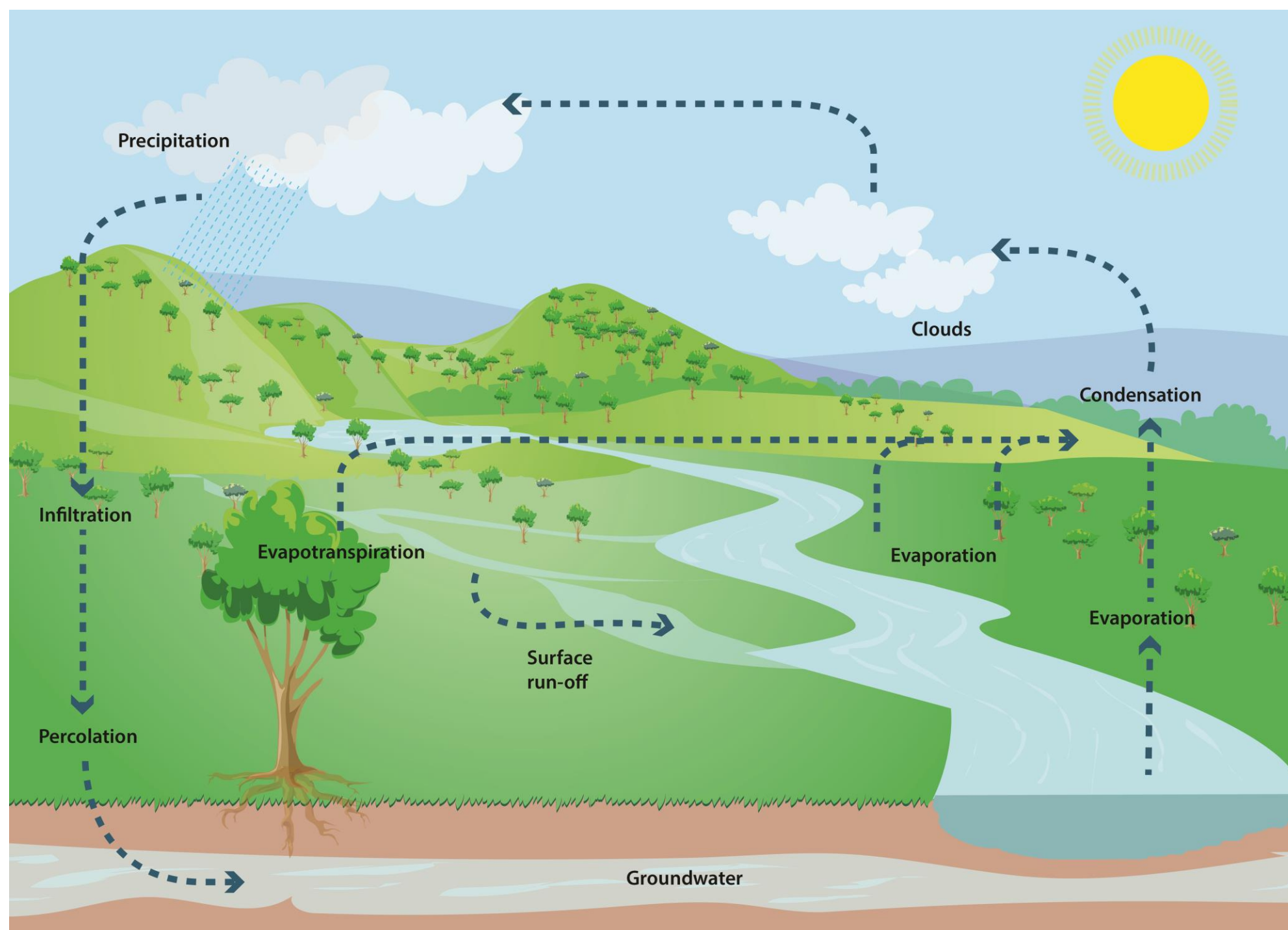
- How do you feel in your environment?
- What are the natural features surrounding you?
- How are they linked together?
- What are the resources and constraints present in your surroundings?
- How do human activities protect/disturb the environment?
- How can we improve the quality of our environment?



## 2 The Water Cycle

### KEY LEARNING OBJECTIVES

- To realize that water is a limited resource coming from nature and that it is important that we protect and use it well
- To experience the different states of water and the four primary components of the water cycle







## 2 The Water Cycle

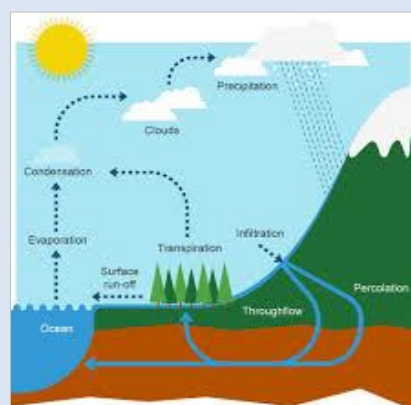
This topic serves as an introduction to understand the water cycle, both as an abstract set of principles and as a set of phenomena that can be demonstrated and experienced. In this topic it is important that students learn how water behaves, where it is located in their environment, whether these supplies are renewable or non-renewable and how they are being affected by climate change and global warming.

### IMPORTANT

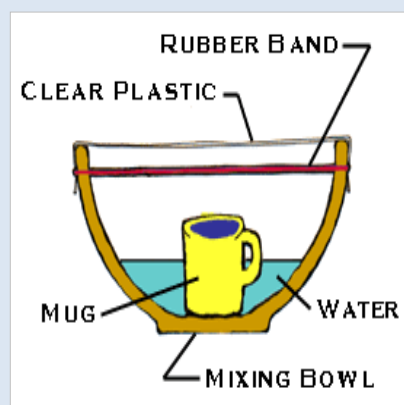
Cover all water cycle aspects:

- States of water: liquid, vapour and ice
- Evaporation, condensation, precipitation, percolation

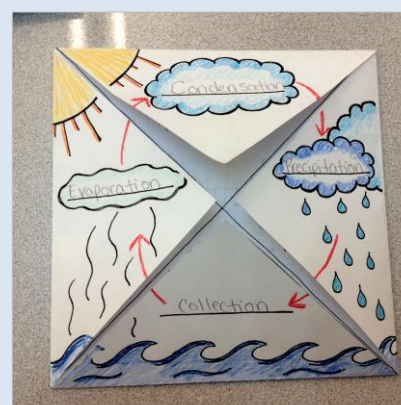
### LIST OF ACTIVITIES



**2.1 What is the water cycle?**  
To teach students the principles of the water cycle.



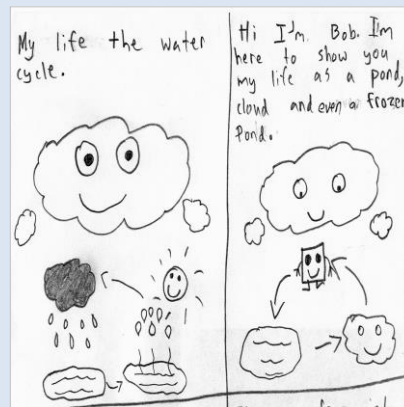
**2.2 Make a water cycle**  
To physically demonstrate the principles of the water cycle.



**2.3 Water cycle model**  
To understand the key principles or states of water in the water cycle.



**2.4 Water cycle wheel**  
To demonstrate how water moves through the cycle and is continuously changing its state.



**2.5 Comic strip**  
For students to demonstrate their knowledge about the water cycle.



**2.6 Poem**  
To convey more poetic and evocative qualities about the water cycle.

### ... more activities

#### 2.7 Water cycle dominoes

For students to demonstrate their understanding of the water cycle.

#### 2.8 Evaporation in a jar

To see the principle of evaporative loss at work.

#### 2.9 Cloud in a jar

To make vivid the process of condensation, that forms clouds.

#### 2.10 Rain in a jar

To demonstrate the principle of precipitation.

#### 2.11 Transpiration in a bag

To show students transpiration at work.

#### 2.12 Global warming in a jar

For students to observe global warming phenomenon.

#### 2.13 Water and nutrient cycle puzzle

To introduce the concept of nutrient cycles in the environment.

#### 2.14 Plan in a bottle

To exemplify the concept of nutrient and water cycles.

### QUESTIONS FOR DISCUSSION

- What different state of water do you see daily?
- What kind of water do you have in your environment? Salty? Fresh? Where?
- How is climate change / global warming affecting the water cycle in our country/region?
- How are these changes affecting the environment and the community?



### 3 The Watershed around My School

#### KEY LEARNING OBJECTIVES

- To understand what a watershed is, where water comes from and who are the different water users in the environment
- To recognize the impact of overuse, pollution and practices such as deforestation on the quantity and quality of water
- To find out what we can do to protect the watershed







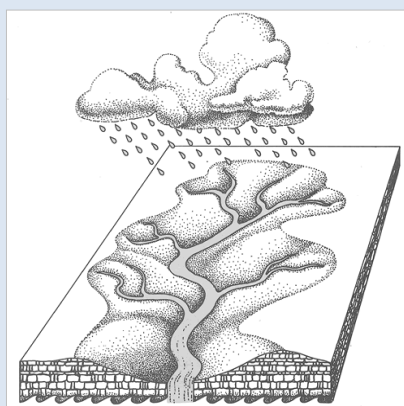
### 3 The Watershed around My School

This topic is about the importance of the watershed around the school and in which students live. They need to know where their watershed is, where its boundaries are and how water moves through it. A healthy watershed sustains us. It is important that they learn what kind of human behaviour supports the health of the watershed and which actually damages it, such as deforestation, open defecation, and polluting the ground and surface water sources.

#### IMPORTANT

- Water sources and pathways
- Human impact
- Water resource management

#### LIST OF ACTIVITIES



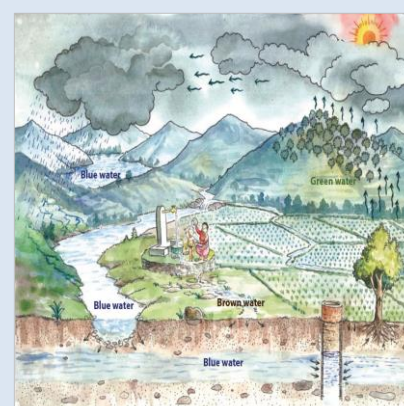
##### 3.1 What is a watershed?

To teach students that a watershed is defined as the land area drained by a particular river or stream.



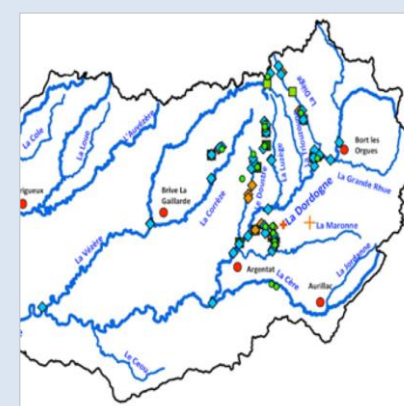
##### 3.2 Crushed paper watershed

For students to demonstrate their understanding of the principles of a watershed and to 'see' it in action.



##### 3.3 Picturing my watershed

For students to illustrate their understanding of how their own watershed looks like and how it behaves.



##### 3.4 Drawing my watershed

To teach students how to find their own watershed from studying a topographic map.

#### QUESTIONS FOR DISCUSSION

- Where are the sources of fresh water in our surroundings?
- Why and how is our watershed important for our day-to-day life?
- How do our practices affect or damage our watershed?
- What factors can affect the water's quality and quantity?
- What can we do to protect it?





## 4 My Drinking Water

### KEY LEARNING OBJECTIVES

- To understand that clear water is not always safe to drink
- To experience and practice how to make water safe for drinking, by safe storage and water treatment at school and at home





## 4 My Drinking Water

This topic introduces the importance of clean (not just clear) water and simple ways in which water can be purified using the processes occurring naturally in the Water Cycle. Water can be contaminated by bacteria, salts, chemicals and metals. Here are some experiments that demonstrate how bacteria can be eliminated from water. The process of eliminating salts and chemicals requires other kinds of technologies, some of them are listed in the *Blue School Catalogue of Technologies*.

### IMPORTANT

- 22nd March: World Water Day

Cover all safe water aspects:

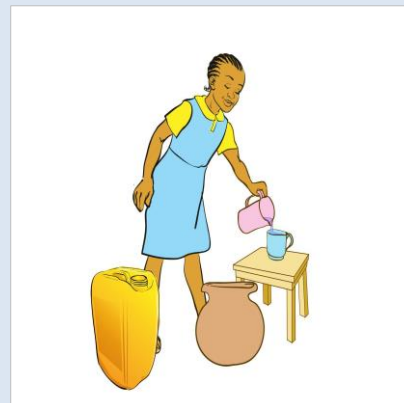
- Test water quality
- Treat water appropriately
- Store water appropriately

### LIST OF ACTIVITIES



#### 4.1 Clear water isn't clean water

To show students that clear water is not always safe to drink.



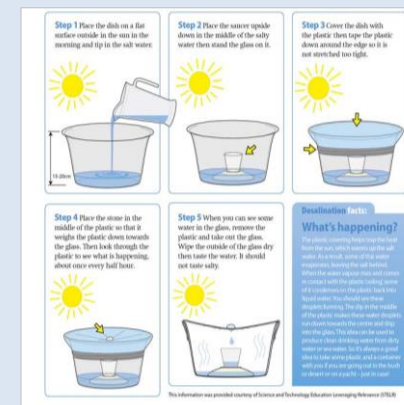
#### 4.2 Safe storage and transportation

To show the basic principle of safe storage and transportation of water.



#### 4.3 Water filter in a bottle

To show the basic principle of water filtration.



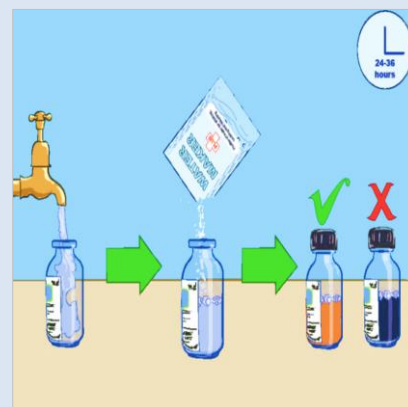
#### 4.4 Mini desalination plant

To show students how the processes of condensation and evaporation desalinate water.



#### 4.5 Solar water disinfecting

To demonstrate how to disinfect water using solar energy.



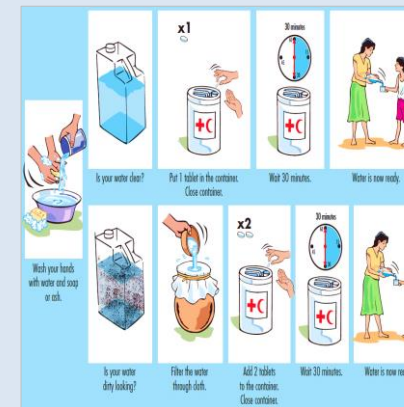
#### 4.6 Water quality testing

To learn how water quality can be tested.



#### 4.7 Treating water with Moringa seeds

To show students how to use Moringa seeds to reduce the turbidity of water.



#### 4.8 Treating water with chlorine

To show students how to apply chlorination tablets or solution to treat water.

### QUESTIONS FOR DISCUSSION

- Where do you fetch water (borehole, river, dam, standpipe, well, etc.)? Do you think it is safe water to drink? Why?
- List all the things you do with water at home, in the community, at school, etc. (drinking, swimming, washing, bathing, etc.). Do you need safe water for that?
- How do you transport water? Do you think this keeps water clean?
- Where do you store water? Do you think this keeps water clean?
- Why is water which looks clear or which has a good taste not always safe to drink?
- How does water get contaminated?
- What can you do to keep water safe at home?





## 5 Sanitation and Hygiene

### KEY LEARNING OBJECTIVES

- To understand how diseases are transmitted and what good and bad hygiene practices are
- To apply good hygiene practices that can help blocking the transmission route of diseases at school and at home





## 5 Sanitation and Hygiene

This topic aims to encourage students to cultivate good hygiene and sanitation practices to block the routes of disease transmissions.

These range from using a latrine, proper hand washing, cultivating good personal hygiene habits, good food hygiene habits, keeping the environment clean and becoming an example of these practices in the community.

### IMPORTANT

- 19th Nov.: World Toilet Day
- 15th Oct.: Global Handwashing Day

Cover all hygiene aspects:

- Sanitation
- Water hygiene
- Food hygiene
- Environmental hygiene
- Personal hygiene

### LIST OF ACTIVITIES



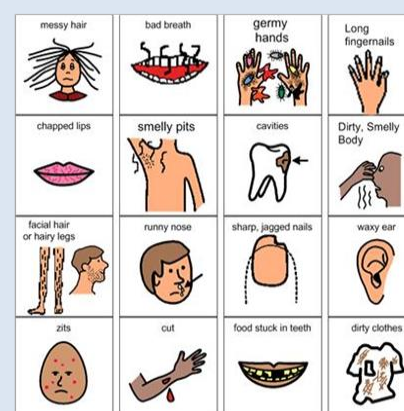
#### 5.1 Glitter hands

To teach students that clean hands require effort, the use of soap and vigorous rubbing.



#### 5.2 Germ transfer

To teach students about the spread of germs by vividly showing how germs can live on hands and the things they touch.



#### 5.3 Hygiene matching game

To teach students the hygienic action that is linked to each body part.

### ... more activities

#### 5.7 Pile sorting

To recognize what are good or bad hygiene practices.

#### 5.8 Supervision of WASH facilities

To make students responsible for the maintenance of WASH facilities.

#### 5.9 Soap making

To learn how to make soap using local materials.

#### 5.10 Glass of water

To be triggered to stop open defecation.

#### 5.11 Organising events

To show practices to parents and the broader community.

#### 5.12 Community visit

To reach out to the broader community and show good practices.

#### 5.13 Water and nutrient cycle puzzle

To help forming habits of hand washing.environment.

#### 5.14 Demonstration of good hygiene practices

To show other good hygiene practices: latrine use, tooth brushing....

#### 5.15 Construction of a tippy tap

To learn how to construct a simple handwashing facility using local materials

### QUESTIONS FOR DISCUSSION

- What are the causes, symptoms and effects of diarrhoea?
- What are the different route of disease transmission?
- How can flies transmit diseases?
- What can we do to block these routes?
- Why is it important to use a latrine?
- What is a good latrine?
- When do we need to wash our hands?
- What can happen if we do not wash our hands?
- Why is it important to keep our environment clean?
- What do we need to do to keep our personal hygiene?



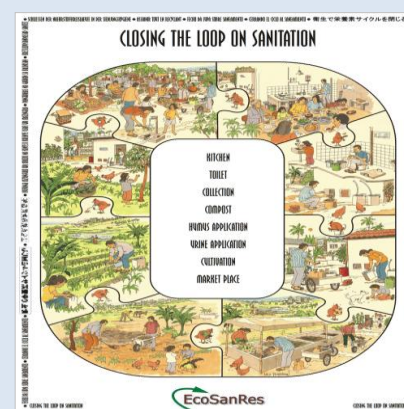
#### 5.4 Good habit bad habit

To reinforce students' understanding of both good and bad hygiene habits.



#### 5.5 Hygiene charades

To help students get the motions of hygienic behaviour right by playing hygiene charades.



#### 5.6 Eco sanitation puzzle

To teach students the steps in the 'Sanitation and Hygiene' cycle.





## 6 Growth and Change

### KEY LEARNING OBJECTIVES

- To understand the changes for both boys and girls in puberty: it is part of growing up and is a normal process
- For girls: To learn how to manage menstruation: body hygiene, types of pads available and their safe reuse and/or disposal





## 6 Growth and Change

This topic encourages students to adopt good, fair and balanced attitudes about gender - including themes of access to education and societal roles. It also emphasises menstruation as a natural process; presenting information about puberty and adolescence and encouraging students to respect the physical changes evident in both sexes at this time in their lives. The exercises proposed, seek to build agreement among students that both sexes should support good menstrual hygiene practices.

### IMPORTANT

- 28th May: Menstrual Hygiene Day

Cover all growth and change aspects:

- Puberty and physical changes
- Gender roles and equality
- Respect and understanding
- Managing menstruation safely

### LIST OF ACTIVITIES

### ... more activities

### QUESTIONS FOR DISCUSSION



#### 6.1 Handprint circle

To encourage students to demonstrate principles of equality and awareness.



#### 6.2 Equality quiz

To reveal to students their understanding of the difference between fact and opinion around issues of gender.



#### 6.3 Music equality game

To encourage students to demonstrate good behaviour around issues of equality.

#### 6.7 My menstrual cycle

To enable girls to understand menstrual cycle stages

#### 6.8 Keeping my menstrual cycle calendar

To enable girls to understand each of their menstrual cycle

#### 6.9 Reusable pad making workshop

To provide all students with skills for making reusable pads.

#### 6.10 Disposal

To discuss how to safely and hygienically manage menstruation.

- How does our body change during puberty?
- What are the differences between boys and girls at puberty?
- Are those differences well accepted in our school? ...and in our community?
- How could we improve the situation?



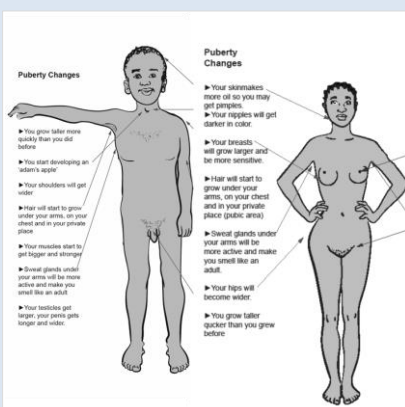
#### 6.4 Role reversal game

To have students take on roles typically associated with the opposite gender.



#### 6.5 Knock down the myth

To distinguish facts from myths and to 'knock down' myths associated with menstruation.



#### 6.6 As we grow up

To discuss the changes that occur during adolescence to boys and girls.





## 7 From Soil to Food

### KEY LEARNING OBJECTIVES

- To apprehend the crucial role of biodiversity and sustainable agriculture technique in our food growing systems
- To recognize the importance of trees in supporting the watershed and food production
- To observe soil composition and its connection with plants and water





## 7 From Soil to Food

This topic encourages students to learn about growing food, and that growing food begins with healthy soil and sustainable water source. Students learn about ecosystem conditions keeping gardens alive and food growing abundantly. This includes learning how to maintain and/or improve soil quality and fertility as well as exploring the relationship between land and water—as they are essential for being able to grow food sustainably.

### IMPORTANT

- 11th June: World Agriculture Day
- 22nd Sept.: International Organic Day
- Make compost
- Use mulch
- Diversify & rotate crops
- Use natural fertilisers & pesticides

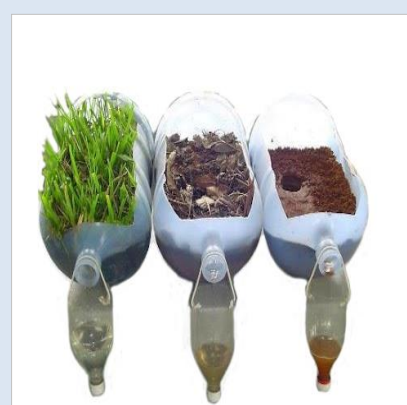
### LIST OF ACTIVITIES

### ... more activities



#### 7.1 Evaporative loss

To help students learn about evaporative loss in the ground and how plants help to retain water in the soil.



#### 7.2 Soil erosion

To visualise the process of soil erosion and demonstrate that organic ground cover protects soil from erosion and nutrient loss.



#### 7.3 Deforestation

To convey that unsustainable tree cutting makes soil dry out, erode in the rain, and eventually causes a decrease in rainfall.

#### 7.7 Terra-decomposition-aqua column

To learn about organic processes taking place in the environment.

#### 7.8 Plant a tree

To teach students about the importance of growing trees.

#### 7.8.1 Plant Moringa Oleifera

To inform students about beneficial multipurpose plants.

#### 7.9 Compost pit

To show students an easy way to make compost.

#### 7.10 Keyhole garden

To show students a way to cultivate vegetables in an efficient and productive way.

### QUESTIONS FOR DISCUSSION

- What is biodiversity?
- What are causes of soil erosion?
- What are the impacts of soil erosion?
- What are the characteristics of a healthy soil?
- Why is a healthy soil important?
- How does water interact with soil?
- Aside from water, what do plants need in order to grow?
- Describe some sustainable agriculture techniques and tell what makes them useful.
- How do you plant a tree?
- Why are trees important for the environment?



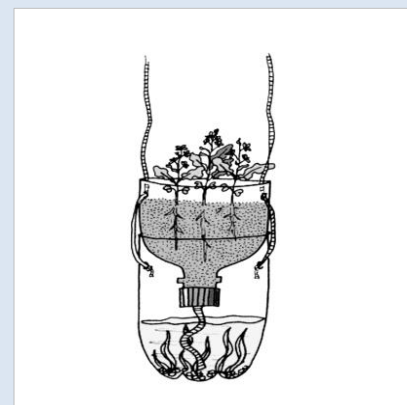
#### 7.4 Soil shaking

To familiarize students with the composition of soil in their area, and the types of soil that are best for growing plants.



#### 7.5 Decomposition column

To encourage students to understand the process of decomposition in the formation of compost.



#### 7.6 Terra-aqua column

To familiarize students with the organic processes that take place between land and water—and how the balance affects their environment.

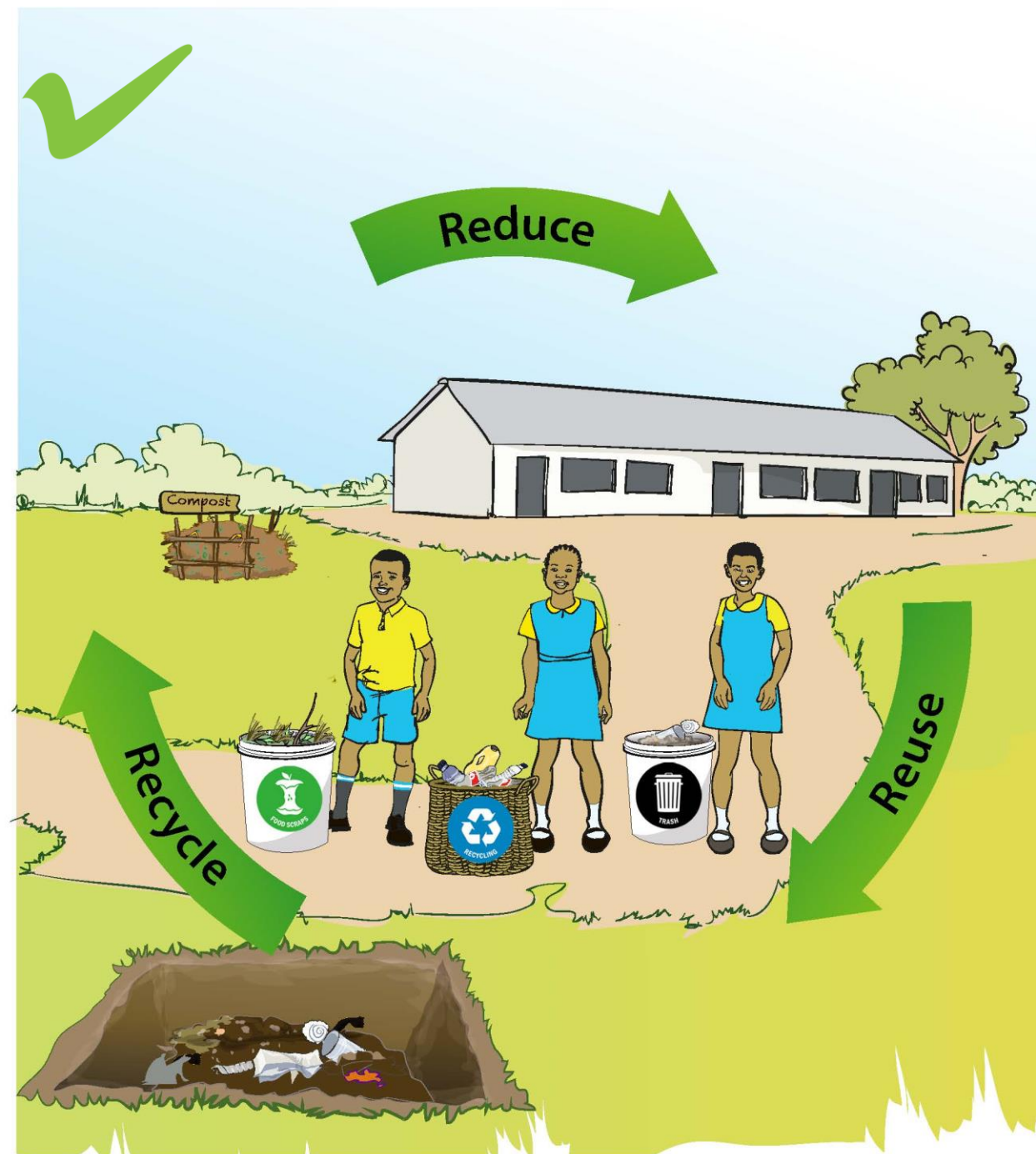




## 8 From Waste to Resources

### KEY LEARNING OBJECTIVES

- To understand the importance of waste management and how waste pollutes our environment when not properly handled
- To learn and experience sustainable waste management practices





## 8 From Waste to Resources

This topic aims to encourage students to become conscious about the impacts related to bad waste management and about what can be done to avoid this.

It encourages them to apply the 3R principles which are: Reducing the amount of waste generated by consuming less or differently, Reusing and Recycling waste. It helps them change their mind-set and look at waste as a resource, if the waste is segregated at source into different types of materials.

### IMPORTANT

- 18th March: Global Recycling Day
- In Sept.: World Cleanup Day

### Cover all waste aspects:

- Reduce
- Reuse
- Recycle
- Good waste management
- Environmental impact

### LIST OF ACTIVITIES



#### 8.1 Waste collection day

To show to students the impacts of dumping and throwing waste away.



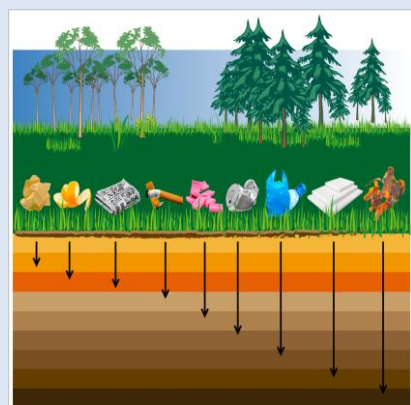
#### 8.2 Impacts of unmanaged waste

To familiarize students with the issues of not managing waste properly when openly burning or dumping it.



#### 8.3 Visit of landfill/dumpsite

To show students what the end of life of waste is, its contamination risk and the importance of reducing waste generation



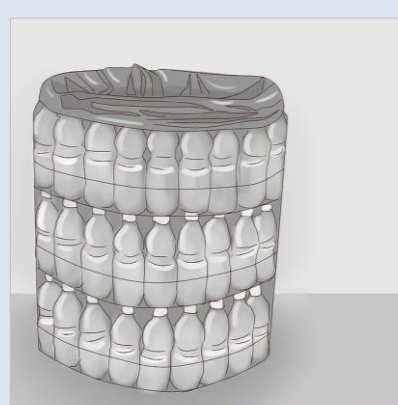
#### 8.4 Waste degradation rate

To familiarize students with the long term impact of throwing waste away.



#### 8.5 Waste assessment

To enable students to evaluate their waste production.



#### 8.6 Waste bin from plastic bottles

To familiarize students with waste recycling and waste separation.

### ... more activities

#### 8.7 Ecobricks – Building with plastic

To demonstrate students how to recycle plastic waste by producing a building material.

#### 8.8 Recycling your own paper

To teach students how to make their own recycled paper.

#### 8.9 Composting – Moisture test

To teach students how to control moisture content of a composting heap.

### QUESTIONS FOR DISCUSSION

- What type of waste do you produce and how much?
- How would you describe the waste (weight, volume, wetness,...)?
- What do you do with your waste? Do you put it in bins, throw it away, burn it? Do you think it is appropriate to do so? Why?
- How could you produce less waste than what you are producing?
- How could you re-utilize/recycle the waste you produce?
- If you cannot recycle or reuse your waste, what can you do with waste to avoid environmental pollution?



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## IMPRESSUM

1<sup>st</sup> Edition, July 2018

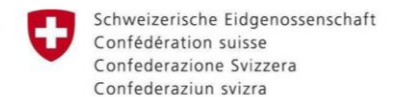
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