# MODULE III

## Lesson Plan 1

## Summary

| Title | |
|---|---|
| Responsible water use | |
| **Duration** | 90 min |
| **The age range of students** | 10 - 14 |

**Summary of the theme**

In this topic, students will learn about the importance of responsible water use, a vital resource that is not equally available in all parts of the world. They will discuss how the misuse and waste of water can affect communities and the environment. Students will build a model of a rainwater harvesting device using simple materials. The collected water will be used for practical activities such as watering plants, thus promoting water conservation and recycling.

## Learning outcomes

**Aim/Learning Objectives.**

- Introduce the concept of responsible water use and its importance for the environment and communities.
- Explain how the misuse and waste of water affect different parts of the world.
- Teach how to build a rainwater collector and use the collected water in practical activities.

**Cross-cutting objectives**

- Promote environmental awareness and responsible behaviour.
- Develop practical and teamwork skills.
- Promote creativity and innovation in sustainable solutions.

**Connecting Sustainable Development Goals**

This lesson relates to:
-SDG 6: "Clean water and sanitation" - Target 6.4. Substantially increase the efficient use of water resources in all sectors and ensure water sustainability.

-Target 13.3. Improve education, awareness, and human and institutional capacity for climate change mitigation, adaptation, impact reduction, and early warning.

# Implementation

## Facilitation

- Make sure all resources and materials are ready before the class.
- Explain and demonstrate each step of the experiment.
- It encourages active participation and teamwork.
- Protect the tables with cardboard to avoid possible cuts and stains.
- Always use recyclable or recycled materials.

## Resources / Materials needed

- Reused plastic bottles or containers.
- Straws.
- Paper, plasticine, glue, scissors, paints, and brushes.
- Markers and labels.
- Recycled materials for decoration.
- Colored cardboard.
- Newsprint or recycled paper.
- Silicone and silicone gun.
- Polystyrene boxes, cardboard boxes, or wooden planks are used as the model's base.
- Sierra.

## Ideas to continue

- Create a water use diary where students record how much water they collect and use each week.
- Conduct a research project on the impact of rainwater on the growth of different types of plants.
- Organise a school campaign to promote responsible water use at home and school.

## Source / Classroom materials and preparation

- Introduction to responsible water use with a brief explanation based on these sources: Source 1 and Source 2
- Information on the impact of water misuse, as well as areas of water waste and water scarcity in the world: Source 1, Source 2, and Source 3.
- Maps to print or display the lack of water resources in the world: Annexes section.
- Videos of the construction of the rain collector: Video 1 and Video 2.

# Topic outline

| Weather | Step-by-step instructions |
|---|---|
| 15 min. | Introduction to the topic and discussion on the importance of responsible water use (Source 1 / Source 2):<br>1. Introduction:<br>• Description: To introduce students to water as a limited and valuable resource.<br>• Importance: To highlight the need to conserve and use water responsibly for the environment's and communities' well-being.<br>2. Discussion:<br>• Topics to be covered:<br>o Difference between renewable and non-renewable water.<br>o Statistics on water consumption in different parts of the world.<br>o Examples of responsible water use practices in everyday life.<br>• Activity: Students can share examples of using water in their homes and discuss ways to reduce waste. |
| 15 min. | Explanation of the impact of water misuse and waste in different parts of the world (Source 1 / Source 2 / Source 3 / Annexes section):<br>1. Global Impact:<br>• Description: Explain how the misuse and waste of water affect different regions of the world.<br>• Relevance: Connect the issue to real examples of communities suffering from water scarcity.<br>• Examples:<br>o Arid zones and their struggle for drinking water.<br>o Consequences of water pollution.<br>o Successful water conservation and management projects.<br>2. Visualisation:<br>• Material: Use maps and graphs showing the areas most affected by water shortages.<br>• Activity: Students can mark on a map the world's regions with the highest and lowest water availability. |
| 15 min. | Divide the students into groups, distribute the material, and explain the activity. |
| 20 min. | Construction of the rainwater harvesting model (Video 1 / Video 2): |

| | |
|---|---|
| | • Description: Guide students in the construction of the rainwater collector.<br>• Steps:<br>o Assemble the base structure using cardboard boxes or wooden planks.<br>o Design and build the collection system using plastic bottles and straws.<br>o Decorate and label the collector.<br>• Activity: Students should work in teams to complete the model, ensuring everyone is involved in some part of the process. |
| 10 min. | Discussion of other possible applications and creation of a list of innovative ideas:<br>1. Applications:<br>• Description: Discuss with the students how the collected water can be used in various activities.<br>• Examples: Watering plants, cleaning, science experiments, etc.<br>• Activity: Students should develop other innovative applications for collecting water.<br>2. List of Ideas:<br>• Activity: Create a collective list of ideas and discuss their feasibility and environmental benefits. |
| 15 min. | Reflection and evaluation of learning (Annexes section). |
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| | |

**Formative evaluation**

- Classroom observations and oral questions during the elaboration of the collector to check if the correct use of water is clear.
- Evaluation of ideas discussed by students as efficient and innovative solutions for using harvested water.
- Use of the reinforcement activities attached in the Annexes section.

**Feedback**

Net Promoter Score (NPS) is a widely used tool to measure the loyalty and satisfaction of customers or, in an educational context, students. It measures the likelihood that students will recommend the subject or course to others.
How to analyse and apply NPS is explained below:

Development of the NPS question:

- Main question: "On a scale of 0 to 10, how likely are you to recommend this topic to other students?
- Follow-up questions: "Why did you select this score" and "How can we improve this issue?

Collection of responses:

- Digital surveys: Use online tools such as Google Forms, SurveyMonkey, or Typeform to collect student responses.
- Paper surveys: Paper questionnaires are distributed at the end of the lesson for students to complete. A template for collecting responses with paper surveys is shown in the Annex.
- Interactive applications: Interactive applications such as Quizziz, Mentimeter, or Kahoot! are used to collect answers in real-time.

Classification of responses:

- Promoters (Score 9-10): Students are very satisfied and likely to recommend the subject.
- Passive (score 7-8): Satisfied, but not enthusiastic students; they could easily change their minds.
- Detractors (Score 0-6): Dissatisfied students who are unlikely to recommend the subject; they could provide constructive criticism.

Calculation of NPS:

- Formula: NPS = % of promoters - % of detractors.
- Score interpretation: NPS ranges from -100 to +100. A positive score (above 0) is generally good, and a score above 50 is excellent.

Analysing and using comments:

- Review the comments to understand the reasons behind the scores.
- Identifies patterns and specific areas for improvement among detractors and passives.
- Use the promoters' positive comments to reinforce the positive aspects of the issue.

# Annexes

Map of water resources in the world to print or display on screen:

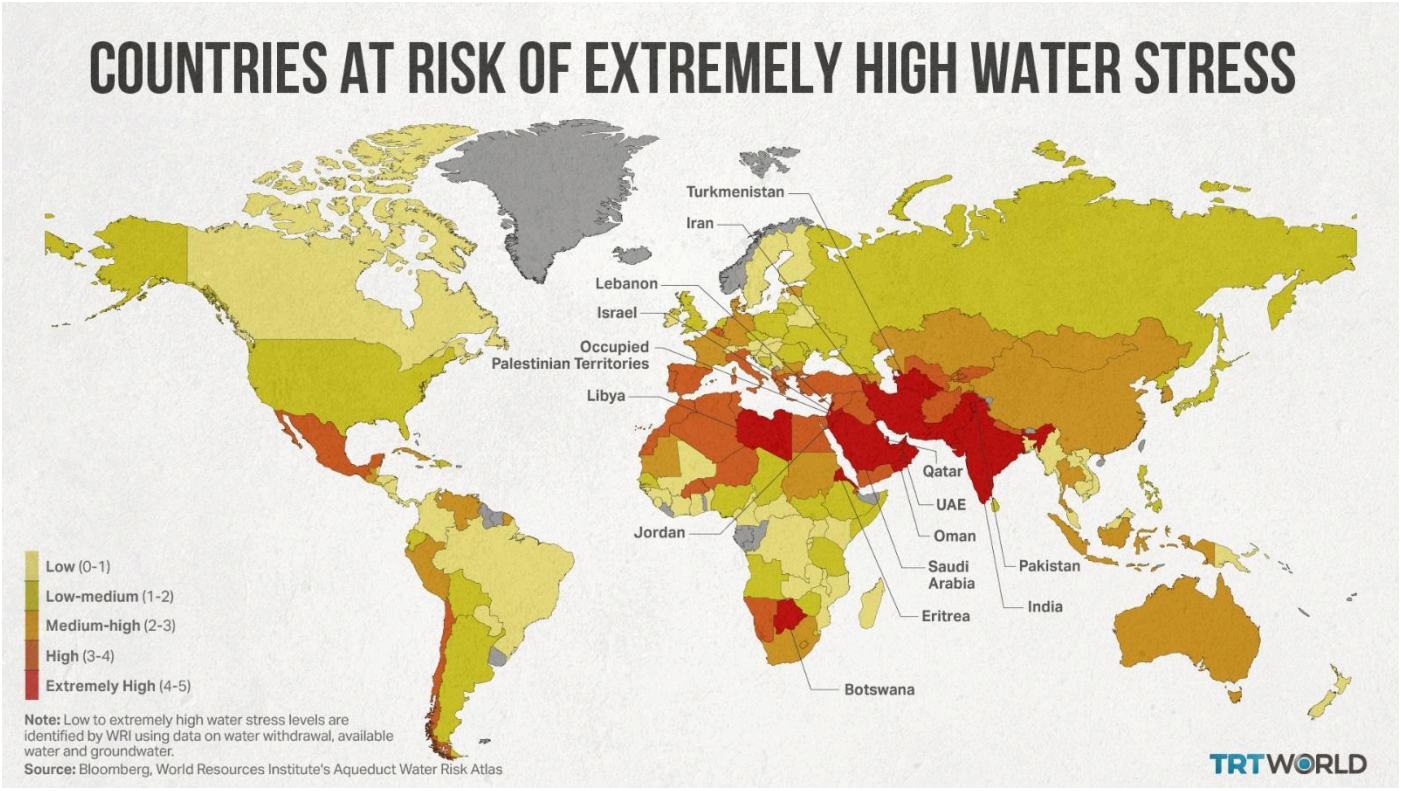



*Figure 3.1.1: Support figure. Source: TRT news channel Twitter. Link:*
*https://x.com/trtworld/status/1537354638592180224*

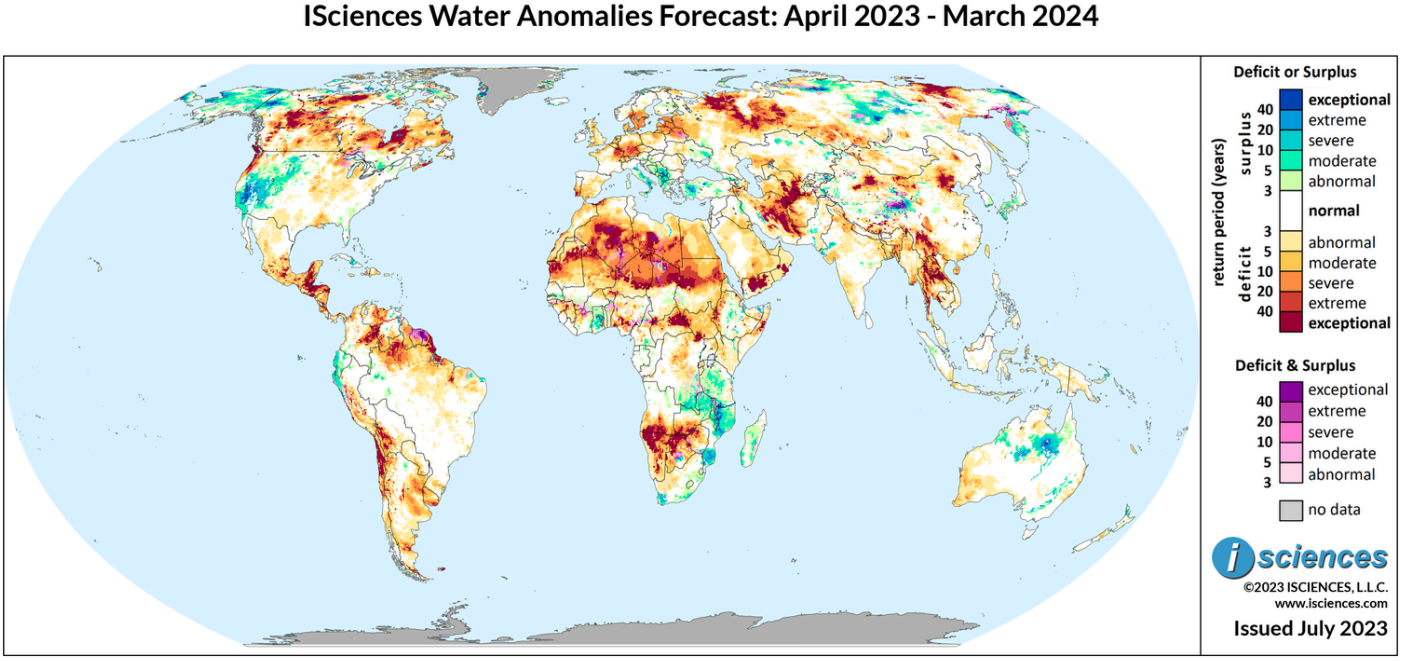
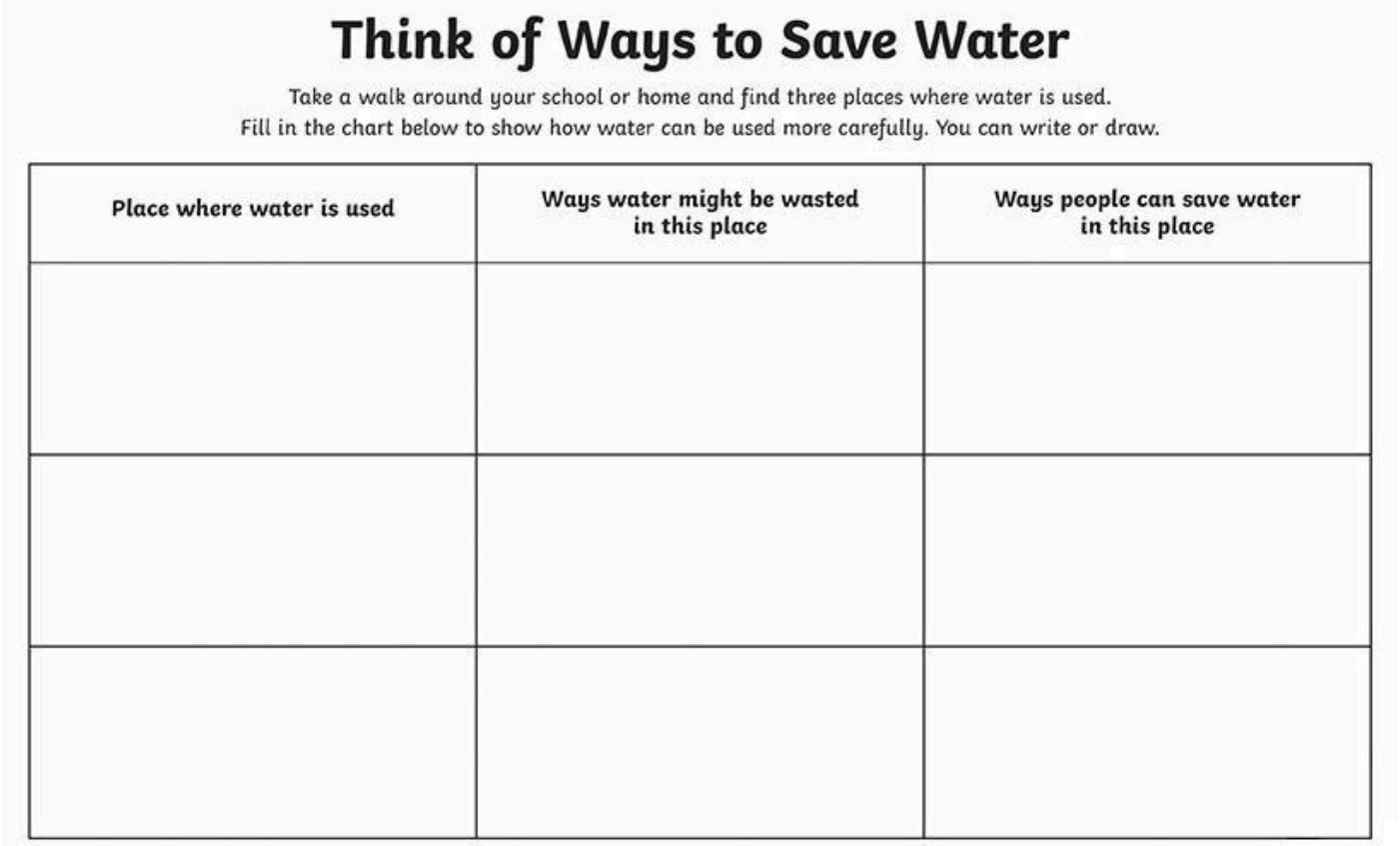



*Figure 3.1.2: Support figure. Source: Isciences. Link:*
*https://www.isciences.com/blog/2023/07/17/isciences-worldwide-water-watch-list-july-2023*

Reinforcement activities to assess whether students have learned what has been explained:



## Think of Ways to Save Water

Take a walk around your school or home and find three places where water is used.
Fill in the chart below to show how water can be used more carefully. You can write or draw.

| Place where water is used | Ways water might be wasted in this place | Ways people can save water in this place |
|---|---|---|
| | | |
| | | |
| | | |

*Figure 3.1.3: Support figure. Source: St Theresa College. Link: [https://www.j2e.com/St-Theresa-College-Birkirkara-Primary/Natasha+H/Think+of+Ways+to+Save+Water?blog=-1&revision=1](https://www.j2e.com/St-Theresa-College-Birkirkara-Primary/Natasha+H/Think+of+Ways+to+Save+Water?blog=-1&revision=1)*

**QUESTIONNAIRE TO COLLECT FEEDBACK ON THE TOPIC**

On a scale of 0 to 10, how likely would you recommend this subject to other students?

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

Not likely at all — Extremely likely

Why did you choose that score?

How could this issue be improved?