

## Lesson Plan: Clean Water – Every Drop Counts

### Learning Objectives

Students will:

- Understand the importance of clean water for people and society.
- Identify sources of water pollution and basic methods of water purification.
- Learn about the concept of the *water footprint* and reflect on how their choices affect water usage.
- Develop awareness of sustainable water practices and their own role as active citizens.

**Target Age Group:** 15-16 years old

**Duration:** 90 minutes

### Lesson Outline

#### 1. Introduction: Water in Our Lives (10 minutes)

- **Activity:** Brainstorm – “What do we use water for every day?” How we pollute water with every day use of water?
- **Discussion:** What does *clean water* mean? What happens when water is dirty?
- **Goal:** Activate prior knowledge and spark curiosity.

#### 2. Mini Lecture + Video (15 minutes)

- **Topics Covered:** The water cycle, pollution, and access to clean water.

**Video Suggestion:** Water crisis <https://www.youtube.com/watch?v=JyzvcrZluf0>

- **Slides Include:**

- Water cycle
- Clean vs. polluted water
- Pollution sources (every day use, agriculture, industry, plastic waste)
- Water as a limited resource – global perspective
- Apps for monitoring water usage

#### 3. Introducing the Water Footprint (20 minutes)

- **Teacher Explains:** What is the *water footprint* – the hidden amount of water used to produce food, clothing, technology and other goods.
- **Examples:**
  - 1 cotton T-shirt = 2,700 liters of water
  - 1 hamburger = ~2,400 liters

- 1 apple = 70 liters
- 20 prompt of chatGPT = 0,2 liters
- **Worksheet Activity:** Match everyday items to their water footprints.
- **Discussion:** "What does this mean for our choices?"

#### 4. Experiment: Cleaning wasted water: Water Filtration Challenge (15 minutes)

- **Task:** In small groups, students build simple water sand filters.
- **Materials:** Cut plastic bottles, cotton, sand, gravel, carbon tablets, dirty water (e.g. soil )
- **Goal:** Hands-on understanding of water purification in nature and creative problem-solving.

#### 5. Reflection and Group Discussion (10 minutes)

- **Guided Questions:**
  - "How did your filter work?"
  - "How can we reduce our water footprint at home?"
  - "What actions can we take as a class or school?"

#### 6. Active Citizenship: Water Pledge or Awareness Poster or Short Video for Social media (20 minutes)




- **Task:** Students create:
  - A *personal water pledge* (e.g. shorter showers, turning off taps, eating less meat)
  - an *awareness poster* to hang in school.
  - Short video for school social media page
  - Instal apps for monitoring water use
- **Optional Extension:** Host a school-wide *Water Awareness Day* or Kahoot quiz. Review of water bills, visit to the wastewater treatment plant, fieldwork: observation of dirty water under a microscope and chemical analysis of samples from nature."

#### Materials & Resources

- PowerPoint slides (teacher-created)
- Video: Water crisis <https://www.youtube.com/watch?v=JyzvcrZluf0>
- Printable worksheet: *Guess the Water Footprint* (match items to water use)
- Filter experiment: plastic bottles, cotton balls, sand, gravel, containers, dirty water

- Art supplies: paper, markers, colored pencils for posters
- Mobile phone

### Connection to GrACE Themes

-  **Environmental Awareness:** Students gain a deeper understanding of water as a natural and finite resource and wasteful use of water negatively affects the environment.
-  **Active Citizenship:** Through pledges, video clips and advocacy posters, students develop civic responsibility and learn how small actions make a big difference.
-  **European/Global Perspective:** Exploring global water access and consumption connects students to larger sustainability goals across Europe and the world.