GLU 2.2 Food and water

AUTHOR	Kopin
COUNTRY	Malta
AGE GROUP	8 - 11 years
SUBJECTS	English | geography | science | social studies
DURATION	2 lessons (50 minutes each) + extra time for supplementary activities
TOPICS	▪ Water footprint ▪ Sustainable use of resources ▪ Right to food/water
SDGS	SDG 2: Zero hunger SDG 6: Clean water and sanitation SDG 12: Sustainable consumption and production

Competences required

- Communication skills and knowledge of English
- The ability to work in a team
- Social and civic skills
- Listening skills
- Cultural awareness and expression
- Interpreting pictures

Learning objectives

To create awareness about:

- the link between food and water, emphasising that all food comes from living things, and that all living things need water;
- the importance of water in our life;
- the fact that water is precious, so we must conserve it;
- where our water comes from;
- the effects of drought – including food shortage and even death;
- water as a right
- unequal access to water.

Materials and equipment

- Interactive whiteboard or any other video/photo-screening equipment
- Material to create posters or charts (e.g., flipchart paper, crayons)

This publication has been produced with the assistance of the European Commission. The contents of this publication are the sole responsibility of Kopin (VO/0200) and its partners and can in no way be taken to reflect the views of the European Union.
"EAThink 2015 – Global Learning for Change in EYD 2015 and beyond: European Youth Engagement from School Gardens to Sustainable Food Systems" [Project Number: DCI-NSAED/2014/349-033]

- Pens/pencils and paper
- Computer/s to create presentations

Teaching tools

- Video clips: *"Water: who needs it?"* | *"WATER our most precious resource"*
- Pictures/photos
- Information on the Water Services Corporation (WSC) Reverse Osmosis Plant

Questions to discuss

- What would our world be like without water?
- In what ways do we use water around the home?
- What is water used for in different industries (farming, tourism, manufacturing, etc.)?
- Which foods need most water in the production process?
- Where does water come from?
- How could we avoid wasting water?
- Why should we conserve water and how can we do so?

Suggested evaluation tools

- **Class discussion:** Name what you have learnt about water during today's lesson that you found most interesting.
- **Class quiz:** Name five goods starting with the letters W A, T, E, R (1 letter per item) that need water to be produced. Visualise the answers on a poster, on the computer or the interactive whiteboard.
- **Follow-up session (group work):** Request students to formulate proposals for saving water, which they would then present to the school management team.
- **Homework (essay):** List five ways as to how you could avoid using too much water, based on a normal day in your life.
- **Homework (essay):** Imagine a day in your life without water. Describe your experience.

GLU 2.2 **Lesson plans**

GLU 2.2 **Lesson Plan 1** (50 minutes)

Learning objectives

- To learn about the link between food and water.
- To understand that all food comes from living things, and that all living things need water.

Materials and equipment

- Interactive whiteboard or other video / photo screening equipment
- Pens/pencils and paper

This publication has been produced with the assistance of the European Commission. The contents of this publication are the sole responsibility of Kopin (VO/0200) and its partners and can in no way be taken to reflect the views of the European Union.
"EAThink 2015 – Global Learning for Change in EYD 2015 and beyond: European Youth Engagement from School Gardens to Sustainable Food Systems" [Project Number: DCI-NSAED/2014/349-033]

Teaching tools

- Video clip: *Water: who needs it?*
- Pictures/photos

Questions to discuss

- What would our world be like without water?
- In what ways do we use water around the home?
- What is water used for in different industries (farming, tourism manufacturing, etc.)?

Suggested evaluation tools

- **Class discussion:** Name what you have learnt about water that you found most interesting during today's lesson
- **Class quiz:** Name five goods starting with the letters W A, T, E, R (1 letter per item) that need water to be produced. Visualise the answers on a poster, on the computer or the interactive whiteboard.
- **Homework (essay):** Imagine a day in your life without water. Describe your experience.

Activities

Time	Activity description	Additional tips
10 minutes	<u>Introduction:</u> The teacher asks the children to close their eyes and to imagine that they are on a picnic with their friends, on a sunny spring day. They are in a wooded area (e.g. Buskett) and can see trees, grass, flowers, a small stream. They can hear birds and insects. They are also having a snack (bread, fruit, biscuits) and drinking (water, juice, lemonade) and enjoying themselves. Suddenly some aliens come along, and they decide to steal all the water from our planet. What will happen? Will anything change? Pupils open their eyes and discuss what will change. Is it only the stream?	
10 minutes	The class watches the *Water – Who needs it?* video clip until 2:00. The video is discussed, especially highlighting the fact that all animals and plants need water to live. Pictures that can help to highlight this are available online. The link between plants, animals and humans should be emphasised: we eat animals and plants, all animals eat either plants and/or other animals, and all these living things need water, so we cannot survive without water.	

This publication has been produced with the assistance of the European Commission. The contents of this publication are the sole responsibility of Kopin (VO/0200) and its partners and can in no way be taken to reflect the views of the European Union.
"EAThink 2015 – Global Learning for Change in EYD 2015 and beyond: European Youth Engagement from School Gardens to Sustainable Food Systems" [Project Number: DCI-NSAED/2014/349-033]

7 minutes	The video is watched for a second time (until 2:00). Before watching, the teacher tells the pupils to look out for anything they might find strange or incomprehensible. After watching, the pupils discuss what they do not understand (probably about the body shrinking, and about not even having non-living things such as bicycles without water). Teacher says that answers to these will be found later.	
5 minutes	The teacher asks the pupils to work in groups and to list how and when they use water at home. Then video is resumed from 3:23 until 3:50.	
5 minutes	The teacher asks pupils to think of other ways in which water is used outside the home (agriculture, industry, cleaning of public spaces, etc.). Resume video at 3:50 until 5:02. Discuss the uses of water (e.g. farming, food processing, transporting food and other items; to manufacture cars and to produce fuel).	
13 minutes	<u>Conclusion:</u> Resume the video clip until 5:51. In groups, the pupils should draw up a list of uses of water, especially those related to food.	Ask the pupils to find related pictures and bring them to school for the next lesson. Charts could then be produced related to uses of water.
Hands-on experiment	As science could help explain a number of points that could arise from such a lesson, a seed-sowing investigation (as shown in the video) could be carried out with the children at some point in advance, before the lesson. This would help them examine the role of water in their investigation. The introductory time of this lesson could be used to take measurements of the differently watered plants, draw graphs representing their data, and using their data to draw conclusions about the importance of water for living organisms. This activity could be conducted in small groups, enabling learners to engage in discursive argumentation before disclosure.	The teacher could take the opportunity to assess skills such as: measurement, representing data in graphs and drawing conclusions from data on an individual basis.

This publication has been produced with the assistance of the European Commission. The contents of this publication are the sole responsibility of Kopin (VO/0200) and its partners and can in no way be taken to reflect the views of the European Union.
"EAThink 2015 – Global Learning for Change in EYD 2015 and beyond: European Youth Engagement from School Gardens to Sustainable Food Systems" [Project Number: DCI-NSAED/2014/349-033]

GLU 2.2 **Lesson Plan 2** (50 minutes)

Learning objectives

This lesson should create awareness about:

- the importance of water in our lives;
- the fact that water is precious so we must conserve it;
- where our water comes from;
- the effects of drought, including food shortage and even death;
- water as a right;
- unequal access to water.

Materials and equipment

- Interactive whiteboard or other video / photo screening equipment
- Material to create posters/charts (e.g., flipchart paper, crayons)
- Pens/pencils and paper
- Computer/s to create presentations
- Preferable: internet access (to access the Water Services Corporation's website)

Teaching tools

- Video clip: *WATER: our most precious resource*
- Pictures
- Information on the Water Services Corporation (WSC) Reverse Osmosis Plant

Questions to discuss

- Which foods need most water in production?
- Where does water come from?
- How could we avoid wasting water?
- Why should we conserve water and how could we do so?

Suggested evaluation tools

- **Class discussion:** Name what you have learnt about water during today's lesson that you found most interesting.
- **Follow-up session (group work):** Request students to formulate proposals for saving water, which they would then present to the school management team.
- **Homework (essay):** List five ways as to how you could avoid using too much water, based on a normal day in your life.

Activities

Time	Activity description	Additional tips
5 minutes	The teacher asks questions about the previous lesson, e.g.: **Why do we need water? How do we use water?**	

This publication has been produced with the assistance of the European Commission. The contents of this publication are the sole responsibility of Kopin (VO/0200) and its partners and can in no way be taken to reflect the views of the European Union.
"EAThink 2015 – Global Learning for Change in EYD 2015 and beyond: European Youth Engagement from School Gardens to Sustainable Food Systems" [Project Number: DCI-NSAED/2014/349-033]

10 minutes	In preparation for later discussion, the students are sent around the school to perform some ordinary 'water' or 'washing' tasks in groups of about 4 (one task per group). The 'washing' tasks would require the students collecting the water used and measuring the amount used. Students are to report back to class where they take note of all water wastage in millilitres and plot a chart. This enables students to work collaboratively, practice inquiry and investigative skills, observational skills, data collection, and reporting valid results based on observations and calculations. Subsequently they are presented with the display picture below. It is only then that students see full relevance in the chart. Discussion: **Which foods need most water in the production process?** The teacher allows the pupils to guess for a while, then displays this diagram:  Note: to highlight that meat-related foods require much more water.	Ideas for the tasks: to wash a cup with soap and water; to wash hands with soap and water; to wash some fruit with water; or to measure and calculate the capacity of a regular flushing cistern.
8 minutes	The teacher writes the word **resource**[1] on the interactive whiteboard (IWB). The students are to try and formulate a	If the students are already familiar with the

[1]Generally, the term **resources** refers to materials, energy, services, staff, knowledge, or other assets that are transformed to produce various item or provide certain services and, in the process, may be consumed or exhausted.

This publication has been produced with the assistance of the European Commission. The contents of this publication are the sole responsibility of Kopin (VO/0200) and its partners and can in no way be taken to reflect the views of the European Union.
"EAThink 2015 – Global Learning for Change in EYD 2015 and beyond: European Youth Engagement from School Gardens to Sustainable Food Systems" [Project Number: DCI-NSAED/2014/349-033]

	definition. Discuss water as a precious resource. Then, the teacher shows the *WATER: our most precious resource* video clip to the class.	word, the teacher could write it in a scrambled way, as a puzzle for the students to solve.
7 minutes	<u>Discussion:</u> **Where does water come from?** The teacher then reminds pupils of the lesson about the **water cycle**, showing a picture of the cycle. However, in some countries, such as Malta, there is not enough **rainwater/groundwater**, so we use sea water. To proceed to a brief explanation of desalination by **reverse osmosis**. Pictures of the plants can be shown and eventually, the teacher could show the relevant information on the WSC website during the lesson.	It would be advisable to first explain to the students what groundwater is, and optionally to explore issues related to groundwater in Malta further. In the absence of internet access, a PDF print-out could be handed out and read together.
5 minutes	The teacher shows pictures of **drought**: parched land, starving livestock, dried crops, people in search of water or migrating, and asks these questions: **What can you see? What do these pictures have in common? Why does this happen?** Elicit that, in such a situation, if there is no water there is no food. Plants and animals die, humans can't live there, so they have to migrate in search of water sources. Water is a right – people in dry regions (and this could also include Malta) suffer injustice and inequality. Lack of (clean) water leads to poverty, disease, displacement, even death.	
15 minutes	Display the logo of the 'Catch the Drop' campaign. Ask the students if they are familiar with it and what it means. Elicit ways in which we could conserve water and why we should do so. <u>Group work:</u> The students prepare charts and presentations in groups. Half the groups focus on the uses of water, using the pictures they have brought from home. The other half of the class focuses on water conservation and how not to waste water, creating slogans and posters.	This activity could be linked to the Maltese 'Catch the Drop' campaign in schools.

This publication has been produced with the assistance of the European Commission. The contents of this publication are the sole responsibility of Kopin (VO/0200) and its partners and can in no way be taken to reflect the views of the European Union.
"EAThink 2015 – Global Learning for Change in EYD 2015 and beyond: European Youth Engagement from School Gardens to Sustainable Food Systems" [Project Number: DCI-NSAED/2014/349-033]