GLU 1.4 Ecological footprint

AUTHOR	CARDET
COUNTRY	Cyprus
AGE GROUP	10 - 13 years
SUBJECTS	environmental studies | health education | language
DURATION	4 lessons (40 minutes each)
TOPICS	▪ Critical consumption ▪ Water ▪ Food environmental impact
SDGs	SDG 7: Affordable and clean energy SDG 11: Sustainable cities and communities SDG 12: Responsible consumption and production SDG 13: Climate action SDG 14: Life below water SDG 15: Life on land

Competences required

- Communication skills
- Learning to learn
- Social and civic skills
- Cultural awareness and expression

Learning objectives

This unit will enable the students to:

- become aware about the limited capacity of our planet to provide natural resources;
- understand the extent of our footprint on the planet, as a direct consequence of our daily routines and activities;
- know the definition and usefulness of the ecological footprint as a means to measure natural resources and our consumption of these resources;
- discover the relation between the ecological footprint, the environment and the welfare of humans;
- take a critical stand against the current consumerism practices that increase the ecological footprint, and suggest ways to deal with the problem;

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- challenge the social model of over-consumption and implement small ecological-footprint solutions;
- adopt (and encourage others towards) practices that are linked to sustainability and the protection of the environment;
- take a positive stand towards small ecological-footprint choices and to avoid choices resulting in a large ecological footprint.

Methodologies

- Debate and classroom discussions
- Group work
- Student presentations
- Use of video and simulation programmes, peer-to-peer teaching
- Encouraging self-reflection

Materials and equipment

- A computer for the teacher
- A computer for each students' group
- Projector
- Internet access

Teaching tools

- **Worksheets***:* "Introduction to Ecological Footprint" | "Dealing with the Problem"
- **Slideshows:** *"*The Ecological Footprint*"* | *"*The Ecological Footprint of Milk*"*
- **Video clips (optional):**
  - *The Age of Stupid – Consumerism* (1:38 minutes) – available on YouTube
  - *The Ecological Footprint Explained* (1:20 minutes) – available on YouTube

Questions to discuss

- What are natural resources and what is their importance for humans?
- What is the ecological footprint?
- Which dangers are revealed by the ecological footprint for humans and the environment?
- How could the problem be addressed?

Suggested evaluation tools

- Questionnaires to be filled in by the students: one before the 4 sessions, and another at the end of the unit.

Additional resources

- World Wide Fund for Nature (WWF) www.wwf.org
- "Find your Ecological Footprint" on the WWF website

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- "Ecological Footprint Quiz" on the Earth Day website
- Global Footprint Network
- World Wide Fund for Nature (WWF) www.wwf.org

GLU 1.4 Lesson plans

GLU 1.4 **Lesson Plan 1** (40 minutes)

Activities

Time	Activity description	Additional tips
5 minutes	To establish existing knowledge of the students on the topic, the teacher distributes a questionnaire to be filled in at the beginning of the first lesson.	It is up to the teacher to decide whether students will write their name on questionnaire.
5 minutes	<u>Introduction:</u> The teacher asks the students to explain what they know about consumerism.	Optional: To screen the 'Consumerism' video clip.
15 minutes	Students study two short passages, which present a problem related to the ecological footprint, i.e. the demand of humans for natural resources is higher than what the planet can provide.	Short discussion on the term 'natural resources'. The students answer questions (perhaps as homework).
15 minutes	The teacher shows the "The Ecological Footprint" slideshow (10 slides) to the students, adding any relevant comments. The students would be encouraged to take notes on key points regarding the significance of the ecological footprint.	<u>Optional:</u> To screen the *The Ecological Footprint Explained* video clip.

GLU 1.4 **Lesson Plan 2** (40 minutes)

Activities

Time	Activity description	Additional tips
10 minutes	The teacher explains the main features of the **ecological footprint (EF)**: ▪ What it is. ▪ Its size and how it is calculated. ▪ How it compares with biocapacity.	Adjust the types of information on EF to be searched, i.e. calculation method, unit of measure, etc., to the

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	▪ Its current and future status. It is important that the students understand the significance of the ecological footprint in relation to sustainable development.	students' age.
15 minutes	The teacher shows the students the "The Ecological Footprint of Milk" slideshow, which outlines the EF of milk. The students then fill in the relevant worksheet ('Introduction to Ecological Footprint').	The students should be able to apply the milk example in the presentation in general assumptions, i.e. that every product/ service leaves behind an EF.
15 minutes	The teacher asks the students to choose another product or food, and to trace its EF as was done for the EF of milk. Three kinds of food are recommended (namely: strawberries, cheese and canned tuna) but the students could choose any other items they want.	The exercise may be conducted in groups.

GLU 1.4 **Lesson Plan 3** (40 minutes)

Activities

Time	Activity description	Additional tips
15 minutes	This lesson addresses the **ecological footprint** (EF) in the world and in the European Union (EU). The teacher explains that the EF is measured in hectares, and it is often expressed in number of planets, e.g.: Biocapacity is 1.7 hectares and the EF is 2.7 hectares. Therefore, since the EF is about 50% larger than the biocapacity, 1.5 planets would be needed in order to cover our needs.	The numbers relating to biocapacity and EF differ significantly from source to source/research.
10 minutes	The teacher presents graphs about the EF of each EU member state for the students to analyse. As explained above, the EF is expressed in terms of number of planets.	Students make correlations between the EF and people's lifestyles in each country.
15 minutes	This part of the lesson is about the EF of different countries. The students are encouraged to visit certain websites (as indicated by the teacher) to look up graphs on EF	If there are not enough computers, the task may be conducted through a class presentation on 3 or

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	and biocapacity in different countries around the world. The teacher should help students recall what EF and biocapacity are.	4 countries.

GLU 1.4 **Lesson Plan 4** (40 minutes)

Activities

Time	Activity description	Additional tips
15 minutes	This lesson covers the ecological footprint (EF) of the individual or a family. The students are encouraged to visit certain websites (as indicated by the teacher) to gather information to be able to answer the questionnaire in order to calculate their EF and that of their family. The following is the recommended website for this task: http://footprint.wwf.org.uk/ (English)	If there are not enough computers, the task may be conducted through a class presentation. Students could calculate the EF of other family members at home.
20 minutes	Students discuss and take notes on practical ways to reduce the EF, focusing on daily diet, electrical energy, water, emissions and waste, transport, forests.	The suggestions are announced and discussed.
5 minutes	In conclusion, the teacher asks the students to fill in a (second) questionnaire – this time to establish what the students have learnt from this GLU.	

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