

GLU 1.3 Composting garden

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COUNTRY	Croatia
AGE GROUP	8 - 14 years
SUBJECTS	science social studies biology chemistry
DURATION	2 lessons (45 minutes each) + possibility of continuation of composting throughout entire school year
TOPICS	<ul style="list-style-type: none"> ▪ Education to choice / critical consumption ▪ Composting / gardening ▪ Food waste ▪ Water ▪ Sustainable agriculture ▪ Food environmental impact ▪ Discovering the food chain
SDGs	SDG 2: Zero hunger

Competences required

- Communication skills
- Numerical skills and basic abilities in science and technology
- Learning to learn
- Social and civic skills
- A sense of initiative and entrepreneurship
- Cultural awareness and expression

Learning objectives

- To develop an awareness about the environment, and a sense of responsibility for a healthy and a cleaner environment.
- To emphasise the importance of organic fruits and vegetables for our health, and the impact of sustainable food production on the environment.
- To learn what composting is, how to compost properly (i.e. which organic matter can be composted and what type of waste is not suitable for composting).
- To raise awareness of the problems caused by food waste in households.
- To become familiar with saving money and resources in the household, towards reducing waste.
- To learn which type of waste is valuable resource, and how to manage it more effectively.



Methodologies

- Interactive game
- Hands-on activities.

Materials and equipment

- DIY poster with illustration or a drawing of a simple composting bin with empty layers.
- Tools for composting, wooden boards and tools for making DIY composting bin.
- A poster with a drawing of a simple compost heap.
- About 20 cards, each with a simple illustration of a drawing of organic waste for composting, 10 sample cards with drawings of inorganic waste from other categories of waste (e.g. glass cup, pen, socks, tin, etc.)
- PC and projector
- Wooden boards, nails, a hammer and/or a shop-bought composter

Teaching tools

- Video tutorial for home composting¹

Questions to discuss

- How does composting help reduce waste and pollution of the environment?
- How could every individual help renew and enrich the soil and its quality?
- Could we, ourselves, help reduce food waste? In what ways?
- Could we compost without having a garden, for instance in spaces such as a small apartment, or on a balcony?
- What could we do with the result of composting (humus) if we do not have a garden in which to use it?

Suggested evaluation tools

- **Practical assignment:** An experiential learning activity in the school garden or school backyard and active participation and contribution of a school caretaker or a volunteering parent.
- Games as described in the Lesson Plans.

GLU 1.3 Lesson plans

¹ The original video is in Croatian: *Video priručnik za kućno kompostiranje* – written by: Cvijeta Biščević; produced by: Zelena akcija) (available at: https://www.youtube.com/watch?v=t_1HL9H1cnA). It is possible to find similar resources in English by searching the words ‘home composting tutorial’. Please make sure to select the resource that is best-suited to the target age group.

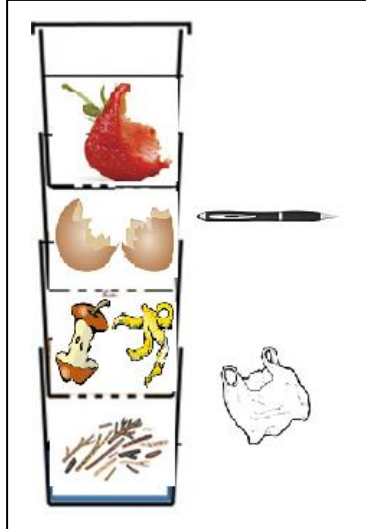


GLU 1.3 Lesson Plan 1 (45 minutes)

Activities

Time	Activity description	Additional tips
10 minutes	Start the lesson with introductory conversation about food waste in our homes, and food-waste management in the various households. Continue with discussion about the waste mentioned, and what could be reused, upcycled, or recycled (following an explanation of each of these terms). Explain where this waste goes, how it affects the environment and introduce the main topic: composting as an intelligent way of managing resources.	Let students list and name types of waste specific to their household. Motivate them to think of ways to reuse, upcycle listed waste. Ask if some of them compost organic in their homes or have some relevant experience in this respect.
10 minutes	<p>Through a basic slideshow, outline organic waste, types of organic waste, and which are suitable for composting; explain the process in short, divide green and brown components and show the tools needed for the process of composting, possible types of composting bins and possible places where these could be placed (backyard, garden, balcony, under the kitchen sink).</p> <p><u>Evaluation Game:</u> Each student receives three cards of various waste items, some of which are to put in the composter, and some are not. One by one, students stick a card to the corresponding poster, displaying different types of waste (e.g. electrical, compost, old batteries, pharmaceutical, paper, plastic, household waste, etc.).</p>	Adapt the slideshow to the students' age and their previous knowledge. Whenever possible, use real items instead of the presentation, to enable the students to touch them, smell and feel them firsthand.
5 minutes	<p>Divide the class into small groups each having the same number of students (e.g. 25 students will form 5 groups of 5 students). You can make the process a bit more 'fun' by doing this short game:</p> <p>Each group should form a circle facing the middle and propose a number of seasonal and local fruit and vegetables (number depending on the number of the students in the group). Teacher and students decide which of the chosen fruit and vegetables will be used in the activity, and the order in which they will be called out. Each student pronounces one of the items in the agreed order. Once the members of a group have each called out the vegetable/fruit according to the list, the next group goes through the list in turn (for example, carrots, onion, garlic,</p>	Ask the students to propose ingredients. Give priority to seasonal and local ingredients.



	broccoli, cauliflower, carrots, onion, garlic, and so on). The students are then regrouped according to the vegetable/fruit they called out. Each new group sits at one separate school desk.	
20 minutes	<p>Competition in teams: Building a compost pile.</p> <p>Hang up an illustration/drawing or poster of a simple compost pile divided into levels (green and brown layers) on a board. On the school desk in front of the drawing or poster lay out cards with drawings of various items from different types of waste (face down, so that the students can't see what is on the cards).</p> <p>One by one from each group they come to the illustration of a simple composting bin with empty layers. Their task is to pull out one of the cards on the desk (i.e. with a drawing of an organic item – green or brown – or another type of waste (glass, plastic, etc.))</p> <p>The students are to start filling the mock bin from the bottom: first the small branches (brown layer), then the green one (e.g. lettuce); and then again a brown layer (e.g. dry leaves), a green one (e.g. apple scrap) and so on.</p> <p>Each group gets 1 point for choosing the right items to place into the mock bin in the correct order, or which items are not to be added to the 'bin'.</p> <p>This game could be played for as many rounds as desired.</p>	 <p>If there is time or resources, the winning team can receive a symbolic award for being 'composting heroes'.</p>

GLU 1.3 Lesson Plan 2 (45 minutes)

Activities

Time	Activity description	Additional tips
N/A	<p>For this lesson, the students should create a (real) compost bin to be placed in the school garden or in the immediate school surroundings.</p> <p>Once the compost bin is set up correctly, prepare a bed of twigs at the bottom; then place prepared organic waste from the school kitchen or waste brought by the students from home.</p>	<p>In this activity, the class could seek the help of the school caretaker and/or volunteering parent.</p> <p>If there are no proper conditions (no school garden), a shop-bought compost bin could be used; the teacher and students would decide together where</p>



		to set it up on the school premises or school surroundings.
10 minutes	<p><u>Discussion:</u> What could we feed into our composter? With what could we feed our school garden?</p> <p>This discussion helps remind the students what they could put in the bin during the school day, taking care of it (organising teams of student and assignments). In addition, students plan what could be done with the resulting humus from this school composting exercise. Some ideas: fertiliser for a school garden, donating it to a local urban garden, or to neighbours, kindergartens, etc.</p>	<p><u>Suggested game to foster the discussion:</u> Students stand in a circle and pass a small ball to each other. Each of them who catches the ball must say one food/organic matter that can be composted, then throws the ball to someone else and so on, until all students mention at least one organic item that could be composted.</p>
5 minutes	<p>To conclude, all students participate in the final (evaluation) game.</p> <p>Students should stand around the composter. One by one, a student or a teacher calls out a food item or other items. If they think that it could be composted they squat or kneel, and if they think it cannot be composted, the students remain standing up.</p>	<p>Students who remain standing up even if the item that has been called out is good for composting should explain why do they think is not good for composting and vice versa, in order to repeat one more time what can and what cannot be composted.</p>

