BLOOM Stories

Title of your Story of Adaptation

My Kitchen Without Food Waste

Name of the author(s)

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Category

Please indicate with an "X" which prize category you wish to enter. Note that each category is judged according to specific criteria (to be found on the competition page and in Terms and Conditions). Only one category should be selected.	X
1. Teaching with bioeconomy in primary schools (individual work)	x
2. Teaching with bioeconomy in secondary schools' STEM classes (individual work)	
3. Integrated STEM teaching with bioeconomy – collaborative teaching (teams of two STEM teachers of different subjects)	
4. Integrated STEAM teaching with bioeconomy – collaborative teaching (teams of up to three teachers of different subjects, including at least one STEM teacher and at least one non-STEM teacher)	

The BLOOM resource used

Please indicate with an "X" which BLOOM School Box resource you adapted.	X
Bloom your school with your biofuel and soap lab	
Examining the thermal properties of bio-based building materials	
Building a new environmental Future	
Growing plastic and new life for plastic	
How poop will change the world	
Don't waste your waste! - Raising Bioeconomy awareness	x

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Please indicate with an "X" which BLOOM School Box resource you adapted.	X
Yeast, biofuels and novel biotechnology techniques'	
Let's talk about bioenergy and our lives!	
The benefits of composting – How we can produce organic fertilizer in our school garden	
Biofuel production from fruit waste	
Back to the Future	

Abstract

Please briefly summarise your adaptation (maximum 200 words). Note that this summary will be used to disseminate your work, so it should be concise and appropriately reflecting the content. Make sure to add up to 5 keywords that you think best describe your adaptation.

Due to the COVID 19 circumstances we cook more often than usual at home and avoid going to the shop very often. These make us face problems such as stockpiling food at home, spoiling food, and, consequently, food waste.
My students, through activities in the kitchen, and following SDGs learning, will show how it is possible to be responsible for the environment to reduce household food waste. The activities they carried out in their homes are preparing meals from surplus foods, preparing meals without creating waste, or showing how they and their householders reduce food waste in their homes. These are dishes that are traditionally used in Serbian cuisine, which do not require expensive ingredients and often exist in every Serbian home.
"My kitchen without food waste" is part of the project "Bio-waste Management Challenge" organized by the Ministry of Environment of Serbia and UNDP Serbia, aiming to come up with innovative solutions for improving waste management by European Union standards.

Keywords: Home, Food, Waste, Consumption, Bioeconomy

The adaptation context

Please briefly describe the context of your adaptation, specifying: what subject(s) you chose to adapt the resource in, what are the students' ages, the size of the group, previous familiarity with bioeconomy activities, etc. (maximum 200 words).
Please note that the competition looks to collect stories of adaptation, so the context must appropriately reflect this.

Since schools were closed due to the COVID19 pandemic, it was not possible to do all the activities from the learning scenario "Don't waste your waste!". That is why it was necessary to adapt this LS in the new circumstances of distance learning.

This Story of Adaptation was created by combining several school subjects that exist in Serbian primary school education: guardians of nature, household, and civics. My students are 10-11 years old and are familiar with Sustainable Development Goals. They knew what sustainable agriculture was because they had opportunities to see how organic food was being nurtured, they learned what kinds of pollution there were in our country and pollution impacts on global climate change.

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This mini-project involved 10-12 students, all activities were voluntary, and the challenge lasted 5 days. Parents were involved in the realization of the project by giving support from home, however, students had a lead role

Your story

What would you do? Please describe how you would use the BLOOM School Box in your online classroom/teaching. For example, what would be the structure of the session(s); how would you adapt the resource?
If you are entering the competition in categories 3 or 4 (collaborative teaching), describe how you would work together with your colleagues to carry out the online lesson. (maximum 400 words).

During the first lesson, taking place online (through Zoom), I explained briefly what the LS "Don't waste your waste!" was all about. We concluded that we could not do the whole scenario, just the practical part of experimenting at home. That day was Earth Day and, inspired by BLOOM project's name, we decided to deal with food waste in our way.

I told them the following facts:
A third of the food produced in the world is discarded, while globally more than 800 million people are still starving. Food that ends up in landfills breaks down and emits gases with the effect of glass garden, methane, and carbon dioxide, which negatively affects climate change. (Sources: UN Food Index; UN Sustainable Consumption Production; UN Climate Change)

Then I asked them how they would reduce food waste, so the debate developed, and the conclusions were the following:
By reducing food waste

1. we are saving the environment and saving money,
2. the easiest way to do that is to plan grocery shopping and meals,
3. freeze the edible leftovers of meals for later,
4. and cook using the foods we already have in the household.

These conclusions were based on the task: to make a video or photo of a meal made from surplus foods, a meal in which no waste is produced, or to show how they and their households reduce food waste in their home.

The students worked very consciously for five days and they took the issue seriously. Students needed to make their proposal for breakfast, lunch, and dinner. Their recipes and photos can be seen in the Presentation created with Sway in the Annex.

I was delighted with their work results and we organized another online lesson for me to provide them feedback and tell them about the Sustainable Development Goals. I reminded them that this activity is part of the SD Goal 12: *Responsible consumption and production* and SD Goal 13: *Climate Action*. Finally, I explained to them the concept of bioeconomy. It represents the sustainable production of renewable land and aquatic resources and their conversion into food, bio-based

products, and bioenergy.

Learning outcomes

What would you like to achieve? Please describe the main learning outcomes you would like to achieve with the adaptation of the selected School Box resource. Tell us about anything that supports your case for achieving these learning outcomes. For example, student comments from previous activities, or any other evidence that illustrates that using and adapting one of the School Box resources would be beneficial and impactful for your students.
Note that you MUST have permission to include any photographs or screenshots especially parental permission in the case of young people. Any pictures you include should be added directly in the entry form.

My objective was to increasing interest, awareness, and appreciation among school students to the impact of science in our daily life and to show them the link between bioeconomy, its application, and importance to everyday life.

After our project, I am can say that:

1. Students can define bioeconomy.
2. Students can describe bio-waste.
3. Students are aware of the problem of buying too much food, rotting, destroying, and throwing food.
4. Students can critically identify ways to reduce food waste.
5. Students improved and raised their awareness in pro of environmental protection.
6. Students were able to guide their projects or activities.
7. Students learned to think critically and develop problem-solving skills.
8. Students increased their passion for learning and developed creativity.
9. Students could prepare a small meal from the food they have in the house.
10. Students loved to have the final product they can exhibit.

Teaching outcomes

What would you, as a teacher (or a group of teachers) get out of teaching online with the BLOOM School Box? What would you say to other people thinking about using bioeconomy in their teaching?
If you are entering the competition in categories 3 or 4 (collaborative teaching), please also describe your experience in collaborating with teachers of other subjects in your classroom. What is different from traditional teaching? (maximum 200 words).

Teaching with BLOOM School Box helped me gather important information on bioeconomy and bio-waste in general. Then I learn how to enhance students' problem-solving skills through context-based learning and how to cultivate their abilities to analyze questions and then select and develop solutions. Lastly, I learned how to help students to dive in "hands-on learning" and to encourage them to apply essential content knowledge in meaningful ways.

I recommend teaching bioeconomy because teachers will learn to encourage students to incorporate arts into a STEM project. By adding the elements of arts to STEM projects students can use both sides of their brain—analytical and creative—. STEAM education sparks students' imagination and enhances their flexibility, productivity, and innovation.

21st-century teachers consider themselves co-learners we learn while teaching. There is a conscience of not knowing everything before teaching or being the only holder of knowledge. This is one of the best characteristics of a 21st-century teacher**.**

About the BLOOM project

BLOOM is an EU Coordination and Support Action implemented from 2017 to 2020. The project aims at bringing together partners from across Europe to debate, communicate, and engage the public in the potential of bioeconomy. An economy based on biomass promises to foster a circular economy and to enhance climate change mitigation while reducing dependence on fossil fuels. Bioeconomy covers a broad range of sectors, from agriculture and the agrifood industry, to fisheries, forestry, biorefineries, chemistry and (bio) energy – but despite its many applications, it has yet to enter into the public consciousness as an exciting solution to societal challenges.

Annex

Photo by Chandra Oh on Unsplash -See License

My kitchen without food waste

Here are some examples of my students' meals prepared from surplus foods and/or without creating waste.

Breakfast by Student 1

I made "POPARA" because it is easy to cook. Ingredients: older bread, cheese, butter and hot water. Put the water to boil. Chop the bread and cheese into small cubes. When the water boils, throw in a piece of butter. Then pour it all over the bread and cheese. It's delicious, made of nothing and used surplus foods in the right way!

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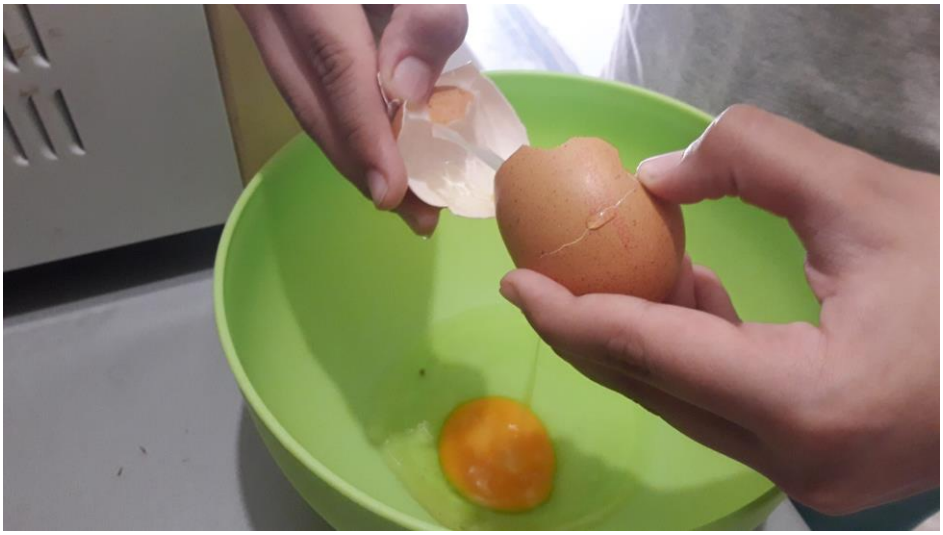
Breakfast by Student 2

PANCAKES easy to made because every Serb always has eggs, flour and milk in his fridge.



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Lunch by Student 3

I suggest a dish made of three ingredients: roasted peppers, black onions, and eggs. Mix it all up, fry in oil and your lunch is ready. Its name is PRZENO.



Lunch by Student 4

All well-known POTATO CHIPS fried in oven in Serbian way. Peel potatoes as desired, salt and bake in oven.

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Dessert by Student 5

This is SUTLIJAS, made of boiled rice and milk, with sugar and cinnamon. I like it very much and I made it by myself.

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Dinner by Student 6

We used the old bread by making hot sandwiches in oven. In addition, you can put some salami, cheese, some ketchup, and spices. Very simple, very tasty.

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Process of making crumbs of old bread by Student 7

Crumbles (PREZLE in Serbian) are actually ground dry bread and are primarily used for the frying of fish, meat and vegetables.

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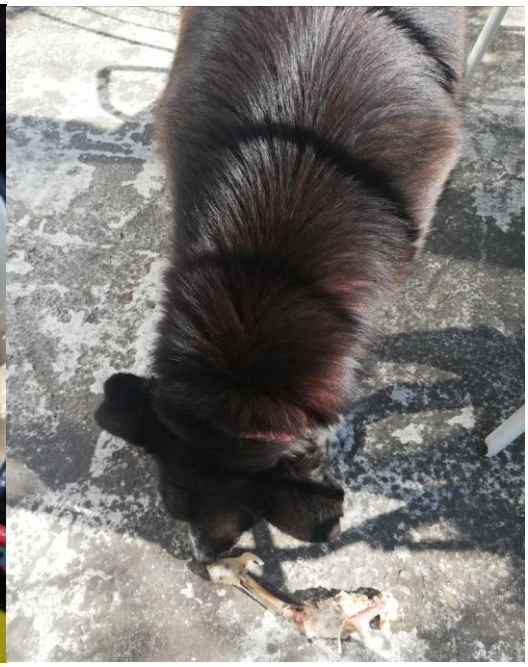
Student 8's funny but real advice

We're eating some food for lunch. We put the rest of that food in a metal bowl, add the bread and some water, and it is ready to serve to my dog Zuca.

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Student 9's little secrets

Stale bread should not be thrown. It can be baked. Put a slice of bread in the scrambled eggs and then fry in the frying pan on hot oil. These are PRZENICE in Serbian.

An older jam can be used for cakes that are baking, such as Schtrudla.

1 – Przenice -Pictures were provided to the author with the appropriate authorisation to be shared – CC-BY

2 – Strudla- -Pictures were provided to the author with the appropriate authorisation to be shared – CC-BY