

Our precious food

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Scientix Learning ScEnario

Title

Our precious food

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Summary

Cooking represents everyday necessity, but not always we do it properly. Students will start to broaden their horizon concerning the quality and the quantity of the food they eat. Food waste is also a global problem. We are trying to solve it locally.

Keywords

Food, cooking, composting, making a video

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Overview

<i>Subject(s)</i>	Biology, ICT, English Language
<i>Topic(s)</i>	Food :
<i>Age of students</i>	14
<i>Preparation time</i>	English language : 1 hour Biology : 1 hour ICT : 30 minutes
<i>Teaching time</i>	English language – 2 hours Biology – 45 minutes IT – 45minutes Interdisciplinary class – 45 minutes to 1 hour
<i>Online teaching material</i>	Microsoft Teams (all the links are given in the class's virtual classroom) Learning Apps : English: https://learningapps.org/27016431 https://learningapps.org/27038503 https://learningapps.org/27038428 Biology : https://learningapps.org/27037957 https://learningapps.org/view27038358 YouTube : https://youtu.be/9zvFresyPmA Padlet https://padlet.com/mzdravkovic1/irmby6cpl04trl4 TedEd Talks https://youtu.be/pkzunP1s6cY
<i>Offline teaching material</i>	English : 70cm x 100cm white paper, sticky notes(different colours for different groups), ICT : Power Point presentation : Video editing

	<i>Biology : a wooden box, shovel, dirt.</i>
<i>Resources used</i>	TedED video: School myths: food https://youtu.be/pkzunP1s6cY Youtube video on composting https://youtu.be/9zvFresyPmA

Aim of the lesson

Students will be able to name different kinds of food.
 Students will be able to describe the process of preparing a meal.
 Students will be able to record and edit a video.
 Students will be able to make a compost.

Trends

Student Centered Learning: students and their needs are at the centre of the learning process.

Assessment: the focus of assessments is shifting from "what you know" to "what you can do."

Project-Based Learning: students get fact-based tasks, problems to solve and they work in groups. This kind of learning usually transcends traditional subjects.

BYOD: Students bring their own mobile devices to the classroom.

STEM Learning: Increased focus on Science, Technology, Engineering, Mathematics subjects in the curriculum

21st century skills

Communication – students will work on their reading, writing, speaking, and listening skills to engage in productive discussions.

Collaboration – students work in pairs and groups to complete activities and tasks.

Creativity and innovation – students create and develop new ideas and learn how to address challenges.

Critical thinking – students explore ideas and discuss, respect, and credit other points of view.

Problem-solving – students engage in solving real-world problems and develop the ability to find a solution/answer.

Leadership and responsibilities – students develop the ability to guide and motivate each other.

STEM Strategy Criteria

Elements and criteria	How is this criterion addressed in the learning scenario
Instruction	
Personalization of learning	The learning scenario intends to address different learning needs and students' interests. Students can excel at different spheres of interest – English language, Biology – agriculture, ICT – video making and editing
Problem and project-based learning (PBL)	The teacher provides open-ended questions and lets students find a solution. Students have the destination they need to reach, but their journey is a unique experience.
Inquiry-Based Science Education (IBSE)	Students are encouraged to investigate, make conclusions and solve the problems.
Curriculum implementation	
Emphasis on STEM topics and competencies	The curriculum highlights STEM topics and competences, whereas the language is an instrument.
Interdisciplinary instruction	This Learning Scenario will help us examine and implement a variety of activities in a wide spectrum of subjects, ranging from English as a second language (non-STEM) biology, chemistry and IT (STEM).
Contextualization of STEM teaching	Real-world problems and experiences are presented to the students. Food waste is a global problem. We are trying to solve it locally.
Assessment	
Continuous assessment	Formative assessment is conducted in several ways : teacher observation, task completion. Summative assessment is done at the end of the LS.
Personalized assessment	After presenting their video, students give feedback and receive it from their teacher and peers. (Teachers give feedback at the interdisciplinary lesson, Padlet is used for peer`s feedback.)
Professionalization of staff	
Highly qualified professionals	Different layers of this LS and professional support given by ICT teacher and biology teacher.
Existence of supporting (pedagogical) staff	Our support staff play an important role in ensuring the students are learning in a safe and encouraging learning environment.
Professional development	Our school provides avenues for all staff's professional development, especially in teacher capacity building.
School leadership and culture	
School leadership	Existence of a governing board and management teams.
High level of cooperation among staff	Staff are encouraged to support one another and work together, having the space and time to do so.
Inclusive culture	All opinions matter and are valued in our school.
Connections	
With industry	Professionals could be invited to the classroom.

Elements and criteria	How is this criterion addressed in the learning scenario
With parents/guardians	Parents present their profession through school activities. Since this LS is originally planned for the satellite classroom which is located in the nearby village, parents are invited to support and advise the making of compost.
With other schools and/or educational platforms	The learning scenario can be presented at a staff meeting.
With universities and/or research centers	An ecologist or other professionals in the field could be invited to the classroom.
With local communities	Students are aware of ecological problems, locally.
School infrastructure	
Access to technology and equipment	There is internet access at the school, an ICT classroom with computers and a projector in every classroom
High quality instruction classroom materials	The school and its staff are encouraged to create high quality personalized resources.

Lesson Plan

Lesson 1 : English as a second language (60min)

Name of activity	Procedure	Duration
Brainstorming	Students in randomly made groups of 4-5, write different names of food on sticky notes (1 word per note, every group has a pack of differently coloured notes). It is important that groups don't see each other's words.	15 min
Food pyramid	Students do an exercise on Learning Apps (https://learningapps.org/27016431) (they do it individually, but are still grouped). After analysing the results as a class, the teacher hangs a replica of a food pyramid from the Learning Apps exercise (paper 70 x 100). Groups take turns to add words (sticky notes) to the pyramid. The rule is that they can add words which haven't been mentioned in the exercise. Each new word is one point. The winners can pick their pair for the final activity.	25 min
What should we eat?	Words to pre-teach: debunk, obesity, lump, diabetes, heart disease, sparingly, mislead, emphasis. Students watch TedEd video (School myths: food https://youtu.be/pkzunP1s6cY) and discuss: What should we eat?	20 min

Lesson 2 : Biology (45 minutes)

Name of activity	Procedure	Duration
Intro	Students answer the question: What is food waste? Can we reuse it?	5 min

Recycling of food waste	Backyard composting – Students are explained what composting is and what it is used for. Students watch the video https://youtu.be/9zvFresyPmA Checking the understanding : Students do an activity at Learning Apps (https://learningapps.org/27037957)	25 min
To compost or not to compost?	Students to an activity “To compost or not to compost?” (https://learningapps.org/view27038358), after the explanation that not all the food can be composted. Teacher gives any further explanations, if needed.	10 min
Deal for the future	Students are told to gather their food waste and bring it to school, weekly, to compost. The fertilizer will be used for gardening at school. Teacher gives detailed instructions.	5 min

Lesson 3: English (45 minutes)

Name of activity	Procedure	Duration
Cooking verbs	Students match cooking verbs to the pictures. https://learningapps.org/27038503	10 min
The process	Students are explained that they are going to prepare a meal and make a video of their cooking. Students fill in the example of giving instructions. (https://learningapps.org/27038428)	15 min
Closer to the goal	Teacher explains that students are going to make a video while preparing a meal of their choice. The members of the winning group from the previous class can choose their pair for this activity, the second placed group chooses afterwards and so on. Students work in pairs, but each one has to record a video of their own. The point of this pairing is that they will need help doing the task, a student alone can't cook and film at the same time. In order to complete the task, students have to pick a recipe, read the ingredients, and explain what they are doing while cooking. When they film the video and edit it, they'll need to post their video on the Padlet wall. Students ask questions.	20 min

Lesson 4 : ICT (45 minutes)

Name of activity	Procedure	Duration
Revision	Students are shown a presentation to revise editing a video (Video editing.pptx).	5 min
Getting things done	Students edit their videos by accomplishing several demands: <ol style="list-style-type: none"> 1. Add a title sequence 2. Add background music 3. Add the text of a recipe 4. Add your video to the Padlet wall: https://padlet.com/mzdravkovic1/irmb6cpgk104trl4 	40 min

	5. Comment on three other videos and explain your choice; Say whether you'd like to try 'The cookin''	
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Interdisciplinary lesson

Name of activity	Procedure	Duration
The presentation of the work	Students present their videos. After all the presentations, students give their feedback on www.mentimeter.com .	45-60 min

Assessment

The final activity is a form of an assessment: students present their videos, whereas English language skills are assessed by an English Language teacher (appropriate vocabulary, correct grammar, fluency) and the quality of the video edited is assessed by an ICT teacher (by the given criteria:

1. Add a title sequence
2. Add background music
3. Add the text of a recipe
4. Add your video to the Padlet wall
5. Comment on three other videos and explain your choice; Say whether you'd like to try 'The cookin'').

Student feedback

After the final class students give their feedback on www.mentimeter.com They answer the following questions: The lessons were..., Were the activities interesting?, How do you feel now?

Teachers' remarks

Add here your comments and evaluation **AFTER** the implementation of this lesson, if any.

About Scientix

Scientix, the community for Science Education in Europe, promotes and supports a Europe-wide collaboration among STEM (Science, Technology, Engineering and Mathematics) teachers, education researchers, policymakers and other STEM education professionals. If you need more information, check the [Scientix portal](#), or contact either the Scientix National Contact Point or Scientix Ambassadors [in your country](#).

Annex(es)

Add here any annex(es) for the Learning Scenario, if needed.