

## SCIENTIX LESSON PLAN

**Title** How to be a sustainable cook

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## Subject

List all the subjects that this lesson plan is intended for. If this is an interdisciplinary lesson, list multiple subjects.

## Food Science - English

## Aim of the lesson

Describe in 1-2 sentences what you would like to achieve with your students by the end of the lesson.

This is a Food Science and English interdisciplinary (CLIL) lesson plan.

The focus of the activity is to raise awareness on food footprint to make students understand how choosing a sustainable meal with a low environmental impact and with a correct nutritional value can contribute to meet the needs of the present generations without compromising the well-being of future generations and can help not only save the planet but also life on it.

## Age of students

**17 - 18**

**4th form of the Culinary Art course in a vocational school**

## Time

Preparation time: 3 hours

Teaching time: 12 hours

## Teaching material

### Online:

List here all the links of online tools and support documents that you will use during the lesson.

<https://www.barillacfn.com/m/publications/doublepyramid2016-more-sustainable-future-depends-on-us.pdf>

<https://www.footprintcalculator.org> carbon footprint water footprint ecological footprint

### Offline:

List here all the offline tools, such as: paper, glue, etc.

kitchen tools and utensils

foods

pens

flipcharts

## 21<sup>st</sup> century skills

Add here how the lesson plan corresponds to 21<sup>st</sup> century skills. To find out more: <http://www.p21.org/our-work/p21-framework>.

### **21<sup>st</sup> century skills:**

Communication - students will share information about food footprints and discuss it

Collaboration - students will work in groups to analyse present issues related to food footprints.

Moreover the class may be involved in a global project about SDGs (Be the change. Take the challenge.) and may collaborate in international groups as well.

Critical Thinking and Problem Solving - students will think about how to best calculate the footprints of a meal and will find solutions to determine them.

Creativity and Innovation - students will create healthy sustainable lunch menus starting from traditional local recipes which will be innovated to make them correspond to current needs.

### **21st century interdisciplinary themes woven into key subjects** (in this case Food Science and English)

The module is interdisciplinary because it is a CLIL one.

- Sustainable Development Goals UN's Agenda 2030 and specifically Goal 2 Zero Hunger – Goal 3 Good-health and Well-being – Goal 12 Responsible production and consumption - Goal 13 Climate Action – Goal 14 Life below water – Goal 15 Life on land
- Global Awareness – students will learn how individual behaviours impact on the environment, health and well-being, and conservation of resources globally
- Economic Literacy - students will learn the economic consequences of non-sustainable consumer behaviour
- Language Literacy - students will improve their language skills in L2 because English will be the medium through which the subject content will be taught
- Civic Literacy – students will become aware that everyone is responsible for changing habits that are not sustainable and that the efforts of every single individual counts in reaching the set goals
- Health Literacy – students will gain awareness on how to maintain a healthy diet for a better balanced and sustainable lifestyle
- Environmental Literacy - students will understand that it is everyone's duty to protect and preserve the Earth's natural resources to save our planet from destruction. They will learn that we must respect what we have because "We don't have plan B because there is no planet B".

### **Lesson Plan**

*Describe here in detail all the activities during the lesson and the time they require. Remember, that your lesson plan needs to correspond to real-world problems in STEM education.*

#### **Reference:**

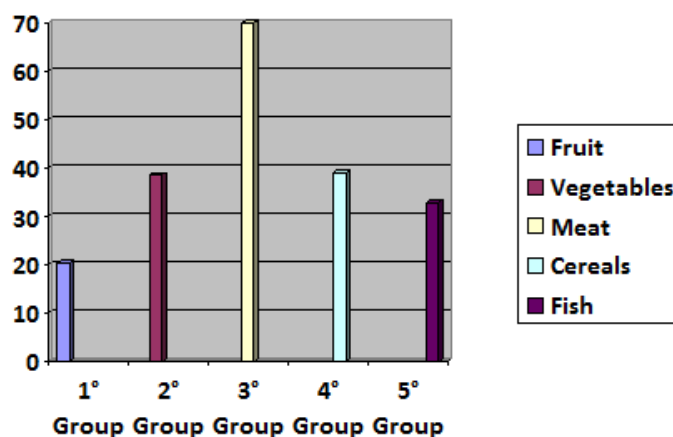
<https://www.barillacfn.com/m/publications/doublepyramid2016-more-sustainable-future-depends-on-us.pdf>

<b>Name of activity</b>	<b>Procedure</b>	<b>Time</b>
The food chain and the environment p. 39, 40	<p>The students are asked to calculate their environmental impact using <a href="https://www.footprintcalculator.org">https://www.footprintcalculator.org</a></p> <p><b>Brainstorming:</b></p> <p>a collaborative mind map <a href="https://coggle.it/">https://coggle.it/</a> : What comes to your mind when you think about a food chain?</p> <p>Then the students divided into 5 groups of four SS will have to</p>	1h

select a food and analyze its chain and how it impacts on the environment searching the Net. New vocabulary is noted down on a file to create a glossary related to the module.

They will have to make a histogram graph to highlight the results.

e.g.:



The double pyramid

The indicators used in the double pyramid and the environmental impact of the food chain

p. 62, 63

p. 42-45

p. 56, 57

The groups watch a video:

<https://www.youtube.com/watch?v=yIRoHMbrqU>

After that a game of the double pyramid is given.

They have to solve it correctly putting the food at the correct level of the two pyramids.

<http://www.educazionedigitale.it/noiilciboilpianeta/gli-strumenti/#ancora-openmind>

The double pyramid is then shown and the

students discuss their results and possible mistakes.

Then the three food footprint graphs (water, carbon and ecological footprint) are handed out and they are asked to analyze the data collected about the chosen foods and to find the category they belong to. In so doing they will infer their impact on the environment.

1h

<p><i>What sustainable diets are?</i></p> <p><i>p. 78,79, 81-83</i></p>	<p><i>A text about the different types of diet is suggested. The students will read it and paraphrase it. They will learn new vocabulary and also use the language actively.</i></p> <p><i>Each group has then to choose one which must be different from the other groups and to fill in a grid to highlight its pros and cons from a nutritional and an environmental point of view. The groups will have then to make a presentation about each diet. The presentations will be peer-assessed.</i></p> <p><b>Formative assessment</b></p>	<p>3h</p>
<p><i>The economic pyramid /</i></p> <p><i>Ten tips for spending little and eating well</i></p> <p><i>p. 98, 99</i></p> <p><i>p. 104, 105</i></p>	<p><i>After analysing a text about the ten tips for spending little and eating well, they will have to carry out a practical task. Some menus are handed out and the groups are asked to improve them making them cheap but healthy. They will also have to show that they are able to suggest how to reduce, recycle or reuse.</i></p>	<p>1h</p>
<p><i>What institution can do, what you can do</i></p> <p><i>p. 126, 127</i></p>	<p><i>A jigsaw about What institution can do, what they can do is given. The groups have to rebuild the text. The results are compared and they have to think about what is still to be done. A list of solutions is made and posted on the website of the project (if the class has been involved).</i></p>	<p>1h</p>
<p><i>Analysing a meal: lunch</i></p>	<p><i>During practical activities in the kitchen lab, the students usually prepare a traditional local lunch. For this activity, after making the lunch each group will have to calculate the caloric intake of a course. The results are shared.</i></p>	<p>3h</p>
<p><i>Healthy sustainable lunch menus</i></p>	<p><i>Each group will have to plan a sustainable lunch menu starting from traditional local recipes which will be innovated to make them correspond to current needs that is the menu will have to be healthy and sustainable.</i></p> <p><b>Summative assessment</b></p> <p><i>As a final test each group will have to analyze the results.</i></p>	<p>2h</p>

## Assessment

Describe here the assessment method of the lesson, if any. For example, if you plan on assessing your students with a quiz, include here questions and answer options with color-coding the correct answers.

### Formative assessment

#### Debate

<https://anh-academy.org/sustainable-diets-game-diet-dimensions> 1h

### Self-assessment

Name:

Class:

date:

Self-Assessment Read and tick where appropriate	YES	NOT YET	NOT SURE
I can recognize spoken and written words and expressions related to the content of the module			
I can report information from this module both orally and in writing			
I can speak about different aspects of this module providing my own opinion or views			
I can speak about some of the relevant themes in the module			
I can plan a healthy sustainable meal			
I can work in groups including all group members equally, listening to others and finishing tasks on time			

**Peer-assessment:**

	<b>10 / 9</b>	<b>8 / 7</b>	<b>6 / 5</b>	<b>4 / 3</b>
<b>OVERALL APPEARANCE</b>	<ul style="list-style-type: none"> <li>- theme consistent</li> <li>- generally inviting</li> <li>-high degree of creativity</li> </ul>	<ul style="list-style-type: none"> <li>- theme consistent</li> <li>- generally good</li> <li>- creative</li> </ul>	<ul style="list-style-type: none"> <li>- theme inconsistent</li> <li>- generally adequate</li> <li>- somewhat creative</li> </ul>	<ul style="list-style-type: none"> <li>- no theme evident</li> <li>- poorly done</li> <li>- shows little creativity</li> </ul>
<b>CONTENT</b>	<ul style="list-style-type: none"> <li>- all components are completed as assigned</li> <li>- excellent variety of topics</li> <li>- an illustration included with each component</li> <li>- well written</li> </ul>	<ul style="list-style-type: none"> <li>- most components completed as assigned</li> <li>- good variety of topics</li> <li>- most components are illustrated.</li> <li>- well written</li> <li>- fewer than minimum of five components.</li> </ul>	<ul style="list-style-type: none"> <li>- did not include one of the assigned components</li> <li>- adequate variety of topics</li> <li>- most components are illustrated</li> <li>- writing sufficiently adequate</li> </ul>	<ul style="list-style-type: none"> <li>- some components completed as assigned</li> <li>- some illustrations</li> <li>- writing not adequate</li> </ul>
<b>ILLUSTRATIONS</b>	<ul style="list-style-type: none"> <li>- all graphics are connected to theme</li> <li>- excellent colour and composition.</li> </ul>	<ul style="list-style-type: none"> <li>- most graphics connected to theme</li> <li>- good colour and composition</li> </ul>	<ul style="list-style-type: none"> <li>- artwork not always connected to theme</li> <li>- lacks originality</li> <li>- some colour and graphics elements used</li> </ul>	<ul style="list-style-type: none"> <li>- seldom connected to theme</li> <li>- few or no graphic elements</li> </ul>

<b>PRESENTATION</b>	<ul style="list-style-type: none"> <li>- use of writing process evident</li> <li>- correct spelling</li> <li>- correct grammar</li> <li>- correct sentence, paragraph and essay structure</li> </ul>	<ul style="list-style-type: none"> <li>- use of writing process evident</li> <li>- minor spelling errors</li> <li>- minor grammatical errors</li> <li>- minor errors in construction of sentences, paragraphs and essays</li> </ul>	<ul style="list-style-type: none"> <li>- careless use of writing process</li> <li>- minor spelling errors</li> <li>- minor grammatical errors</li> <li>- written work lacks organization</li> </ul>	<ul style="list-style-type: none"> <li>- first draft is only draft</li> <li>- major spelling errors</li> <li>- major grammatical errors</li> <li>- lacks organization, disjoint, and lacks unity</li> </ul>
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## Group work assessment

	<b>Criteria</b>				<b>Points</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	
<b>Level of engagement in class</b>	student actively contributes to the lessons by offering ideas and asking questions frequently	student actively contributes to class by sometimes offering ideas and asking questions	student seldom contributes to class by offering ideas and asking questions	student never contributes to class by offering ideas and asking questions	
<b>Listening, questioning, discussing</b>	student listens, discusses and asks questions and guides the group in problem-solving activities	student listens, discusses and asks questions	student doesn't always listen with respect and monopolises discussions	student doesn't listen with respect, argues with mates and doesn't respect their ideas	
<b>Behaviour</b>	student never has disruptive behaviour during discussions and group activities	student rarely has disruptive behaviour during discussions and group activities	student sometimes has disruptive behaviour during discussions and group activities	student always has disruptive behaviour during discussions and group activities	
<b>Preparation</b>	student always does homework, studies and has the required material	student usually does homework, studies and has the required material	student rarely does homework, studies and has the required material	student never does homework, studies and has the required material	
<b>Problem-solving</b>	student actively looks for and finds or suggests solutions to problems	student usually improves solutions suggested by others	student is willing to try solutions suggested by others	student neither tries to solve problems nor to help others solve them	
<b>Group / partner teamwork</b>	student works to complete all group goals, has	student usually helps complete all group goals, has a	student occasionally helps complete all group	student doesn't work well with others, shows no interest in	



	a positive attitude towards the tasks and work of others and does all duties related to the assigned role	positive attitude towards the tasks and work of others and does nearly all duties related to the assigned role	goals, sometimes has a negative attitude towards the tasks and work of others and does some of the duties related to the assigned role	completing group goals, has a negative attitude towards the tasks and work of others and doesn't do the duties related to the assigned role	
				<b>Total</b>	

### Summative assessment

Each group will have to plan a sustainable lunch menu starting from traditional local recipes which will be innovated to make them correspond to current needs that is the menu will have to be healthy and sustainable.

As a final test each group will have to analyze the results.

### Student feedback

Add here the method with which your students will be able to give you feedback and discuss the lesson.

#### CLIL MODULE

	NOT AT ALL	NOT MUCH	SUFFICIENTLY	ENOUGH	A LOT
<b>1. Do you like the module?</b>					
<b>2. Can you understand the texts in English?</b>					
<b>3. Is the topic explained clearly?</b>					
<b>4. Do the images help you understand?</b>					
<b>5. Do you like the activities?</b>					
<b>6. Do you have time to ask questions?</b>					
<b>7. Do you have enough time to answer questions?</b>					
<b>8. Are you given examples to help you use the English language?</b>					

<b>9. Are you afraid of making mistakes when you speak English?</b>					
<b>10. Are you corrected when you speak English?</b>					
<b>11. When you speak English are you given enough time to self-correct your mistakes?</b>					
<b>12. Do you like working in groups?</b>					
<b>13. Do you like being assessed by your classmates?</b>					

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