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2021-1-ES01-KA220-SCH-000027835



Educational Methodology for responsible food consumers

GOODFOOD FINAL CONFERENCE

Rafina, 17/06/2024

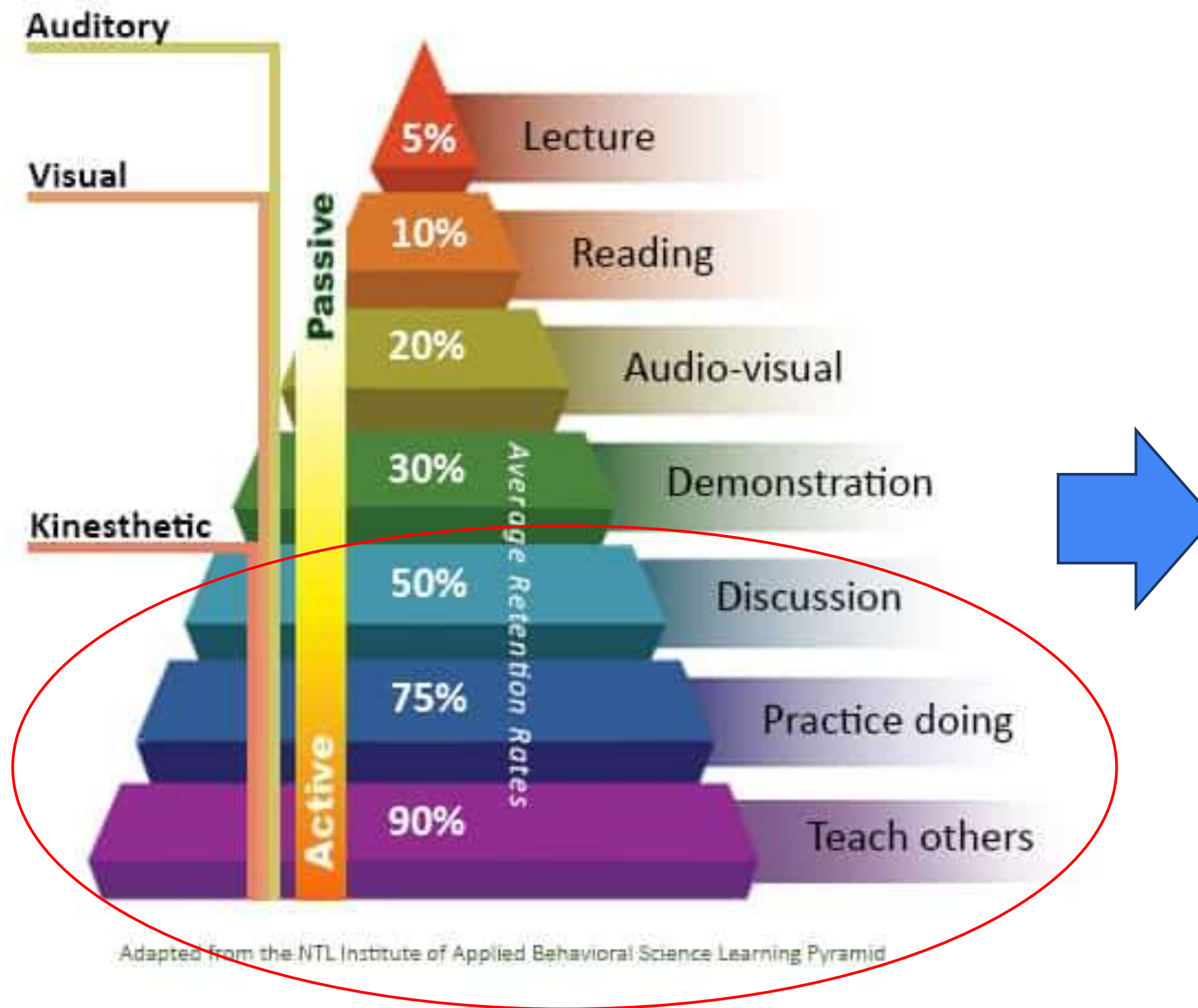
Francesca Ugolini - Institute of Bioeconomy - CNR





Methodological approaches

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Inquiry Based Learning
Apprendimento Basato sull'Indagine

Project Based Learning
Apprendimento Basato su Progetto

Integrated STEAM approach
Approccio delle STEAM integrate

https://goodfoodeplus.cebas.csic.es/wp-content/uploads/2023/05/GOODFOOD_Methodology_23052023-Final.pdf





GOODFOOD teachers' organisation



1) Teachers of all school subject (STEAM) are informed about GOODFOOD



2) Those willing to apply an integrated STEAM approach form the “Focus group”

- Motivation and interest
- Collaborative spirit
- Time



Organization of the development of GOODFOOD with the students:

The Focus Groups meets regularly

- to set learning objectives: contents that match school curriculum, competences, skills
 - to organise jointly activities suggested by the Learning Units
- to coordinate the development and take decisions regarding any issues may raise





5 STEPS of the Methodology in class

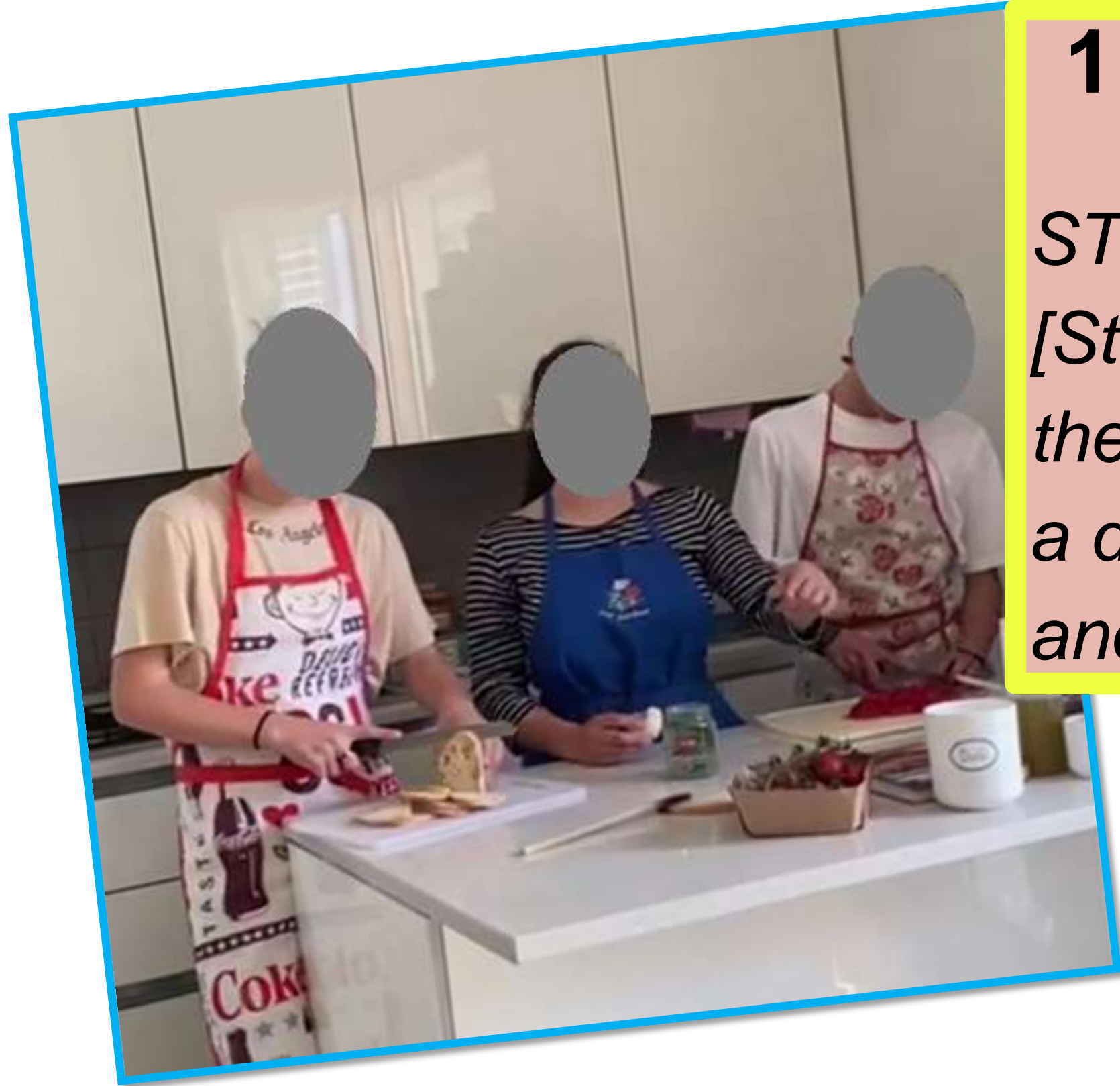


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1. Orientation:

*STUDENTS COOKING EXPERIENCE
[Students are invited to think of a dish
they would like to eat with friends, and of
a dish grandparents like to cook/offer
and then, they cook it!]*





5 STEPS of the Methodology in class

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2. Conceptualisation:

FORMULATION OF QUESTIONS OR HYPOTHESIS

[Which dish is healthier and more sustainable?]

Students make own guess and formulate all questions that may answer the main question and verify own hypothesis]

Examples:

- What and how much fats are contained in your dish?*
- Where do the ingredients come from?*
- Do you know how they have been produced?*
- What is the environmental impact of the dish?*

Valori medi	per 100 g di prodotto	per porzione (31,25 g di prodotto)	%AR* per porzione (31,25 g di prodotto)
Energia	1820 kJ / 432 kcal	569 kJ / 135 kcal	7 %
Grassi	11 g	3,3 g	5 %
di cui acidi grassi saturi	5,0 g	1,6 g	8 %
Carboidrati	72 g	23 g	9 %
di cui zuccheri	2,3 g	0,7 g	1 %
Fibre	2,8 g	0,9 g	-
Proteine	9,8 g	3,1 g	6 %
Sale	1,9 g	0,59 g	10 %

*AR=Assunzioni di Riferimento di un adulto medio (8400 kJ / 2000 kcal)
Questa confezione contiene 16 porzioni da 31,25 g.

CONSERVAZIONE
Conservare in luogo fresco e asciutto, lontano da fonti di luce e calore.

500g e (31,25g x 16)

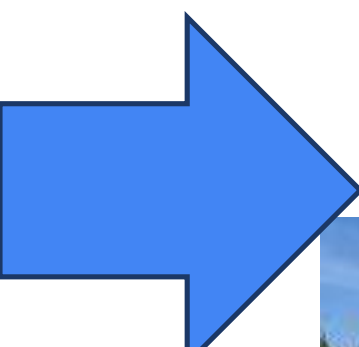
	Per 100 g	Per biscotto (ca. 11 g)	%AR* per biscotto
ENERGIA	2012 kJ 480 kcal	221 kJ 53 kcal	3% 3%
GRASSI	21 g	2,3 g	3%
di cui acidi grassi saturi	9,0 g	1,0 g	5%
CARBOIDRATI	64 g	7,0 g	3%
di cui zuccheri	24 g	2,6 g	3%
FIBRE	3,5 g	<0,5 g	-
PROTEINE	7,0 g	0,8 g	2%
SALE	0,63 g	0,07 g	1%

*AR = assunzioni di riferimento di un adulto medio (8400 kJ / 2000 kcal).
La confezione contiene circa 64 biscotti.





5 STEPS of the Methodology in class



https://goodfoodeplus.cebas.csic.es/wp-content/uploads/2023/11/Theme-1-FOOD.CARBON-FOOTPRINT_with.worksheet.pdf



3. Investigations:

INVESTIGATION ACTIVITIES THROUGH THE LEARNING UNITS

[Guided by the teachers, students carry out the Learning Units proposed by GOODFOOD. LU help them to answer the questions / hypothesis formulated in the conceptualisation phase].



Food Carbon Footprint

Theme: Sustainable Food Production

Total duration: 7 hours

School subjects involved (suggestion): Science, Technology, Maths, Civic education, other.

Equipment/materials:

- Computer and Internet connection
- List of ingredients of the recipe
- Mobile and QR code scanner

Worksheets: 1

Digital tools: Apps for Carbon Footprint calculation

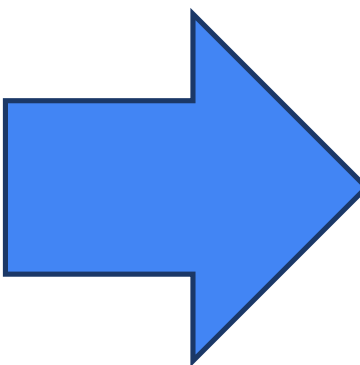
Brief description

This Learning Unit aims to assess the impact of any food on the environment using calculators to measure the carbon dioxide emissions produced during the production of the food and its ingredients.

The carbon footprint is the total amount of greenhouse gas (including carbon dioxide and methane expressed as CO2 equivalent) that is generated to produce a certain product.

The pollution is generated by the production methods (e.g., type of agricultural product, use of external inputs in agriculture, machineries), the transportation (e.g., distance and fuel need per mass of product) and the transformation of the product. The Carbon Footprint calculators are based on database in which the amount of CO2 per kilo of product is usually indicative as it may vary substantially with the typology of production and all following processes.

However, despite many limitations, the Carbon Footprint is a way to immediately be aware about the environmental impact of food and reflect on how the





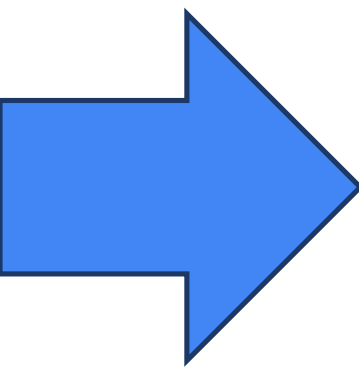
5 STEPS of the Methodology in class


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4. Conclusions:

ALL THE RESULTS ARE PUT TOGETHER

[The results of all the investigation activities (Learning Units) are brought together to verify the initial hypothesis and answer the main question.]



I RISULTATI

Per porzione Per 100 gr


Calorie KJ	960.00	Calorie kcal	229.00	Cholesterol	11.00g
10% ARI*		10% ARI*		10% ARI*	
Zuccheri	0.20g	Fibre	2.90g	Proteine	2.90g
2% ARI*		2% ARI*		2% ARI*	

Valori medi per 100g

Energia	2212 kJ / 531 kcal
Grassi	33 g
di cui acidi grassi saturi	3.7 g
Carboidrati	50 g
di cui zuccheri	< 0.5 g
Fibre	4.4 g
Proteine	6.2 g

11% (for fries)


30% (for chips)


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A Balanced Diet

By Martina, Ismael Martínez, Hugo Costa and Lorena.

HARVARD PLATE



PERCENTAGES

- Vegetables 30%
- Fruits 20%
- Carbohydrates 25%
- Healthy protein 25%

WHOLE VS PROCESSED

Benefits of whole food:

- Decreases fats absorption.
- Brings a lot of energy.
- High fiber content.

Disadvantages of processed food:

- Risk of metabolic disorders.
- Cerebrovascular diseases.
- Coronary diseases.

COMMON ILLNESSES

Obesity:

- Excess of body fat.

Diabetes:

- High glucose level.

Cardiovascular diseases:

- Problems with the heart and blood vessels.

IMPORTANCE OF A VARIED DIET

-We must be able to provide our body with all those nutrients it needs: vitamins, proteins, carbohydrates, fats, iron, magnesium, etc.





5 STEPS of the Methodology in class

5. Discussion:

STUDENTS DISCUSS FINDINGS and further...

[they have to

- think about
“how the dish can become healthier and more sustainable” (=> alternative ingredients, processes, supply chains without impairing the edonic aspect)

- Spread the GOODFOOD message]

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**Cookbook of
GOODFOOD healthy
and sustainable recipes**



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'GOODFOOD: EDUCATION TO BECOME RESPONSIBLE FOOD CONSUMERS'

ANNOUNCEMENT: European "Video-Slogan" competition:

"SUSTAINABLE & HEALTHY FOOD FOR A BETTER FUTURE"





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GOODFOOD WEBSITE

<https://goodfoodeplus.cebas.csic.es/>

PR1: Learning Methodology

Based on the results from the surveys (students' and teachers' needs), the GOODFOOD partners have developed a Learning Methodology that describes and shows to the teachers the step-by-step sequence of actions to implement a GOODFOOD project, based on innovative educational approaches: integrated **STEAM** teaching, **inquiry-based** learning and **intergenerational** learning.

Learning Methodology

Learning Methodology Roadmap

https://goodfoodeplus.cebas.csic.es/wp-content/uploads/2023/05/GOODFOOD_Methodology_23052023-Final.pdf

PR2: Learning Units

A number of different **Learning Units** have been developed within the GOODFOOD project. These units will guide the teachers and students in the implementation of activities (laboratory experiments, outdoors investigations, search websites, etc) as well as to the achievement of the objectives in relationship with the main project specific themes:

1. **Sustainable Food Production.**
2. **Sustainable Food Supply and Food Selection.**
3. **Nutritious and Healthy Food Consumption.**
4. **Sustainable Food Waste Management.**

PR2: Digital Tools

In this section you will find the links and description of a selection of digital tools i.e. websites, Apps, Scientific information, etc that will help you to work on the different learning units and develop your school projects.

Project outcome:

In the following link you can access a library of digital tools selected by the GOODFOOD project:

Digital tools useful for the Learning Units



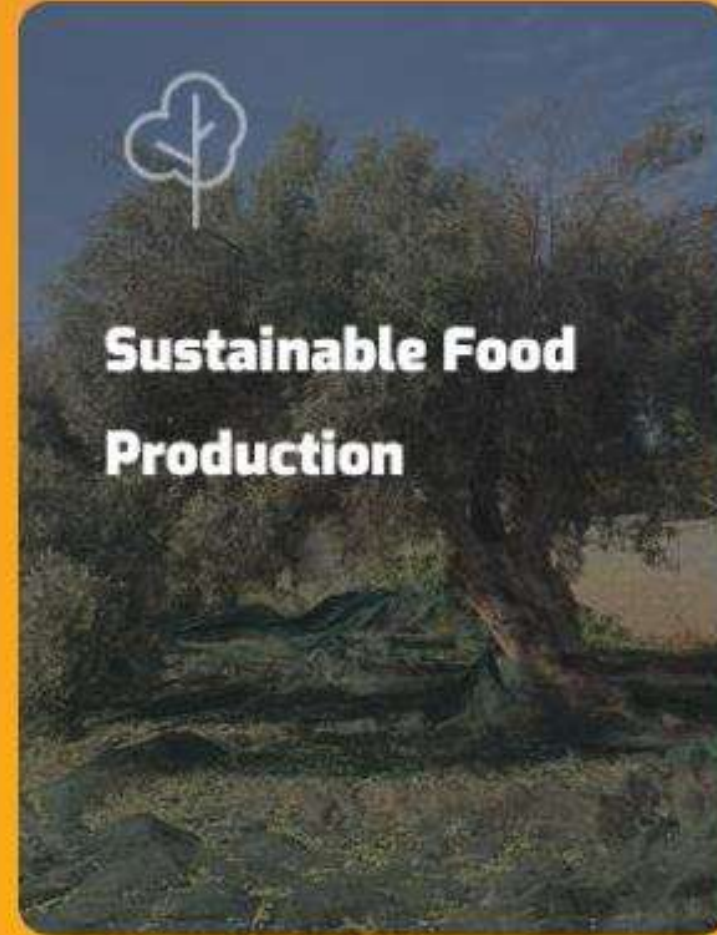
GOODFOOD Materials

Themes & Learning units



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**Sustainable Food
Production**

- Sustainable labels
- Carbon Footprint
- Sustainable Fishing



**Nutritious Food
Consumption**

- The fat component of a diet
- How much salt do we need?
- Knowledge about bioactive compounds



**Healthy Food
Consumption**



**Sustainable Food
Supply and Food
Selection**

- Short Food Supply Chains
- Dietary Choices and habits of adolescents



**Sustainable Food
Waste
Management**

- Food packaging
- How to reuse leftover food



Learning units



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Colour coding according to the theme:

- Sustainable Food Production
- Sustainable Food Supply and Selection
- Nutritious and Healthy Food Consumption
- Sustainable Food Waste Management



Learning units structure



First page offers basic information, such as:

- Theme
- Title of the Topic addressed and short description
- Total duration of the Learning Unit
- School subjects involved, e.g. Chemistry, Biology, Economics, Math, IT, Literature, Geography, Civic Education, Sociology
- Equipment / materials needed
- Worksheets (links)
- Digital tools (links)

Learning units structure



Learning Objectives:

- **Students will learn about...**
- **Students will be in a position to...**

Steps of the Learning Unit with Duration, School subjects involved, Location of the activities, method of work, equipment/materials:

- **Orientation: Description, resources (videos, presentations)**
- **Conceptualisation: Description**
- **Investigation:**
 - **Planning the investigation activities**
 - **Performing the investigation activities (e.g. internet research, questionnaire surveys, experiments, mapping local case studies, study visits, interviews of stakeholders, calculations of carbon footprint, etc.)**
 - **Analysis of findings**
- **Conclusions: Description of the activities**
- **Discussion: Description**

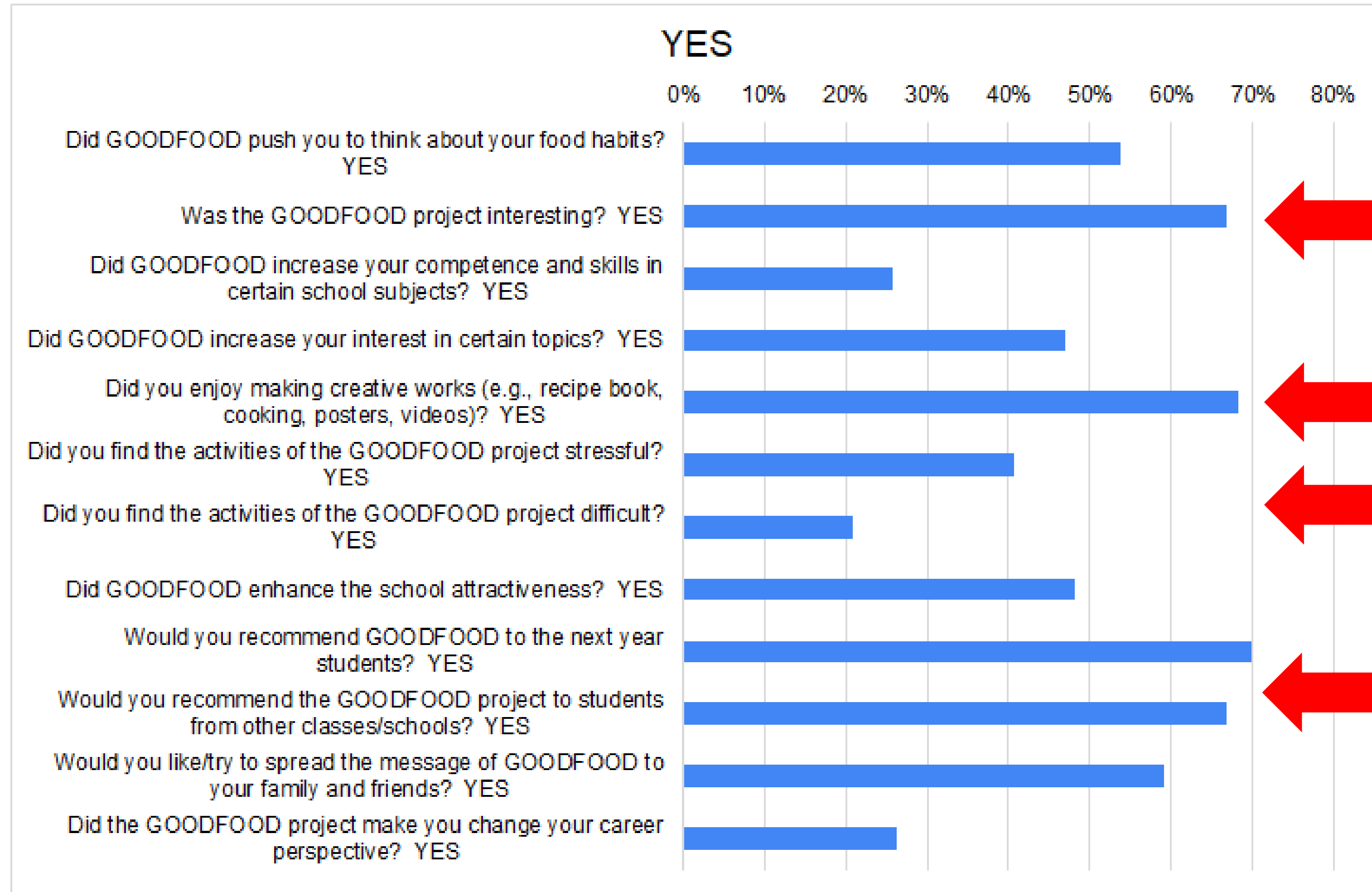
Links to Resources for the Learning Unit

Efficacy



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Visit our project website:
<https://goodfoodeplus.cebas.csic.es/>

Thank you!



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