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2021-1-ES01-KA220-SCH-000027835



Pilot testing in the IES Monte Miravete High School, Murcia, Spain

2024/25

Alfonso Guillén Ayala and Paula Ruiz-Erán
Lorca





Subjects: Biology, Maths, Physics and Chemistry, PE, English, Spanish, History and Geography, Social and personal entrepreneurialship.

Teachers: 15

Students: 56 students (2 groups of year 3 CSE) + rest of the school in some activities and dissemination.

Final goal: Goodfood Recipes

The team





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GOODFOOD Units implemented

Sustainable Food Production	Sustainable Food Supply and Food Selection		Nutritious and Healthy Food Consumption	Sustainable food waste management
	Sustainable Food Supply	Sustainable Food Choices		
Environmental footprint of food	Short food supply chains	Food choices and habits of adolescents	Nutrients and calories	Sustainable food management-packaging
Sustainable fishing			Improving our knowledge about the concept of 'antioxidants'	
Sustainable Farming Methods			The fat component of the diet	
			How much salt do we eat?	



**Environmental
footprint of food**

Subjects: Maths.
Methodology: OCICD.

**Sustainable Food
Production**

**1st term
Oct-Dec**

**Sustainable
fishing**

Orientation and conceptualization: Geography and
History subject.

Investigation: English and Spanish subjects.

Conclusions and discussion: English subject.

*Day trip



Activities

Sustainable Food Production

Environmental footprint of food

Ingrediente	Gramos del ingrediente en la receta.	Equivalente de CO2 por gramo	Equivalente de CO2 en la receta Multiplicar columna 2 por columna 3	CO2 correspondiente emitido por kilómetros recorridos
patata	400gr	1,273gCO ₂ /g	509,2gCo ₂ e	558,7 km en coche 683,2 km en avion 2955,5 km en tren
cebolla	180gr	1,051gCO ₂ /g	189,216gCo ₂ e	116,5 km en coche

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				142,4 km en avion 616,1 km en tren
pimiento	500gr	2,019gCO ₂ /g	1009,6gCo ₂ e	279,6 km en coche 341,6 km en avion 1479,3km en tren
ajo	10gr	0,452gCO ₂ /g	4,523gCo ₂ e	1,3 km en coche 1,5 km en avion 6,6 km en tren
aceite	125ml	2.391gCO ₂ /g	298,929gCo ₂ e	82,8 km en coche 101, 2 km en avion 438 km en tren
sal	5,5gr	1,133gCO ₂ /g	5,663gCo ₂ e	1,9 km en coche 2,3 km en avion 10 km en tren

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Huella de carbono

Magra con tomate

Ingredientes de la receta:

- 500 g de magra de cerdo:
- Un par de pimientos verdes.
- Una cebolleta.
- Tomate triturado.
- 150 ml de vino tinto.
- Azúcar necesario.
- Aceite de oliva virgen extra.
- Pimienta molida.
- Sal.



Equivalente de CO2 en la receta:

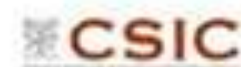
El equivalente de CO2 si comiéramos magra con tomate una vez por semana durante un año sería de 6143 CO2e

- Magra: 3314 gCO2e
- Pimientos: 509 gCO2e
- Cebolleta: 306 gCO2e
- Tomate triturado: 1743 gCO2e
- Vino tinto: 205 gCO2e
- Azúcar: 3 gCO2e
- Aceite de oliva virgen extra: 51 gCO2e
- Pimienta: 6 gCO2e
- Sal: 6 gCO2e

CO2 correspondiente emitido por kilómetros recorridos:

- 500 g de magra de cerdo: 917,9 km
- Un par de pimientos verdes: 141,1 km
- Una cebolleta: 43,7 km
- Tomate triturado: 482,8 km
- 150 ml de vino tinto: 56,9 km
- Azúcar necesario: 0,9 km
- Aceite de oliva virgen extra: 14 km
- Pimienta molida: 1,6 km
- Sal: 1,6 km

El total en coche sería de 1660.5 km



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BUREK



INGREDIENTES

500g de carne picada (de cordero) 1 pimiento verde 1 cebolla
8 láminas de pasta brick/masa filo (se puede conseguir en carnicerías árabes) Perejil
Sal Pimienta blanca o negra Queso fruncido en porciones
Aceitunas Pimentón dulce o paprika



HUELLA DE CARBONO

La huella de carbono total es 2367gCO2e, eso es equivalente a 660,4 kilómetros recorridos en coche.



Nuestra receta genera un impacto mayoritariamente positivo.



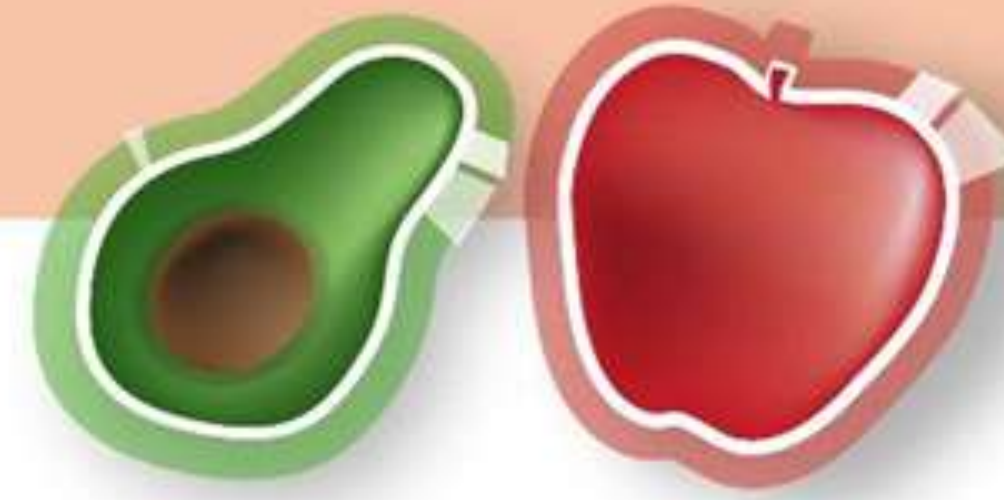
RECOMENDACIONES

Para que esta receta sea mas saludable podemos sustituir la masa filo por una masa integral, tambien podemos sustituir la carne picada de cordero por legumbres, pescado y cereales integrales, ya que son mas sostenibles que la carne picada



Activities

Sustainable Food Production Sustainable fishing



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GOODFOOD Co-funded by the European Union
Education to become responsible food consumers


infographic

ACQUACULTURE AND FISHING

Andrea Carrascosa Pérez
Marta Gómez Sánchez
Nerea Manzanares García
Irene Belando Nicolás
Sofía Betancur Alarcón


WHEN DID ACQUACULTURE BEGIN? AND WHY?

It dates back to two thousand years BC. Initially, fish for breeding were caught naturally and fattened in ponds or lakes. It started because the conservation, study and protection of the species is intended.



WHICH ARE THE STEPS AND PROCEDURES OF ACQUACULTURE?

1. Find a good place to build a cage.
2. Permission is requested from the administration to establish the cage since if it is not done it can have a great environmental impact.
3. If permission is given, it is built.
4. The fish are raised and cared for.



GOODFOOD at a fish farm: learning about fishing techniques and sustainability.

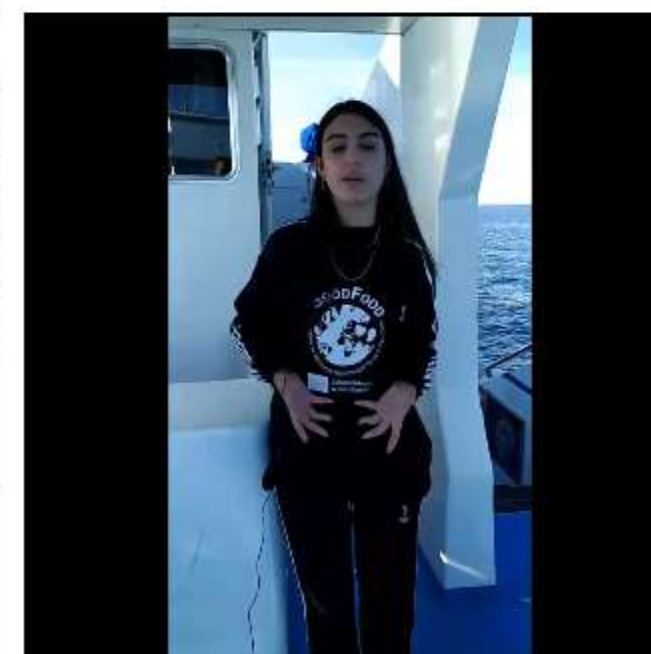
A fruitful day for the students of IES Monte Miravete visiting the fish farms located on the Mediterranean southeast coast of Murcia (Spain). The students had the opportunity to learn about the breeding of various species of fish (tuna, sea bream, brass) and the different fishing methods used. They also enjoyed a guided visit around the local fish market where they learnt about the fishing methods and the variety of fish that can be caught from the Mediterranean as well as from the Mar Menor, the largest Spanish lagoon with numerous environmental values and that is currently suffering the consequences of the environmental agricultural pollution. The first video summarizes the activity.



In the second video, you can listen to the young students Malak, Douha and Umaima interviewing a fisherman and hearing about different fishing methods used in the Mediterranean sea and in the Mar Menor.



Listen also to the testimony of some of the young students taking part in the activity!!!



ARE THERE ANY PROBLEMS WITH THIS PRACTICE?

- 1 The area where the cage is established is contaminated.
- 2 To get food it is a fishing that destroys everything.
- 3 Diseases are transmitted.

WHAT SPECIES ARE BRED IN THE REGION OF MURCIA?

Sea bream, sea bass, corvina and tuna are bred in the Region of Murcia. They feed on feed made from fish caught in the sea and tuna with alive fish.



FISHING FACTS IN THE REGION OF MURCIA

WHICH TYPE OF FISH DO THEY FISH?

- Bass, sea bream, blue crabs, eels, shrimps, croaker, sole, mullet are caught.



WHICH TYPE OF FISH DO THEY FISH WHICH TYPE OF FISHING BOATS AND TECHNIQUES DO THEY USE?

- Depending on the fishing season, different types are used, it can be longlines, charamites, scales for eels and bream, hair nets...
- The boats are usually small or medium-sized and their crew usually consists of 1 skipper, 1 engineer and 2 or 3 sailors.

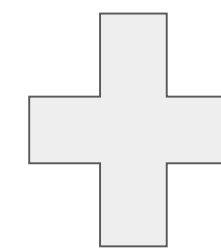
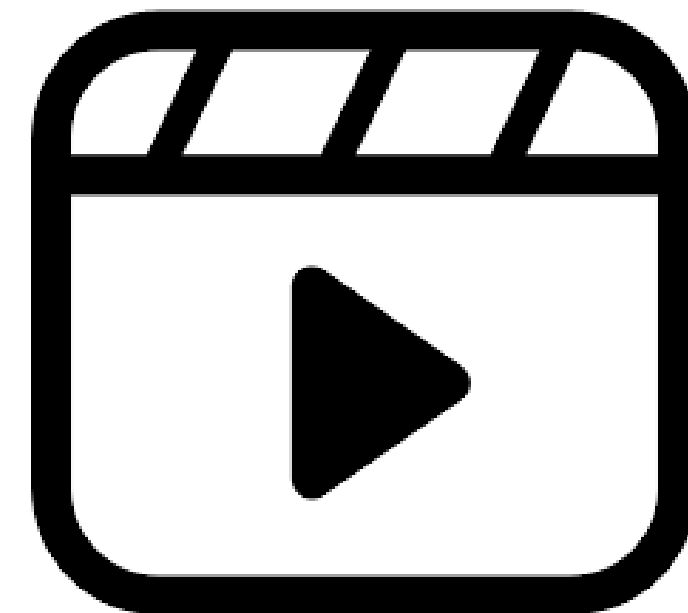
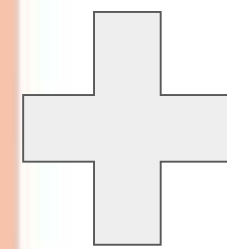



**Sustainable Food
Supply**

**Short food supply
chains**

Subject: Geography and history
Methodology: OCICD.


**2nd term
Jan-Mar**



5. DISTRIBUCIÓN Y TRANSPORTE


Medios de transporte

- Camiones frigoríficos: Alimentos frescos y naturales.
- Camiones térmicos: Alimentos con necesidad de calor.

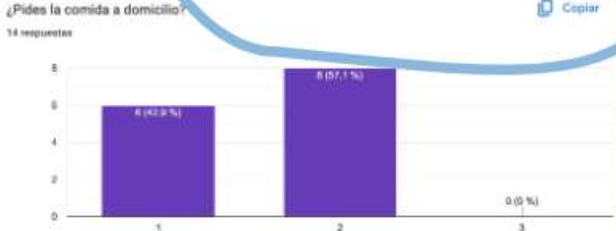


Comida a domicilio

Lo usan establecimientos que tienen este servicio y está obteniendo una mayor importancia.



¿Pides la comida a domicilio?
14 respuestas



Categoría	Porcentaje
1	8.00%
2	8.00%
3	0.00%



Nutritious and Healthy Food Consumption

1st and 2nd term
Oct-Mar

Nutrients and calories

Orientation and concept.: Biology and PE.
Investigation: Biology and PE.

*Day trip

Fat and salt

Orientation and concept.: English and Chemistry.
Investigation: Chemistry.
Conclusions and discussion: Chemistry.



Activities

Nutritious and Healthy Food Consumption

Nutrients and calories: Day trip to the University Miguel Hernández



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Activities

Nutritious and Healthy Food Consumption

Nutrients and calories: Extra activities

Calculating the BMI

IMC ALUMNADO 3º ESO

La OMS determina que el IMC para la población general debe estar entre 18.5 y 24.5

IMC MEDIO

¡Buenas noticias! El IMC medio de nuestro alumnado está de acuerdo a lo que marca la OMS.



VARIACIONES DEL IMC DEL ALUMNADO



POSIBLES PROBLEMAS DERIVADOS DE UN IMC ALTO

Estar en un IMC superior a 25 puede indicar sobrepeso u obesidad y puede suponer un mayor riesgo de sufrir ciertas enfermedades como hipertensión, diabetes o colesterol.



Healthy plate



- Tomate en conserva natural
- Cebolleta grande
- Huevo
- Atún en conserva
- Aceitunas negras de cuquillo
- Aceite de oliva
- Sal





Activities

Nutritious and Healthy Food Consumption

Salt and falt: Lab experiments



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Activities



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Nutritious and Healthy Food Consumption

Salt experiments





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**Sustainable Food
Waste Management**

**Sustainable food
waste
management**

Subject: Social and personal
entrepreneurialship.

*Day trips

**2nd term
Jan-Mar**



Final goal




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Recipe book: improving the initial recipes

ENSALADA MURCIANA



INGREDIENTS

- boiled eggs (1 or 2)
- natural preserved tomato (6 or 8)
- tuna (3 cans)
- onion (1 onion)
- olives (the ones you want)
- olive oil (the amount you want)
- salt (the amount you want)

INSTRUCTIONS





1. We take the tomato and cut it to put it on a plate.
2. We cut the onion into strips and add it to the plate.
3. We open the cans of tuna and add them with the other ingredients.
4. Once the eggs are cooked, cut them as you want and put them on the plate.
5. If you want to add olives, put the amount that you want on top of the rest of the ingredients.
6. Finally, add olive oil and salt.

Preparation time: 5 minutes

Serves: 4 people

Country of origin: Murcia, Spain

Authors: Nerea Manzanares García, Irene Belando Nicolás, Marta Gómez Sánchez, Sofía Betancur Alarcón and Andrea Carrascosa Pérez

Theme	Notes on the nutritional values and sustainability.
	This meal doesn't use appliances to make it, you only need to cook the eggs on a ceramic hob for 5 minutes, so it's fresh and doesn't use much electricity.
	We don't eat sugar and processed products but we eat proteins and vitamins that are necessary for us because proteins are good for growing and repairing tissues in our body and thanks to vitamins all processes are carried out correctly. Moreover, both, onion and tomato, have a lot of fiber, which is good for the intestinal flora.
	The eggs are from the chickens on a farm near our house so when we go to buy them we take a reusable egg container to take them to the house and the tomatoes are processed by my grandmother in a jar so there is no packaging, hence no contamination.
	The products aren't transported much because they go from the garden or farm to the store or our house, so there is practically no contamination during transportation. The tomatoes and eggs are homemade and we buy the rest of the ingredients in a town store with products from their farm and garden. Moreover, when we go to buy them, we go walking.
Acceptance	Acceptance: This recipe is typical from Murcia because everything can be obtained from the garden or farm and it's also prepared very quickly and it is delicious. It's also very healthy because you eat many types of food with different nutrients on the same plate and the cells can obtain everything they need to get energy and be able to carry out our daily activities.



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General difficulties

- Organization of the activities in the different departments
- Difficulty matching with the national curriculum
- Collaboration of the students
- Previous knowledge of students
- Students' research independence

Achievements among the students

- Awareness of healthy and sustainable food
- Improvement on their investigating and digital skills
- Better organization in group work
- New challenges: oral expositions in front of an audience
- Learning by doing: STEAM

