

# EDUCATIONAL PROGRAMME

## EAT:LIFE



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# INTRODUCTION

This guide is a compilation of educational proposals to address the issue of healthy and sustainable food with children and young people. It aims at providing tools and inspiration for educators in both formal and non-formal settings, for families and other agents in the educational world. It also aims at promoting the awareness and the commitment of the new generations in building a food system that guarantees the health of people and the planet.

The guide begins with a theoretical framework that sets out the main challenges of the food system in a rigorous and didactic way. It continues with 25 proposals for activities to be carried out in educational spaces, and ends with a specific proposal for summer activities.

Fundesplai has produced this guide as part of the EAT:LIFE project, which has received funding from the European Union's LIFE Programme, and aims to transform the eating and consumption patterns of citizens to make them fairer, healthier and more sustainable.

**Do you dare to take part in the change?**

# 1 – THEORETICAL FRAMEWORK

We are facing a **global planetary emergency**, with a food crisis aggravated by climate change, with huge problems of food waste, hunger, and undernutrition in some regions and overweight in others. Food is one of the main drivers of the climate emergency and a major cause of premature deaths globally. Current food systems are damaging us and our planet.

All studies by scientific organisations point in the same direction: **Food, Health and Climate are interlinked, central and essential to change the situation.**

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**We face the challenge of feeding a future world population of 10 billion people with a healthy diet, within planetary limits, in 2050. Time is running out. The next decade is decisive for limiting global warming to 1.5°C.**

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**Food is a key factor in moving towards sustainability, where many social and environmental challenges converge.** The need for better food choices, especially for children and young people, has never been more urgent.

**We need the next generation to make better food choices based on knowledge, understanding and commitment to sustainable, healthy and accessible food for all.**

We live in a critical decade. We are coursing through a global climate, social, and planetary health emergency that affects all living organisms and severely compromises present and future life. We need to act as quickly as possible to reverse or mitigate the effects of all these processes, and the food system is the lever for change.

We have sufficient evidence today that consumption patterns and the dominant, globalised, free-market food model **cause people's ill health and constitute one of the main threats to the planet's stability (climate change, loss of biodiversity, soil degradation, etc.). Besides, they are a central factor in inequalities and Human Rights violations.**

The need for people, especially children and young people, to have better food options has never been more urgent. We need to mobilise and change things now. We must make decisions based on knowledge, equity and commitment. And this is not only to proclaim that we must feed ourselves but also to ensure that food is sustainable, healthy and inclusive. We need a food system that guarantees the health of everyone and the sustainability of the planet.

## THE BIG CHALLENGES

### A- REDUCE FOOD WASTE

#### *REDUCE FOOD WASTE BY A 50 %*

We produce enough food to feed the entire world's population. At the same time, we have an exhausted food system, which answers not to people's nutritional needs but to market logic.

We massively waste food that is not consumed, while almost 900 million people suffer from insufficient or poor diet.

It is a major environmental, social, and economic problem. The UN Sustainable Development Goals (SDGs) define the challenges we need to overcome to ensure the continuity of human life. Reducing food waste by 50 % by 2030 is one of the key targets.

## GLOSSARY

### Food loss:

All food products destined for human consumption that, for whatever reason, remain on the farm or livestock holding.

### Food waste:

All food discarded from the food chain that is still perfectly suitable for human consumption and which, in the absence of possible alternative uses, is disposed of as waste.

Source: Ministry of Agriculture, Fisheries and Food (2017).

#### *WE WASTE ONE THIRD OF ALL THE FOOD PRODUCED IN THE WORLD*

What are the causes of this wastage?

Waste occurs at all stages of the food chain: from production in the field to processing, marketing and distribution of food products, right up to the moment of consumption.

But of this whole circuit, almost 50% of the waste is produced at the household level, where we may have a significant impact.

## Causes of wastage:

- (1) Food that is left in the field. Price development often makes it unprofitable to harvest such food.
- (2) Food damaged by frost, drought, pests or agricultural machinery itself.
- (3) Foods with all their nutritional value that is not sold because of aesthetic and commercial reasons.

### PRODUCTION

- (1) Food that is lost during handling for processing.
- (2) Food stored in poor conditions.
- (3) Food spoiled in long distribution routes.

### PROCESSING

- (1) Food spoiled due to failures in the cold chain.
- (2) Food rejected in quality control processes.
- (3) Food that is not sold due to inventory errors.

### COMERCIALIZATION

- (1) Food spoiled due to lack of cold or poor preservation.
- (2) Food that expires.
- (3) Food left over from dishes with excessive portions.
- (4) Lack of time, culinary knowledge or organisation.

### CONSUMPTION

#### *FOOD WASTE IS NOT NEUTRAL*

Waste represents an enormous waste of resources, not only food but also natural resources: water, land use and energy consumption.

It is also responsible for 8% of greenhouse gas emissions. In fact, if waste were a country, it would be the world's third largest emitter after China and the United States, with emissions equivalent to those of all global road transport.

In order to produce the wasted food, 1.4 billion hectares have been used, a space 24 times the size of the Iberian Peninsula. It also required 250 km<sup>3</sup> of water per year, the equivalent of 100 million Olympic-sized swimming pools.

The environmental effects of food waste are so serious that reducing food loss and waste is one of the most powerful solutions to prevent global temperatures from rising past two degrees Celsius, as established in the Paris Agreement (2015).

#### *THE VALUE OF FOOD*

While there are many people who are not guaranteed all their daily meals, each year, an average of 35 kg of food per person is wasted in Catalonia.

This figure represents an annual loss of 841 million euros in Catalonia. In the case of a family of four people, this would be equivalent to losing around € 450 a year.

### **B- BUY LOCAL AND SEASONAL FOOD**

#### *FOOD IS NOT A COMMODITY, IT IS A RIGHT*

We have created a global industrial production system that stores and transports food from anywhere in the world, any time of the year.

The long distance between production and consumption means we spend a lot of energy and build plenty of infrastructure. At the same time, it makes us live disconnected from the seasonal rhythms of local agriculture. This system leads to the loss of food sovereignty and fosters unfair relations in the food chain, benefiting the most economically powerful companies of the sector.

With this system, food becomes a commodity instead of a common good and a right.

Eating healthily and consciously means asking ourselves where what we consume comes from, how it has been produced and under what conditions, or why we pay a given price to buy it. It means taking control of our eating habits and choosing foods with the least environmental and social impact.

#### *RESPECTFUL AGRICULTURE*

Buying local and seasonal agri-food products is central to reducing CO<sup>2</sup> emissions and protecting the local agricultural fabric. But the conditions in which products are produced are equally important. To adopt responsible consumption habits, choose products grown on farms committed to quality and organic or sustainable principles.

#### **Organic farming (or biological/ecological farming)**

To obtain a high-quality and environmentally friendly production, organic farms discard synthetic fertilisers and phytosanitary products. To regenerate the soil, they use leguminous crops, plant-based fertilisers or manure from organic farms. To protect plants against diseases, they use natural techniques and products, among other practices.



## Sustainable agriculture

Agricultural formulas are being developed that seek to make greater environmental protection with high levels of agricultural efficiency. They are characterised by the use of techniques that reduce CO2 emissions and water consumption, minimise energy consumption, limit the use of fertilisers and promote the circular economy of waste. In some cases, alternative methods to chemicals can be as demanding as those of organic farming, but are not standardised.

## GLOSSARY

### Food sovereignty:

It is the right of people to determine the agricultural and food policies that affect them: to have the right and access to land and natural resources; to be able to feed themselves in a healthy and wholesome way with GM-free food; to protect and regulate domestic agricultural production and trade, to achieve sustainable development and food security.

It is a strategy designed to break with the neoliberal agricultural policies imposed by the World Trade Organisation, the World Bank and the International Monetary Fund.

The concept of food sovereignty was promoted in 1996 by the international peasant movement La Via Campesina, in Rome, in the context of the World Food Summit of the Food and Agriculture Organisation of the United Nations (FAO).

### *CONSUM AT THE RITHM OF NATURE*

Locally grown food is an environmentally friendly option, especially if we choose food from the natural growing season, as this reduces the energy needed to grow it in greenhouses and mitigates other environmental effects associated with transport, storage and refrigeration.

Buying local and seasonal products are two sides of the same coin, and an opportunity to regenerate links between the city and the countryside, as well as to promote respect for the origin of food and for those who produce it.

### *THE CLOSER THE BETTER*

#### **Local products**

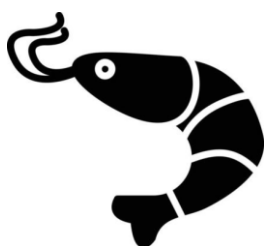
This is the name given to agri-food products that are characterised by the short distance that separates the producer from the consumer (a maximum of 100-200 km) and because only one intermediary is involved in their marketing. They are also called "zero-kilometre" products. This concept emerged in the late 1980s, in Italy, with the Slow Food

movement. In 2013, the Generalitat of Catalonia established a seal to accredit local sales.

Many products rooted in the territory, of great quality and uniqueness, are grown less than 200 km from the place where we are, usually identified with designations of origin and geographical indications.

#### *DO YOU KNOW WHAT HAPPENS BEYOND YOUR PLATE?*

The food on your plate may have travelled many miles and passed through many hands, masking social and environmental consequences in other parts of the world. Here are some examples:



#### **PRAWN :**

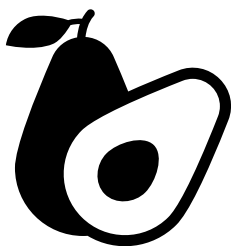
The prawn usually come from Thailand, Indonesia, Ecuador, Vietnam, Honduras, etc., where they are farmed in mangroves.

From there they are sent to China to be peeled and frozen.

They then travel to European countries, such as England or Holland, to be battered and distributed to the rest of Europe.

In addition to the CO<sub>2</sub> impact of transport, mass farming is causing the deforestation of mangrove forests and the destruction of ecosystems, which increases vulnerability to hurricanes and climate change.

Source: *El País*, *The New York Times*, Greenpeace.



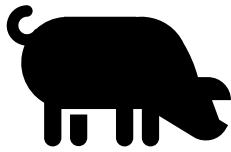
#### **AVOCADO:**

Spain is the leading producer of avocados in Europe. In 2016, more than 91,000 tonnes were harvested, of which only 20% were destined for domestic consumption.

Meanwhile, avocados from other countries, such as Mexico, Peru and Chile (88,362 tonnes), are available in our shops.

Avocados are not as green as they seem. In Chile, the plantations are leaving the inhabitants of the producing areas without water, and in Mexico, its cultivation is deforesting many areas, where illicit businesses of cartels and armed gangs are being introduced due to its high profitability.

Source: *The Guardian*, MAPA, *Los Angeles Times*, Customs.



### **PORK:**

The most widely produced meat in Spain is pork. It is produced 4.5 times what we eat, and all production is concentrated in eight provinces, mainly in regions of Catalonia and Aragon.

Half of the Spanish production goes to China. On the other hand, to feed pigs, it is necessary to import the raw materials used to make the feed from Argentina or Brazil.

There are nine million pigs in Catalonia, concentrated in Osona and the counties of Lérida. Pig excrement and urine (slurry) have an environmental impact associated with the pollution of aquifers and the atmosphere. These environmental impacts are difficult to reverse. Air pollution from slurry emissions has doubled in six years due to a production increase due to Chinese demand.

Source: Data from the Ministry of Agriculture, Fisheries and Food.

### *SHORTEN THE CHAIN*

Our food model is a great paradox: we have large amounts of different foods to choose from, we seem to have all the information that we need, and we consider ourselves the masters of our diet. However, often enough, the choices we make about what we eat are not in our best interest and result from a long chain of food supply that goes from the field to our plate.

The distance that a box of apples (grapes, rice, potatoes, or prawns) can cover to reach Barcelona is almost equivalent to a round-the-world trip (39,000 km), even though these products can be found within a radius of less than 100 km of the city.

The supply chain circuit is long and passes through many hands and regions. There are ways to short-circuit and shorten the chain to reduce environmental impacts and bring us closer to the people and territories that produce the food.

## **C- REDUCE ULTRA-PROCESSED FOOD**

### *WE ARE FACING AN UNHEALTHY DIET THAT IS GOING GLOBAL*

In general, traditional diets characterised by a high presence of plant-based foods, such as the Mediterranean diet, have in recent years undergone a transition towards a globalised dietary model: The Westernised diet.

This globalised diet is characterised by excessive consumption of calories, foods of animal origin - especially meat - and ultra-processed foods.

## Why do we eat what we eat, and why do we like what we eat?

The reasons for this change in food culture are associated with changes in habits and the environment: promotion and marketing of cheap, high-calorie foods by the food industry, generational fads, lack of physical activity, fast-paced lifestyles, etc.

But your diet can be a personal choice and a conscious act because your health and the planet's health depend on what you eat.

## GLOSSARY

### Unhealthy foods:

These are foods that, when consumed in excess, can deteriorate health in a cumulative, non-acute manner.

### Obesogenic environment

It is the set of influences that promote obesity in individuals as a consequence of certain contexts, opportunities, or life circumstances.

### Food additive

Any substance that is not usually consumed as food, nor used as a characteristic ingredient in food, and which has a technological purpose in the manufacture, preparation, treatment, transport or storage of food.

### THE MORE ULTRA-PROCESSED, THE LESS HEALTHY

In recent decades, consumption of processed and ultra-processed foods has increased exponentially. Data indicate that people who ingest more than 33% of their daily calories from these products have a 44% higher mortality risk than those who consume less than 14%.

Inadequate nutrition causes around 90,000 deaths a year in Spain, and in the specific case of Catalonia it is estimated that one in five people may die from this cause. If we look at the child population in Catalonia, one third of children between the ages of 3 and 14 years frequently consume high-calorie products.

In Spain, 35% of the child population is overweight or obese. In addition to causing these premature illnesses, this unhealthy diet also represents a burden that they will carry with them for the rest of their lives, as it increases the risk of suffering from other diseases in adulthood. Not to mention the consequences of emotional disorders and the social stigma attached to them.

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## **Association between the purchase of ultra-processed foods and the added sugar content of total food purchases in Spanish households from 1990 to 2010.**

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In Spain, the consumption of processed and ultra-processed foods accounts for 70% of the total diet, increasing the total content of added sugars ingested from 30% to 90%.

Source: P. Latasa, M. L. D. C. Louzada, E. Martinez Steele, C. A. Monteiro (2017).

According to UNICEF, the occurrence of child malnutrition is increasing due to the consumption of products high in fat and sugar, such as fast food and snacks. People from the most vulnerable social backgrounds consume fewer fresh vegetables and fruit and almost four times as many sugary soft drinks as those with higher incomes.

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## **In Spain, 35% of the child population is overweight or obese.**

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The occurrence of these diseases in families whose parents have a university education is 22%, while it rises to 40% in families whose parents have only primary or no education.

Source: [L'estat de salut, els comportaments relacionats amb la salut i l'ús de serveis sanitaris a Catalunya, 2020 \(gencat.cat\)](https://gencat.cat/observatori-salut/estats-salut/estats-salut-2020)

Many foods we eat are minimally processed to preserve them better and make them safer. Processed foods are.

With technological advances, the food industry has pushed for new ultra-processed products. Easy to prepare and preserve, quick to consume, tasty and generally cheaper, ultra-processed products have increased exponentially in recent years, especially among children and young people.

They are less nutritious than fresh products, and their continued, persistent consumption has harmful consequences for our health. They are also foods that have a high environmental impact.

## GLOSARIO

### Alimentos frescos o mínimamente procesados

Se obtienen directamente de plantas o animales, sin ningún elemento añadido.

Son la base de una dieta equilibrada y sabrosa.

### Alimentos procesados

Tienen azúcares añadidos, grasas, sal, almidones, antioxidantes, estabilizantes y conservantes para prolongar su vida útil, cambiar la textura, aportar sabores más intensos o hacerlos más atractivos.

La mayoría contiene entre uno y cinco ingredientes.

Para elaborarlos, se han aplicado procesos de conservación o cocción.

### Alimentos ultraprocesados

Están elaborados a partir de listas muy largas de ingredientes, con escasa o nula materia prima.

Contienen los componentes que se utilizan en los alimentos procesados: azúcar, aceites y grasas, sal, antioxidantes, estabilizantes y conservantes.

Contienen sustancias y aditivos que, aun siendo seguros, sirven únicamente para potenciar o modificar los sabores y los aspectos sensoriales del producto.

Se han diseñado para estar listos para su consumo, como productos precocinados o para solo tener que calentarlos.

### *ARE YOU ALREADY EATING WELL ENOUGH?*

To eat more healthily, the Public Health Agency of Catalonia proposes three actions:

- (1)** Promote the consumption of foods we currently eat less than recommended: "More fruit and vegetables, pulses and nuts, with an active and social life".
- (2)** When faced with two similar options, prioritise the healthier one: "Whenever possible, choose wholemeal foods, virgin olive oil and seasonal and local foods, and drink water.
- (3)** Reduce foods linked to a higher risk of disease and a higher environmental impact: "Less salt, sugars, red and processed meat, as well as ultra-processed products".

#### *STRONG FLAVOURS AND ATTRACTIVE PACKAGING*

In Spain, 77% of food advertisements are for unhealthy foods. According to World Health Organisation standards, almost half of those products should never be advertised, including chocolates, biscuits, sweets, energy drinks, and pastries.

Many of these ads are broadcast during children's time slots and mainly target infants and young people because they influence family purchases and are future consumers. These marketing practices violate children's rights to receive truthful information, to be protected from harmful content, and to enjoy proper nutrition.

Moreover, advertising resorts to misleading strategies, offering messages that inspire health, nature and authenticity, as well as to covert advertising practices through influencers, video games or social media.

### **D- REDUCE ANIMAL PROTEIN INTAKE**

#### *EAT HEALTHY FOR YOU, EAT HEALTHY FOR THE PLANE*

Excessive consumption of animal protein is one of the root causes of CO<sub>2</sub> and other greenhouse gas emissions and deforestation. Reducing current meat consumption is possible because we can also get the protein we need from plant-based foods.

There is growing scientific evidence showing the health and environmental benefits of eating more plant-based foods, such as vegetables, fruits, legumes, nuts, seeds and whole grains.

Choosing a diet with less animal protein is key to fighting climate change and improving our health and that of the planet.

#### **Eating so much meat is not "normal".**

In recent decades meat consumption has grown dramatically in most parts of the world. The shift from traditional diets towards more "meaty" diets has a higher impact on the health of people and the planet.

#### **You need protein, but they need not be animal proteins**

For our health, we need to eat about 0.8 g of protein per kilogram of our body weight every day. For a 70 kg person, that is about 390 g of protein per week. We can get this protein from meat, fish and eggs, and also from other protein-rich foods such as pulses, nuts, and seeds. It is best to opt for a combined diet and , above all, to increase the intake of proteins of vegetable origin.

#### *CHANGE YOUR DIET TO CHANGE THE WORLD*

The scientific community **PROPOSES** a diet that combines different foods **TAKING INTO ACCOUNT BOTH** human nutritional needs and **ITS** impact on the environment.

On a planetary healthy plate, fruits and vegetables take up one half of the space, while whole grains, unsaturated vegetable oils, plant protein sources and, optionally, modest amounts of animal protein make up the other half.

This means doubling the consumption of healthy foods such as fruits, vegetables, legumes, nuts and other seeds and a reduction of more than 50% in the global consumption of less healthy foods such as meat, especially intensively produced and processed red meat.

### **Too much CO<sub>2</sub> emissions**



The food system is currently responsible for 30% of global greenhouse gas (GHG) emissions, half of which come from livestock.

According to the United Nations, livestock globally produce 14.5% of total GHG emissions. This figure exceeds the direct emissions of all the world's cars, trucks and planes combined. Therefore, it is a major contributor to the climate crisis. However, it should be noted that there are different types of livestock farming and that, for example, extensive livestock farming has a much lower environmental impact.

### **Too much land occupation**



Obtaining 1 kg of animal protein can require up to twenty times more crop acreage than producing 1 kg of plant protein. Eating animal protein is highly inefficient: we get much less energy from meat than we have to feed the animal over its lifetime.

### **Too much deforestation**



Half of our planet's land surface is used for agriculture. Of this, 83% is devoted to growing cereal crops to feed intensive livestock farming, and only 17% is devoted directly to human food. In fact, extensive livestock farming requires more and more land from other parts of the world, which has a major environmental and social impact. For example, in South America, 71% of deforestation is due to livestock farming, mainly crops to feed extensive livestock farming elsewhere in the world.

### **Too much water consumption**



It takes 15 400 litres of water to produce 1 kg of beef using intensive livestock farming, considering all the water involved in an industrialised production process.

How many litres of water per year would you save if you stopped eating meat one day a week?



It takes more than 3000 litres of water to produce a 200 g hamburger. Thus, if you decide to stop eating one hamburger per week, you will save 160,000 litres of water per year - about the amount of water you would use to take a shower every day for four and a half years.

#### *EAT LESS FISH TO HAVE A LIVELIER SEA*

The Public Health Agency of Catalonia recommends reducing fish and seafood consumption to two or three times a week, and diversifying the type of fish -consuming both white and blue fish- which should preferably be sustainably caught.

#### **We catch and eat more fish than ever before**

Consumption of edible fish per person increased from 9 kg in 1961 to 20.5 kg in 2018. At the current rate of overfishing, we risk losing many of the species we consume today. Intrusive and unselective industrial fishing also affects other endangered species, such as turtles, sharks and dolphins, and degrades marine ecosystems to levels that may be irreversible.

#### **Social effects of overfishing**

The massive development of industrial fishing in recent decades has affected other, more sustainable types of fishing, in many cases artisanal and especially in the countries of the global south.

Huge trawler fleets catch as much fish in a single day as 50 cayucos in a year. This fact leads to another problem, the displacement of thousands of people from areas ravaged by industrial fishing to other continents in search of alternative ways to survive.

Globally, overexploited fish stocks account for 34.2% of the total, but in the Mediterranean, the indicator rises to 62.5%, a percentage that implies a danger to many species in our environment.

### **E- REDUCE PACKAGING**

#### *THERE HAS NEVER BEEN SO MUCH PLASTIC !*

The amount of packaging used for food has skyrocketed in recent years. We unnecessarily over-package and wrap food for safety and convenience, often in single-use packaging and mostly in plastic, due to its convenient characteristics: lightweight, highly resistant, flexible, etc.

In just four years, between 2016 and 2020, we produced one-half of all the plastic created in the world since 1950, and the pace hasn't slowed.

Plastic is an almost indestructible material: it can take up to 1000 years to decompose. Most plastic items will never disappear completely: they will only get smaller and smaller. A large amount of this plastic ends up in the sea, harming birds, marine mammals and fish; and reaching our plates in the form of microplastics.

## GLOSSARY

### Plastic degradation

#### Degradable plastic

Almost all our products contain plastic. Plastic degrades in small fragments during intervals of time between 100 and 1.000 years.

#### Biodegradable plastic

Biodegradable plastic products can be broken down into chemical elements by the action of biological agents such as bacteria, fungi or plants. There are degrees of biodegradability. Certain products do not biodegrade in nature, only under specific industrial conditions.

#### Compostable plastic

Besides biodegrading, compostable products may generate compost under certain conditions. Compost is an organic matter that can be used as a soil fertiliser and an essential ingredient in organic and sustainable agriculture.

#### *EPHEMERAL PLASTIC THAT WILL LAST 'FOREVER'*

##### **From the bottom of the earth...**

Plastic is made from petroleum, a mixture of hydrocarbons that formed very slowly under layers of mud and water more than 200 million years ago in ancient geological eras.

Oil is a non-renewable natural resource, a raw material for many materials and products, such as plastic. It is also a fossil fuel which, unfortunately, still represents the main source of primary energy in the world, contributing to global warming.

##### **... to absurd overpackaging**

In recent years, there has been an increase in the number of disposable packages that are only useful for a very short time. Often these packs can be totally unnecessary or absurd, for example, those containing fruit wrapped in plastic (fruit that already has a protective skin), or products with single-dose packs.

The main culprits behind this increase in packaging have been manufacturers, retailers and packaging companies who, by abandoning returnable packaging and applying marketing strategies, have found acceptance in a changing society where factors such as convenience and time-saving have become priorities.

## GLOSSARY

Almost all our products contain plastic. Plastic degrades in small fragments during intervals of time between 100 and 1.000 years.

### Use of packaging

#### Single-Use Packaging

Single-use plastic products are used once or for a short period before being thrown away. They are more likely to end up in seas and oceans than reusable plastic, a fact with serious repercussions for the environment.

#### Reusable Packaging

Reusable plastic products are those used for the same purpose for which they were made, or for a different purpose, several times before being discarded. It is the opposite of "use and discard".

#### Recyclable Packaging

Recyclable plastic products undergo a transformation process at the end of their useful life and are converted into a new material suitable for another product.

### *A MICROPLASTICS LAYER AS A LEGACY*

Most of the plastic waste will never be recycled: it will remain in the environment for hundreds or thousands of years, until it disintegrates into microparticles.

We are leaving a layer of sediment, distinguishable by the presence of various new materials, such as plastic, aluminium, cement and chicken bones.

Science calls this new era characterised by this fossil record the 'Anthropocene': a new epoch that began in the 1950s and is marked by the significant global impact of human activities on Earth.

### *YOU ARE A "PLASTIVOROUS ANIMAL"*

Every minute, the equivalent of a truckload of plastic is dumped into the sea. More than 150 million tonnes of plastics float or sink in the world's oceans.

Ocean currents accumulate this waste at five points in the oceans. The largest plastic island is the North Pacific, located between Hawaii and California: 1.6 million km<sup>2</sup> of plastics, an area equivalent to the sum of France, Germany and the entire Iberian Peninsula. Plastics dumped in the oceans have harmful effects on more than 700 animal species, including sperm whales and sea turtles.

From the Arctic ice to the deepest seabed, microplastics (< 5 mm) have been found in all the ocean sites examined. They end up being swallowed by fish or mixed with plankton and enter our food chain, which means they can find their way onto our plates. According to recent studies, we ingest an average of 5 g of microplastics per week, the equivalent of the weight of a credit card.

## 2— EDUCATIONAL PROPOSAL

### 2.1 Zero hunger

|                    |   |
|--------------------|---|
| <b>Audience</b>    | 6 y/o and older   |
| <b>Time</b>        | 60 minutes  |
| <b>Space</b>       | Indoors   |
| <b>Goals</b>       | <ol style="list-style-type: none"> <li>(1) Reflect on the right to food (differences between northern and southern countries, access to food, etc.).</li> <li>(2) To examine in depth the inequality in the distribution of food (crops, land, water, seeds, etc.) as a structural cause of poverty.</li> <li>(3) To stress the importance of a healthy and balanced diet in childhood, which guarantees the correct development of individuals.</li> </ol>   |
| <b>Description</b> | <p><b><u>6- 11 years old</u></b></p> <p>Tales for thinking, talking, and looking at the world through different eyes.</p> <ul style="list-style-type: none"> <li>➤ Read the story (description below).</li> <li>➤ Reflect with the children on some of the issues that have arisen: <ul style="list-style-type: none"> <li>- <i>Do they agree that there are children who work? How do they feel knowing there are children who cannot live or go to school like them?</i></li> <li>- <i>Is it good to eat chocolate and other fair-trade products? Why?</i></li> <li>- <i>Can we do something from here to help children who work harvesting cocoa?</i></li> <li>- <i>You can encourage them to order fair trade chocolate for the holidays from your organisation or to organise a fair-trade chocolate cake competition at a party.</i></li> </ul> </li> <li>➤ They can discuss at home the possibility of using fair trade chocolate: in bars, in powdered form for milk or in cream for toast.</li> <li>➤ Possible tasting of fair-trade chocolate and cocoa, or making a recipe with these products.</li> </ul> |

|  |   |
|--|---|
|  | <b><u>12 y/o and older</u></b><br>"Breakfast of the world" activity (description below) |
|--|---|

### **6- 11 y/o:**

***Patatín, Patatán, a tale by Justicia Alimentaria:*** This tale tells the story of Wara and Mallku, a Bolivian girl and boy who live in a small village in the Andes. The story tells how, once upon a time, the village had a serious problem. A man was using the land of the local peasants to plant sugar cane. He also built a factory where he processed the sugar to sell it in packets to other countries.

***Aventuras y desventuras de los alimentos que cambiaron el mundo, by Teresa Benítez:*** A journey around the world following the adventures of 15 elements that are common in our present diet but were mostly unknown only 300 years ago. The book recounts in a rigorous and entertaining way the vicissitudes of some of the main products of human nutrition: wheat, rice, maize, potatoes, bananas, etc. These foods contributed to improving our diet, and the population grew and grew. Today, many of them are at risk because of climate change. An entertaining and carefree way to help us understand why and how much it has cost us to eat what we eat, and what we must do if we want to preserve it.

### **12 y/o and older**

#### **"Breakfast of the world" activity**

This activity seeks to promote an experiential approach to situations and emotions provoked by injustice as a basis on which empathetic attitudes towards people who are victims of poverty, inequality and hunger can rest.

- To begin 3-4 young people are appointed to play as waiters. The educational team takes on the "maître" role. The rest of the group will represent the diners and will have to leave the room.
- A table is placed in a central position, with others surrounding it in such a way that, from them, you can see what is happening at the main table. Each one is identified with a coloured card.
- The coloured cards are randomly distributed among the participants. There should be as many cards as participants, but in proportions (10 red, 8 blue, 8 green, and 5 yellow). One of the young people (who does not have a yellow card) plays the role of a pregnant woman.
- At a maître's signal, a waiter invites the diners into the room and tells them where to sit (5).

- First go in those with red cards, then, successively, those with blue cards, those with green cards, and those with yellow cards. The first three colours will occupy the peripheral tables, with fewer chairs than participants (therefore, some will have to stand or share a chair).

If anyone protests, they will be told that it was a matter of luck and that they should make do with what they got.

Those with yellow cards will be moved to the central table, where there will even be an extra chair.

- Waiters will treat the participants at the central table courteously and cordially, while treating those at the other tables with reluctance. Once everyone is settled, the maître will welcome them, and breakfast will begin.
- Waiters will furnish the yellow table with tablecloth, cutlery and napkins. They will then take note of the drinks the guests would like, who can choose from a wide variety (juices, milkshakes, soft drinks). These guests will have their glass refilled every time it is empty, and waiters will pay great attention to any needs they may have.

Meanwhile, waiters will ignore the other tables, only addressing their diners to scold them, especially if they make noise. Then, solid food is served to the participants at the yellow table, who can choose between fruit and nuts. Any leftovers will not be distributed to the rest of the tables.

- At the peripheral tables, drinks will be served reluctantly: a bottle of cloudy water with some tea and no glasses. They will be told that the rest of the breakfast will be served in a few moments.

When the waiters return to the yellow table, they offer more food, such as bread and butter or pastries.

- Boiled rice will be served on the red table without cutlery.
- The blue table will be served a bowl of corn without cutlery. On the green table, a bowl of peanuts and another with cocoa powder, without cutlery.

If, at any time, diners at the peripheral tables protest, the waiters and the "maître will prevent them from stealing food or disturbing the participants at the yellow table.

The diners can be as indignant as they may but do not leave their respective tables. Food is again offered to the yellow table; for example, sweets to entertain the rest of the diners as humanitarian aid.

When the participants at the yellow table have had their fill, the maître d' ends the breakfast and asks everyone to leave the room without explanation.

- Group discussion on the feelings and reflections provoked by the experience. Naturally, the debate aims to analyse the similarities with reality and to go deeper into how the participants felt in their respective roles played, without forgetting the waiters and waitresses. Young people should also try to come up with solutions.

## 2.2 Story: A Recipe for Peace

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 6 y/o and older  |
| <b>Time</b>        | 60 minutes   |
| <b>Space</b>       | Indoors  |
| <b>Goals</b>       | (1) To become aware of the concept of Peace.<br>(2) Identify what is needed to achieve peace.<br>(3) To become aware of the current social situation.  |
| <b>Description</b> | Individually or in groups, according to the group's characteristics. <ul style="list-style-type: none"> <li>➤ Read the story (description below)</li> <li>➤ Reflection: What would the children put in the recipe for Peace?</li> <li>➤ Sharing recipes and checking if anything is missing.</li> <li>➤ Making, if appropriate, of a Peace-chef's hat and apron by the children (to get into their role).</li> </ul> |

### Story: A recipe for Peace

*One day, Muriel came home very crestfallen. She had been told at school that there were people who could not eat the way she did. The teacher had told her that there were places where clean water was scarce and food was not available to everyone. Many people could not even eat one meal a day.*

*- Papa, I hear there are children who can't eat - why don't we send them food ourselves? I can save some of my food and give it to them!*

*Muriel's father smiled. - That's a very good idea, Muriel, but it doesn't work like that, honey. There are different things that make these people not have enough food. Some live in places where the land is no longer fertile enough to grow crops, many have had to leave their homes because there were wars, and some can't buy the food they need because of poverty.*

*- But Dad, eating is a right! I don't understand why these things happen!*



*And Muriel's father didn't understand either; he didn't have the answer. There were so many doubts and so many problems behind this fact that he didn't know how to explain it, but he suggested.*

*- I have an idea. What do you think about preparing a sustainable recipe for Peace? We will pass it on to a lot of people, so they can see that there are children who care about other people.*

*- Oh yes, Dad, I love to cook! What ingredients do we need?*

*- What would you put in a recipe for Peace?*

*Muriel thought for a moment; she didn't know if she needed macaroni, onions or chickpeas.*

*- Mmmmm. Well, I would put:*

*50 grams of good vibes*

*2 kg of non-angry people*

*A lot of empathy*

*Food for all*

*Education for all*

*...*

*And you? What would you put in your recipe for Peace?*

## 2.3 Acting for the right to healthy and sustainable food

|                    |   |
|--------------------|---|
| <b>Audience</b>    | 6 y/o and older   |
| <b>Time</b>        | 60 minutes  |
| <b>Space</b>       | Indoors   |
| <b>Goals</b>       | <ul style="list-style-type: none"> <li>(1) Reflect on the small changes we can make to have a healthier and more sustainable diet.</li> <li>(2) Make small personal commitments.</li> <li>(3) Prepare a social mobilisation action centred on Children's Rights Day (20 November) to demand the right to food.</li> <li>(4) Encourage teamwork.</li> <li>(5) Promote the social protagonism of children.</li> </ul> |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Collection of personal commitments</li> <li>➤ Prepare an activist event linked to children's rights celebration and the Eating Changes the World campaign for the right to healthy and sustainable food.</li> </ul>  |

## **PART ONE:**

In a circle, we talk about which actions we can improve to adopt healthier and more environment-friendly eating habits in our immediate environment: the school and the educational space at lunchtime, the leisure centre, the home, etc. With all the resulting ideas, we may set challenges to be met during the year. Ideas to stimulate this debate:

**Pre-primary school - Little children:** have images of different actions in which the children see themselves reflected. From such images, new ideas can emerge (e.g., images of buying products from a farmer, of vegetables, of cooking as a family, etc.).

**Primary and secondary school – Children and teenagers:** we will "sow" in an orchard (real or fictitious) the commitments the group makes by giving each participant a seed as a symbol of this action.

### **Topics for debating with older children teenagers:**

- Responsible consumption (buying in traditional local shops, seasonal and local products, eco and agroecological products, fair trade and sustainable fishing, knowing how food is produced, etc.).
- Incorporate healthy habits (promote healthy diets, eliminate ultra-processed foods, reduce the consumption of intensively produced meat, have your vegetable garden, compile a recipe book of sustainable dishes, etc.).
- Reduce waste (plan purchases, preserve food correctly, reuse food, reduce packaging, etc.).

## **PART TWO:**

**Older children and teenagers** may organise the Eating Changes the World Gymkhana for younger children or the neighbourhood's population. To do so, they will organise themselves, prepare the challenges, the materials, etc.

**All the children** may make banners with activist drawings and slogans.

We select the commitments and needs to be included in a manifesto that we will read during the celebration on 20 November.

Let's think about how to publicise the event.

We record the most important moments and take advantage of the social networks to give visibility to the children's actions.

## 2.4 The scarecrow

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 3 y/o and older  |
| <b>Time</b>        | 60 minutes   |
| <b>Space</b>       | Indoors  |
| <b>Goals</b>       | <ul style="list-style-type: none"> <li>(1) To become aware of the problems that can arise when birds approach our vegetable garden.</li> <li>(2) Design a scarecrow.</li> <li>(3) Reuse discarded materials.</li> <li>(4) Cooperative work.</li> </ul>   |
| <b>Description</b> | <p>Making a scarecrow to protect the vegetable garden:</p> <ul style="list-style-type: none"> <li>➤ Sourcing materials, making and installing the scarecrow in the most convenient place.</li> <li>➤ Promote creativity and reuse of discarded <b>materials</b>.</li> <li>➤ Preparation of the necessary materials.</li> <li>➤ <b>For children</b>, sing the scarecrow song from País de Xauxa.</li> </ul> |

Although there is proof of the importance of biodiversity in the garden, the presence of birds can be detrimental because they may eat the fruit and vegetables we are growing. We will talk to the children about this problem and ask them to design a scarecrow, which we will then build and place in the garden.

We will promote the reuse of discarded materials that we have available. We can also ask families to contribute various materials.

The scarecrow may have the typical humanoid shape, but we may choose alternative designs, such as any moving structure, with different shapes and colours or reflective materials.

We let the children's creativity run free and provide them with all kinds of materials, colours and tools for advancing their creations.

A collaborative, artistic activity that can offer a lot of opportunities!

## 2.5 The garden's field notebook

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 6 y/o and older  |
| <b>Time</b>        | 60 minutes   |
| <b>Space</b>       | Indoors  |
| <b>Goals</b>       | <ol style="list-style-type: none"> <li>(1) To learn about our garden's fruit and vegetable life cycles.</li> <li>(2) To become aware of the time plants need to grow and bear fruit.</li> <li>(3) To learn about the season of each vegetable.</li> <li>(4) To practise naturalistic drawing.</li> <li>(5) To encourage meticulous observation.</li> </ol>   |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Write down in a notebook that will be given to each individual or group the monthly changes in the garden.</li> <li>➤ The idea is to write, draw, paste photos and dry leaves, etc. <ul style="list-style-type: none"> <li>○ Visit the garden once a month, and observe the changes in the different species planted. Pay special attention to changes in size, shape, colour and any details that may be important. Make notes on any animals and pests that may be present.</li> </ul> </li> <li>➤ Optionally, at the end of the course or at the end of the garden season, make a graphical representation of the timeline for each vegetable species, to register its evolution from the time it was sown or planted to the time of harvesting. <ul style="list-style-type: none"> <li>○ If this is done with different species, compare the different life cycles and become aware that each fruit and vegetable is linked to a time of the year.</li> </ul> </li> </ul> |

### Register the garden's evolution

How does our garden evolve? Do all the vegetables grow at the same rate? To find out about the life cycle of the different species, we will use a field notebook in which we will write down the changes that occur month by month. In this notebook we can write, draw, stick photos and dry leaves, etc.

We will provide each child with a notebook that he/she will keep throughout the course. This notebook may have any format or be made up of templates to make it easier for the children.

There can also be a single notebook for the whole group, and it can be filled in collaboratively.

We can also record the animals we find in the garden: earthworms, centipedes, snails, spiders, ladybirds, beetles, butterflies, etc. We will look carefully to discover small animals hiding among the leaves and on the ground.

Children may write down all the observed changes in their notebook, including the date of the activity, a brief description of it, and a drawing that represents the current state of the garden.

We will practise naturalistic drawing, paying close attention to details, shapes and colours.

At the end of the course or at the end of the gardening season, we can make a graphic representation of the timeline for each vegetable species so that we can see its evolution from the moment we have sown or planted it to the moment of harvesting.

If we do this with different species, we can compare their life cycles and become aware that each fruit and vegetable is linked to a specific time of the year.

## 2.6 The garden's memory game

|                    |   |
|--------------------|---|
| <b>Audience</b>    | 3 – 9 y/o   |
| <b>Time</b>        | 30 minutes  |
| <b>Space</b>       | Indoors   |
| <b>Goals</b>       | (1) Recognise the fruits and vegetables in the garden.<br>(2) To learn which part of each species we eat.<br>(3) To develop ingenuity and memory. |
| <b>Description</b> | ➤ Make the memory game with drawings or photographs of fruit and vegetables from the garden.<br>➤ Play the game!                                  |

### (1) Making the memory game

Make a list of fruit and vegetables (whether or not they are in the garden) and look for photographs or draw pictures in duplicate. This should always be done cooperatively. There are two variants:

- A simple version is to make two identical pictures.
- The more sophisticated version is with two pictures of the same species but of different parts of the plant (one of the fruit and one of the leaf or flower, for example).

## (2) Playing the game

The game may be played in two ways:

Turn all the pictures face down and, in turn, turn them over two by two.

If the two pictures match, the participant has to say which fruit or vegetable it is and which part is edible.

The game ends when all the pairs have been uncovered.

There are two ways to play the game:

- Competitive version: they who find the pair faster keep the cards.
- Cooperative version: activate a chronometer and let the whole group look for pairs. They play against the clock.

## 2.7 In search for invertebrates

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 3 y/o and older  |
| <b>Time</b>        | 60 minutes   |
| <b>Space</b>       | Outdoors   |
| <b>Goals</b>       | <ul style="list-style-type: none"><li>(1) To learn about the invertebrates living in our garden.</li><li>(2) To become aware of the importance of biodiversity.</li><li>(3) To discover how we can promote biodiversity.</li><li>(4) To learn about the trophic relations between different animal and plant species.</li></ul>  |
| <b>Description</b> | <ul style="list-style-type: none"><li>➤ Introduction to invertebrates (description below)</li><li>➤ Hand out the materials (paintbrushes, magnifying glasses, some jars and a terrarium).</li><li>➤ 15-20 min of exploration (you can put the contents of the jars in the terrarium for detailed observation and identification, or do it directly on the jars, with or without a magnifying glass).</li><li>➤ Identification and subsequent release of invertebrates.</li><li>➤ Mural: represent the species found and their trophic relations on a mural.<ul style="list-style-type: none"><li>○ Look for images on the internet or ask the children to draw according to their age and abilities.</li></ul></li></ul> |

## Introduction to invertebrates:

### Invertebrates beneficial to our garden:

- Pollinators: they are a central factor in the pollination of our fruit and vegetables and, therefore, their reproduction and fruiting. For more information, consult this article: How to make an insect hotel at school or in the educational leisure centre.
- Predators: they can naturally control pests because they eat other animals. For example, ladybirds eat aphids, earwigs eat aphids and mealy bugs, lacewings eat aphids, whiteflies, red spider mites and mealy bugs, etc. Predators ensure the balance of the system.
- Decomposers: they feed on organic matter and enrich the soil. They live mainly in areas rich in organic matter, such as the compost heap, but also the soil of the garden, as is the case with earthworms. They are very beneficial for soil balance and the supply of nutrients and compounds.

### Invertebrates prejudicial to our garden:

Another group of invertebrates can become pests and damage plants intended for human consumption. This group includes, among others, snails, slugs, aphids, cabbage leafhoppers, mealy bugs, spider mites and ants.

## 2.8 Building an insect hotel

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 6 y/o and older  |
| <b>Time</b>        | 90 minutes   |
| <b>Space</b>       | Outdoors   |
| <b>Goals</b>       | <ul style="list-style-type: none"><li>(1) To learn about the biodiversity associated with our orchard.</li><li>(2) To learn about the role and importance of each species.</li><li>(3) To encourage respect and care for nature.</li><li>(4) To promote invertebrate biodiversity.</li></ul>   |
| <b>Description</b> | <ul style="list-style-type: none"><li>➤ Explanation and justification of building of an insect hotel: promoting invertebrate biodiversity.</li><li>➤ Collection of natural elements:<ul style="list-style-type: none"><li>- Dried leaves</li><li>- Logs with holes of different sizes</li><li>- Straw</li><li>- Twigs of different sizes</li><li>- Ceramic pots</li><li>- Roof tiles</li><li>- Reeds</li></ul></li></ul> |

|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>- Dried pine cones of different sizes</li> <li>- Bark</li> <li>- Corrugated cardboard</li> <li>- Hollow bricks</li> </ul> <p>➤ Building the wooden structure</p> <p>➤ Fill the different compartments of the structure with wood and collected elements. Put up a wire mesh (chicken wire or a grid with holes open enough to allow the animals to pass in and out).</p> |
|--|---|

### Carrying out the activity

Insects and other invertebrates are essential for balance in the garden and the healthy growth of vegetables. We need decomposers to maintain good-quality soil, pollinators to ensure that plants bear fruit, and predators to control pests.

To encourage invertebrate biodiversity, we will build an insect hotel. We prepare the tools and materials and move on to DIY by following these steps:

First, we have to make the wooden structure in the shape and size of our choice.

Then, we have to collect natural elements, such as:

- Twigs of different sizes
- Dried leaves
- Logs with holes of different sizes
- Straw
- Ceramic pots
- Roof tiles
- Reeds
- Dried pine cones of different sizes
- Bark
- Corrugated cardboard
- Hollow bricks

With all these materials, we will fill the different compartments and then place a wire mesh, a chicken wire, or a grill so that the materials do not disperse in the wind. But the mesh holes must be large enough to allow the invertebrates to pass through, inside and out. Remember that the invertebrates will go to sleep and make their nest and also wander around the garden whenever they want! It is not a cage but a hotel.

The variety of microhabitats will encourage the presence of different species and attract more biodiversity!



## 2.9 Our market

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 6 y/o and older  |
| <b>Time</b>        | 90 minutes   |
| <b>Space</b>       | Outdoors   |
| <b>Goals</b>       | <ul style="list-style-type: none"> <li>(1) Appreciate the effort needed and the results of maintaining the garden.</li> <li>(2) Recognising and harvesting produce suitable for sale.</li> <li>(3) Relate with families through vegetables.</li> <li>(4) Learning how to manage a market stall.</li> <li>(5) Making calculations with money: collecting and giving change.</li> <li>(6) Working cooperatively as a team for the common good.</li> <li>(7) Valuing local and organic products.</li> </ul>   |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ When the time is right for a good harvest, visit the garden, harvest and remove the soil from the produce. Remove damaged parts of plants that are not suitable for sale.</li> <li>➤ Discuss food waste (description below).</li> <li>➤ Prepare the stall (description below). With groups of teenagers, reflect on the importance of consuming local, seasonal and organic products. Possibility of visiting a local market in the neighbourhood or village, or a municipal market where local and organic products are available. You can interview the sellers to find out the tricks of being a good seller, as well as the products that customers like the most.</li> </ul> |

### Explanation/proposal. Food waste and other concepts:

- (1) When a vegetable or fruit is ugly, does that mean it is no longer fit for consumption? Do our vegetables look the same as those we find in the supermarket? Why?
- (2) What are the edible parts of a plant? ALERT, trick question!!! Did you know that you can make a delicious soup with carrot leaves? Or put beetroot leaves in your salad? Just because you haven't eaten it before doesn't mean it can't be done. Let's get some information and make the most of the vegetables we have grown! And maybe we can even set up a cooking workshop to make the most of them.
- (3) Do we know any tricks to make better use of vegetables? For example, instead of harvesting the whole lettuce (or the whole bunch of spinach or chard), we can pick only the outermost leaves and leave the plant in the ground to pick some

more leaves the following week. In this way, we do not pull up the plant and extend its life cycle.

### Preparing the stall:

- (1) Prepare posters and advertisements to advertise the stall: we will highlight that these are local, home-grown, and organic products.
- (2) Prepare half-kilo packs of peas and broad beans with pods or shelled.
- (3) Before displaying the products on the stall, we will remove slugs, snails and earwigs that we may find among the leaves.
- (4) Make bunches of young garlic, spinach, chard, radishes and onions.
- (5) Make signs with the names of the products and their corresponding prices.
- (6) Prepare the stall and decorate it to make it attractive. Above all, be sure it is in a visible and accessible place.
- (7) Have wooden boxes that you have collected from local shops to prepare baskets for your customers.
- (8) Organise in pairs or teams for the tasks to be carried out: preparing the box with the products, collecting and giving change, weighing on the scales, fetching more products, etc.
- (9) Set a symbolic price and, with the profits, go and buy new seedlings for the following year.

## 2.10 Potions and tricks against pests

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 6 y/o and older  |
| <b>Time</b>        | 90 minutes   |
| <b>Space</b>       | Outdoors   |
| <b>Goals</b>       | <ol style="list-style-type: none"> <li>(1) To know the main pests that can affect our vegetable garden.</li> <li>(2) Learn how to prevent and naturally control pests.</li> <li>(3) Protect our vegetable garden with ecological systems.</li> </ol>   |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Turn the classroom or room into a scientific laboratory or a witches' and wizards' kitchen.</li> <li>➤ We will look for ingredients to prepare biological phytosanitary treatments (slurries, macerations, decoctions, or infusions based on plants) to combat pests (examples described below).</li> </ul> |

### Proposals for preparations:

- (1) Horsetail decoction: excellent fungicide (powdery mildew, downy mildew, etc.). The recommended dose for the decoction is 500 g of dried plant/5 l of water. The decoction should then be diluted with water in order to apply it to the plant (dilution: 1:4, i.e. one-part decoction to 4 parts water).
- (2) Nettle maceration: a natural insecticide against aphids that is a nourishing and revitalising vitamin booster for plants. Macerate fresh nettle (be careful when picking, wear gloves) in water for 24 hours. It is not necessary to dilute it. It can be applied directly to the leaves of the plants.
- (3) Garlic infusion: fungicide (powdery mildew, downy mildew, etc.), insecticide (mites and aphids) and pest repellent. Make an infusion with 50 g of dried garlic per litre of water (50 g/l). Dilute the resulting liquid in water at a ratio of 1:4 (20%) before applying it to the plants. Spray the affected plants in full sun for three consecutive days and spray the soil around the plant.
- (4) Potash soap dilution: used against aphids, scale insects, thrips and whitefly. It is a natural soap made from recycled oils and potash, useful also for hand washing. Find this soap in selected drugstores and specialised shops, or make it at home. Whether you buy it or make it yourself, dilute it before applying it to the plants. Apply a solution of 20 g of solid soap per litre of water (20 g/l) or 50 ml of liquid soap per litre of water (50 ml/l).
- (5) Chamomile infusion: strengthens the plants against diseases. Make an infusion with dried chamomile flowers (50 g of chamomile per 1 litre of water). Before applying it, prepare a 10% dilution (dilution: 1:9, i.e., one-part infusion to 9 parts water). The plants can be sprayed every day for 15 days during the growth phase.
- (6) Nasturtium infusion: aphid and whitefly repellent. Prepare the infusion with the fresh plant (100 g of nasturtium per 1 l of water). Then dilute the resulting liquid to 5% (dilution 1:19, i.e. one-part infusion to 19 parts water).

## 2.11 The corner of aromatic plants

|                 |   |
|-----------------|---|
| <b>Audience</b> | 6 y/o and older   |
| <b>Time</b>     | 90 minutes  |
| <b>Space</b>    | Indoors   |
| <b>Goals</b>    | <ol style="list-style-type: none"><li>(1) To learn about aromatic plants and their properties.</li><li>(2) To develop all the senses.</li><li>(3) Learning to enjoy nature.</li><li>(4) To observe the interactions between animals and plants.</li></ol> |

|                    |  |
|--------------------|--|
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Plant several species of aromatic plants (description below) in one corner of the vegetable garden or patch or on a terrace or balcony. Aromatics can also be grown among vegetables as they are generally protective and low-demanding plants, improve the soil and attract pollinating insects.</li> <li>➤ Reflect together on the characteristics that aromatic plants have in common and look for information.</li> </ul> |
|--------------------|--|

### **Aromatics ideal for planting with infants:**

Thyme  
 Rosemary  
 Oregano  
 Sage  
 Mint  
 Fennel  
 Calendula  
 Savoury  
 Lavender  
 Lemon verbena  
 Chamomile  
 Parsley  
 Orange blossom  
 Immortelle  
 Basil  
 Dill  
 Marjoram

### **Considerations:**

Most aromatics are perennials and live for a few years, so we must provide adequate space.

Since most of them are adapted to the Mediterranean climate, little watering -much less than vegetables- will generally be enough for them. And they will usually need a lot of sun.

We may reflect together with the children on what characteristics aromatic plants have in common and look for information. Do they all have brightly coloured flowers? Do they attract pollinating insects? Do they smell good? Why do they smell good? Do they have large or small leaves? Do they have medicinal properties?

If we can plant an aromatic tree or shrub -such as an elder, a laurel, or a fruit tree with aromatic flowers- our garden will be even more complete. For example, lemon and

orange trees produce flowers with intense aromas, cherry and almond trees have beautiful flowers with softer smells.

### Supplementary activities:

The aromatics garden may also be useful to:

- (1) Learn to identify each species by its smell, blindfolded. Play a scent recognition game.
- (2) Observe the pollinating insects that visit the flowers and draw or photograph them.
- (3) Workshop with families to learn about aromatic plants, their medicinal properties and culinary uses.
- (4) We will dry the most suitable species to make infusions and taste them.
- (5) Using the most culinary species, we may organise an aromatic cooking workshop: mint or basil smoothies, salads with parsley, basil or fennel, pizzas, and cakes with rosemary, thyme or oregano. What traditional recipes do we know that use aromatic plants?

## 2.12 We get sprouts for salad

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 10 y/o and older   |
| <b>Time</b>        | 60 minutes   |
| <b>Space</b>       | Outdoors   |
| <b>Goals</b>       | <ol style="list-style-type: none"> <li>(1) To learn about seeds and the germination process.</li> <li>(2) To learn about the different species that are easy to germinate.</li> <li>(3) To learn how to prepare our own sprouts to enrich salads.</li> <li>(4) To discover a taste for cooking and salads.</li> </ol>  |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Introduction to sprouts (they are a great source of vitamins and minerals, provide vitality, strengthen the digestive and immune systems and have a depurative action).</li> <li>➤ Preparation of the material (description below)</li> <li>➤ Preparation of the sprouts (description below)</li> <li>➤ Taste after 3-5 days of the germination process. Use sprouts to enrich meals. Prepare recipes, try out combinations, talk about their benefits, etc.</li> </ul> |

## Materials

- (1) Wide-mouthed glass jars.
- (2) Seeds of different types: lentils, chickpeas, quinoa, soya, azuki, chia, flax, beetroot, radish, fennel, broccoli, red cabbage, etc. (even better if they are organically grown).
- (3) Elastic bands.
- (4) Gauze.

## Sprout preparation:

- Soak a small number (a teaspoon) of seeds, cereals or legumes overnight.
- The next day, throw away the water and place the seeds in a wide-mouthed glass jar (you should be able to reach in to extract the sprouts that will grow at the bottom).
- Put a finger's worth of water in the jar and cover it with a piece of gauze held in place by an elastic band. Tilt the pot to remove the water (the seeds should be wet but not flooded) and leave them to rest overnight, at which time repeat the watering operation.
- Continue watering and changing the water twice a day for 3 or 4 days. Always leave the pot in a dark corner of the kitchen, where it does not receive direct sunlight.

## 2.13 The best dish from the garden

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 6 y/o and older  |
| <b>Time</b>        | 60 minutes   |
| <b>Space</b>       | Indoors  |
| <b>Goals</b>       | <ol style="list-style-type: none"><li>(1) To give use to the fruit and vegetables grown in our garden.</li><li>(2) To encourage culinary creativity.</li><li>(3) To discover new textures and flavours.</li><li>(4) To encourage self-consumption.</li><li>(5) Encourage the consumption of vegetables and fruit.</li><li>(6) To raise awareness about healthy and sustainable food.</li></ol> |
| <b>Description</b> | <ul style="list-style-type: none"><li>➤ Organise a cooking workshop with the children when it is time to harvest the fruits and vegetables from the garden.</li><li>➤ Divide the children into small groups, each of which should draw up a list of fruits and vegetables ready to</li></ul>   |

|  |   |
|--|---|
|  | <p>be harvested and invent a recipe including these ingredients.</p> <ul style="list-style-type: none"> <li>➤ You can also look for guided recipes.</li> <li>➤ Tasting of dishes.</li> <li>➤ A cooking competition can be organised. Make sure that all participants are eventually winners.</li> </ul> |
|--|---|

### Carrying out the activity

When the harvest season arrives, we will organise a cooking workshop with the children in the group. We can practise cooperative cooking, team cooking, or even cooking in a "quiz" format.

We will divide the children into small groups. First, they should make a list of the fruits and vegetables that are ready to be picked and invent a recipe that includes them as ingredients.

For inspiration, we can look for recipes in specialised guides. You can consult the article: 25 recipe books for cooking with children. We can also ask families for help in coming up with ideas.

Depending on the age of the children, we can focus on cold dishes such as salads and raw vegan preparations, which do not require fire. Alternatively, we may provide the tools and appropriate safety measures to prepare more elaborate recipes.

The cooking competition should have different categories to ensure that all groups are winners (e.g. most original dish, most fun, most elaborate, healthiest, most colourful, fastest, slowest, messiest, etc.).

Afterwards, the only thing left to do is to taste all the dishes and enjoy the flavours and textures of our vegetables!

## 2.14 YouTubers in the garden

|                 |  |
|-----------------|--|
| <b>Audience</b> | 10 y/o and older   |
| <b>Time</b>     | 90 minutes   |
| <b>Space</b>    | Indoors  |
| <b>Goals</b>    | <ul style="list-style-type: none"> <li>(1) Learn communication techniques.</li> <li>(2) Learn how to edit videos and get to know digital channels.</li> <li>(3) Awaken a critical spirit and responsibility towards social networks (considering ethical, legal, security, digital identity, etc.).</li> <li>(4) To enhance creative, communicative and digital skills.</li> </ul> |

|                    |     |   |
|--------------------|-----|---|
|                    | (5) | Learning and Service to disseminate garden techniques.                    |
|                    | (6) | Transmit the knowledge learnt in the garden.                              |
| <b>Description</b> | ➤   | Joint reflection (description below)                                      |
|                    | ➤   | Creation of heterogeneous groups with a diversity of skills and abilities |
|                    | ➤   | Description of the steps to become a YouTuber                             |

### **Joint reflection**

- (1) Critical analysis of YouTubers or Instagrammers we know and follow: What issues do they deal with? How do they approach them? Do they integrate gender equality or talk about climate change? Do they have racist discourses? How do they deal with food issues? Do we think they influence our behaviour and our health?
- (2) Are we aware that influencers are generators of discourse and contribute to constructing the collective imaginary? How do we interpret what they tell us on the networks? Do we have a critical view?
- (3) We investigated YouTubers, influencers, Instagrammers, and bloggers in gardening, healthy eating and related topics. What works for them? What issues do they deal treat?

### **Steps to becoming a YouTuber:**

- (1) We think about what we want to say.
- (2) We look for information about the topic.
- (3) Write a script? Improvise? We practice and study the scene to avoid reading on camera and be as natural as possible.
- (4) What tone do we want to give it? Comical? Serious? Scientific? Critical? Activist?
- (5) What kind of scenery will we have? The vegetable garden? The terrace with the planters and pots? A workshop with vegetables as decoration?
- (6) We record different sequences and explanations.
- (7) We practice video editing with different mobile or computer applications.
- (8) Before posting the video on the networks, we make a good review of the content and think about what impact it can have on the public. Can it generate controversy? What reaction do we expect from the audience? We also consider image rights.
- (9) We wonder about the best network to upload the video. Should it have a different format depending on the platform?



- (10) Do we have our own school, high school or educational leisure centre networks to disseminate the video? Do we create our own channel?
- (11) How do we analyse the impact of the video? Let's be critical of the likes: how do we manage the channel; how do we build follower loyalty? How do we manage comments?
- (12) We think long-term and consider a series of videos to encourage young people to have an organic vegetable garden on their balcony and switch to healthy and sustainable food.

## 2.15 How much food are we throwing away?

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 4 y/o and older  |
| <b>Time</b>        | 60 minutes   |
| <b>Space</b>       | Indoors  |
| <b>Goals</b>       | <ul style="list-style-type: none"> <li>(1) Promote the environmental sustainability of the food chain.</li> <li>(2) To realise how much food is wasted at home or school.</li> <li>(3) To become aware that food is a valuable resource that needs to be managed and consumed with the utmost care.</li> <li>(4) Reinforce eating habits and emphasise avoiding throwing food away.</li> </ul> |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Play the proposed game (cards for children and truth or lie for teenagers and young people).</li> <li>➤ Joint reflection on food waste and how to avoid it.</li> </ul>  |

### Children

Do we have leftover food on our plate? Before throwing it away, let's consider what new and delicious dishes we can cook.

The aim of the game is twofold. On the one hand, to match leftovers with the meals they have transformed into and, on the other hand, to avoid getting caught up in food waste.

Each child receives a card with the picture and name of a leftover food or meal. One or two children receive the food waste card. Their mission is to prevent leftovers and meals from getting together.

We mark out a playing field. In the centre are the children with the food waste card, at one end those with leftovers cards and at the other end those meal cards.

Examples of leftover cards with their corresponding food.

| <b>Leftovers</b> | <b>Meals</b>   |
|------------------|--|
| Chicken          | Croquettes<br>Macedonia, juices, fruit shakes, jams, etc.        |
| Fruit            | Fruit salad or cocktail, juices, smoothies or shakes, jams, etc. |
| Vegetables       | Vegetable cream soup, pizza, etc.                                |
| Chickpeas        | Hummus   |
| Hard cheese      | Macaroni with grated cheese                                      |
| Stale bread      | Braded cutlet  |

### **Teenagers and young people**

We read out a series of statements, and participants decide whether they are true or false.

Example sentences:

- Food waste is food thrown away, even though it is safe and nutritious for people (True).
- Most food is thrown away in the field where it is grown. (False. The highest percentage of food waste occurs in the home).
- Many foods are considered "ugly" and thrown away before they reach the shops (True. Outward appearance has no influence on taste or nutrients, but we have become accustomed to seeing food of the same size and shape, while the rest is discarded).
- When we throw food away, we also waste all the natural resources, labour and money that has gone into its production (True).
- Disposing of the refuse that waste generates does not affect the environment. (False. It produces greenhouse gases. As much as if it were the third most polluting country in terms of emissions).
- When we throw potato peelings in the organic-waste container, we are doing it right. (False. With potato peelings we can cook a delicious new meal: crispy potato peelings. With leftovers, we can always prepare new meals and reduce waste as much as possible).

## 2.16 Erupting pumpkin

|                    |   |
|--------------------|---|
| <b>Audience</b>    | 6 y/o and older   |
| <b>Time</b>        | 30 minutes  |
| <b>Space</b>       | Indoors   |
| <b>Goals</b>       | <ul style="list-style-type: none"><li>(1) Motivate to learn science.</li><li>(2) Conduct a simple science experiment using a pumpkin as an experimental substrate.</li><li>(3) Teamwork.</li></ul>  |
| <b>Description</b> | <ul style="list-style-type: none"><li>➤ Preparation of the material (description below)</li><li>➤ Preparation of the pumpkin rash (description below)</li><li>➤ Making a recipe with the leftover pumpkin pulp. Look for recipes on the internet.</li></ul> |

### Materials

- A more or less round pumpkin
- A knife to cut it and spoons to scoop it out
- Vinegar
- Baking soda

### Steps to make an erupting pumpkin:

- (1) Cut the pumpkin at the top (like a hat). An adult should do the cutting.
- (2) Scoop out the pumpkin with a spoon. This can be done by children. Reserve the extracted pulp for cooking.
- (3) Make free-style openings.
- (4) Put a good amount of baking soda inside the pumpkin (the more, the stronger the reaction).
- (5) Add a glass of vinegar.
- (6) The vinegar reacts with the baking soda, which creates a foam that will come out of the holes in the pumpkin, making it look like an eruption.

## 2.17 We research refuse

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 3 y/o and older  |
| <b>Time</b>        | 60 minutes   |
| <b>Space</b>       | Indoors and outdoors   |
| <b>Goals</b>       | (1) Raise awareness of the waste we generate through food.<br>(2) Discuss more sustainable alternatives.   |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Quantify the amount of waste generated in educational centres.</li> <li>➤ Collect a sample of this waste.</li> <li>➤ Classify waste.</li> <li>➤ Make calculations and estimations based on the total amount of waste produced.</li> <li>➤ Discuss and reflect on the amount of waste we produce at home, school, and the educational leisure centre.</li> <li>➤ Organise a photography exhibition about waste to raise awareness among families.</li> </ul> |

### Carrying out the activity

During the period of choice (one day, one week), we will collect, observe, classify and quantify a sample of the **waste** we produce at breakfast, lunch or afternoon snacks in the educational centres.

- (1) We classify the waste according to whether it is:
  - Organic
  - Paper or cardboard
  - Aluminium foil
  - Plastic packaging
  - Plastic container
  - Glass
  - Cans
  - Other
  - From what we have collected, we make calculations and estimates and think about how much waste we collectively produce over a day, a week, a month, a year, etc.
- (2) We open the debate

- Do we produce little or a lot of waste?
- Is packaging disposable?
- Where should this waste be sent? Are we separating well?
- How could it be reduced?

(3) Display the waste.

We can follow up the activity by organising a photography exhibition showing all the waste collected. It can be a practical way to generate critical awareness and reflection among the other groups in the school, families, the neighbourhood, etc.

## 2.18 Game of the pomegranate

|                    |   |
|--------------------|---|
| <b>Audience</b>    | 3 y/o and older   |
| <b>Time</b>        | 10 minutes  |
| <b>Space</b>       | Outdoors  |
| <b>Goals</b>       | <ul style="list-style-type: none"> <li>(1) To foster bonds and group cohesion.</li> <li>(2) To increase knowledge about autumn fruits.</li> <li>(3) Promote healthy and sustainable eating.</li> </ul>  |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ All participants move freely around the space, and when they hear the word 'pomegranate' they must quickly group, in less than 5 seconds, and give each other a big hug.</li> <li>➤ Each person represents a seed, and the union of all of them is the pomegranate (symbol of friendship, of bonding).</li> <li>➤ If convenient, play background music.</li> </ul> |

Pomegranates have been known since the Egyptians (2500 BC) buried people with this fruit to wish them abundance in the afterlife. It is believed to have been introduced to the Mediterranean region by the Carthaginians during the Punic Wars, hence its scientific name: *Punica granatum*.

Beneath its golden-orange skin, we discover that numerous peoples have known pomegranates and attributed them many beneficial properties, both nutritional and ideological.

Here is a very simple game that can be included in educational leisure activities, in a physical education class, during lunchtime, or at home with the family.

All participants move freely around the play area. When they hear the word 'pomegranate', they must quickly group, in less than 5 seconds, and give each other a big hug. Each person represents a seed, and the union of all of them represents the delicious pomegranate.

Liven up the game with background music.

Work on the symbolism of the pomegranate as a representation of the value of friendship, expression of affection, bond, etc.

## 2.19 The leftovers festival

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 5 y/o and older  |
| <b>Time</b>        | 90 minutes   |
| <b>Space</b>       | Indoors  |
| <b>Goals</b>       | <ol style="list-style-type: none"> <li>(1) Organise a fun-festive day in the neighbourhood to join forces against food waste.</li> <li>(2) Networking with organisations and businesses in the neighbourhood.</li> <li>(3) Raise public awareness of the problem of food waste.</li> <li>(4) Provide tools and resources to support the adoption of new eating habits.</li> <li>(5) Be the driving force for social dynamism and transformation.</li> <li>(6) Carry out the activity.</li> </ol> |
| <b>Description</b> | <p>It is a community action aiming at involving the neighbourhood in preventing food waste. Young people have a decisive role to play in raising awareness.</p> <ul style="list-style-type: none"> <li>➤ Making a diagnosis of food waste in the neighbourhood.</li> <li>➤ Planning of the leftovers' festival.</li> <li>➤ Preparations for the festival</li> <li>➤ Evaluation and celebration of the successes achieved</li> </ul>  |

- 1) First of all, we should make a diagnosis of waste in the neighbourhood and devise a leftovers festival.

We learn about food waste and collect data on the subject. We may prepare a survey for the school's families, for neighbours, talk to shopkeepers, etc.

Let's think about how to disseminate the results in the neighbourhood and announce the date of the "leftovers festival".

We devise an action plan to organise "The leftovers festival" and set up working committees. Some questions to work on:

- What do we want to achieve with this festival?
- To whom is it aimed? Where will it take place? How long will it last?
- How will we involve families, neighbourhood organisations and businesses?
- Can businesses collaborate with food that is about to expire?

- Can the elderly contribute what they know about leftovers cuisine? How can we encourage them to participate?
- Should we inform the district council or the city council?
- What permissions do we need?
- Will we offer a food tasting? Will we need special permits? Who will do the cooking?
- Will we do awareness-raising activities and games?
- Publicise the festival? (posters, networks). Inform the local and social media? Create a specific hashtag?
- Will we invite an animation group?
- Plan to record the event: photos, video, interviews with participants, etc.

2) Prepare and hold the festival.

- The commissions carry out the tasks. If necessary, we reformulate the internal organisation.
- We foresee and buy the necessary materials.
- We plan a meeting with all the participating groups.
- We reinforce the publicity actions.
- We think about the general decoration, the messages we want to convey, etc.
- We enjoy the festival!
- We think about what to do with the leftover food.

3) Appreciate and celebrate the successes achieved.

- Thank everyone for their participation through a video, an email, a message on social networks, etc.
- We draw the lessons learned.
- We set up a travelling photo exhibition with images from the festival to continue promoting zero food waste!
- We encourage businesses to carry out initiatives to avoid throwing away food that spoils.

## 2.20 Stamping with pomegranates

|                 |   |
|-----------------|---|
| <b>Audience</b> | 2 y/o and older   |
| <b>Time</b>     | 60 minutes  |
| <b>Space</b>    | Indoors   |
| <b>Goals</b>    | (1) Experiment with the peel of fruits.<br>(2) Broaden the knowledge of autumn fruits.<br>(3) Promote healthy and sustainable eating. |

|                    |   |
|--------------------|---|
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Talk about the origin of the pomegranate.</li> <li>➤ Touch, smell, observe, peel and taste a pomegranate.</li> <li>➤ Hand out sheets of paper and paint to draw in the shape of the pomegranate peel.</li> </ul> |
|--------------------|---|

### Carrying out the activity

The pomegranate has had different meanings throughout the history of art. The Greeks represented it as an attribute of Hera and Aphrodite; in Asia, the image of an open pomegranate symbolises expressing one's inner desires.

Here is a simple activity you can carry out in an art class, in the educational leisure centre, or at home with your family. You can have a lot of fun with it!

After talking about the origin of the pomegranate, touching it, smelling it, peeling it and tasting it, we hand out sheets of paper and paint for the children to make drawings in the shape of the pomegranate peel.

What peculiar shapes will emerge? What will they represent, and what story will they tell? With imagination, anything is possible!

### Materials:

Sheets of paper, pomegranate shells, utensils and paint or natural dyes.

## 2.21 Making paint from beetroot

|                    |  |
|--------------------|--|
| <b>Audience</b>    | All ages   |
| <b>Time</b>        | No fixed duration  |
| <b>Space</b>       | Indoors  |
| <b>Goals</b>       | <ul style="list-style-type: none"> <li>(1) Experiment with beetroot.</li> <li>(2) Work on creativity.</li> <li>(3) Promote sustainable and healthy eating.</li> </ul>  |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Talk about beetroot (winter season, importance of seasonal and local food consumption).</li> <li>➤ Boil the beetroot (the less water, the more intense the ink).</li> <li>➤ Remove the beetroot and use it for cooking.</li> <li>➤ Save and let the dyed water cool.</li> <li>➤ Distribute it and paint.</li> </ul> |



### Carrying out the activity

Beetroot is one of the vegetables of the winter season, and it is very important to eat seasonal and local food.

We suggest that, when you want to eat this vegetable, you take the opportunity to paint with its intense colour!

### How do you make it?

Boil the beetroot (then use it for cooking a fun and tasty recipe!).

Once cooked, don't throw away the water. Consider that the less water you use, the more the beetroot will be coloured.

Remove the beetroot and reserve the water - wait for it to cool before using it!

If you have some beetroot that is not fit for consumption, you can also cook it, mash it and use it to thicken the dyed water.

And now you have your natural paint ready to use!

From here, you can let the children express themselves freely with the natural paint and tell them that some vegetables have these dyeing properties. Are you up for it?

We can also create other natural dyes with spinach, turmeric or red cabbage.

## 2.22 What type of broccoli is it?

|                    |   |
|--------------------|---|
| <b>Audience</b>    | 6 y/o and older   |
| <b>Time</b>        | No fixed duration   |
| <b>Space</b>       | Indoors   |
| <b>Goals</b>       | <ul style="list-style-type: none"><li>(1) Experiment with broccoli.</li><li>(2) Identify the different types of broccoli.</li><li>(3) Develop touch and smell.</li><li>(4) Promote sustainable and healthy eating.</li></ul>  |
| <b>Description</b> | <ul style="list-style-type: none"><li>➤ Talk about broccoli (winter season, importance of eating seasonal and local foods, properties, ideas on how to eat it and benefits).</li><li>➤ Introduce the different types of broccoli (familiarisation of children). Below is the list of broccoli varieties.</li><li>➤ Form groups and blindfold one member. Another member will put a piece of a broccoli variety before the blindfolded child, who will have to guess which variety it is by touch and smell.</li></ul> |

|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>➤ If the blindfolded child cannot guess, the others can provide clues (cooperation).</li> <li>➤ Tasting of each variety of broccoli (association of taste and smell).</li> </ul> |
|--|---|

### **Pre-primary school or infant learning community**

First, we propose an introduction to the vegetable, describing its properties and benefits and providing ideas about how to consume it.

Once the children have become familiar with the different varieties of broccoli, it is time to see if they are able to identify them blindfolded.

The activity can be carried out in pairs, in groups or in one large group depending on our needs and available time. The different types of broccoli that can be worked on in this activity are:

- white broccoli or cauliflower
- romanesco
- broccoli
- baby broccoli
- Chinese broccoli.

One of the children covers his/her eyes, and other child places a piece of broccoli before them. The blindfolded one has to find out which variety it is by touch and smell. If they cannot do so, the other may provide clues to help, thus turning the game into a cooperative exercise. In this way, by immersing children in the world of broccoli, they can learn first-hand about its different varieties and characteristics.

We could then steam them all and taste them, associating taste with touch.

### **Primary school or children learning community**

For the children in the first four years of primary school (6-9 y/o), after the activity of discovering the different types of broccoli, we can play a game of questions in teams about the knowledge and differences that they gather about broccoli.

In addition, we can further investigate different sustainable recipes and work on the importance of consuming local and seasonal products.

## 2.23 The broccoli puppet

|                    |  |
|--------------------|--|
| <b>Audience</b>    | 3 - 10 y/o   |
| <b>Time</b>        | No fixed duration  |
| <b>Space</b>       | Indoors  |
| <b>Goals</b>       | <ul style="list-style-type: none"><li>(1) Develop fine motor skills.</li><li>(2) Work on creativity.</li><li>(3) Promote sustainable and healthy eating.</li></ul>   |
| <b>Description</b> | <ul style="list-style-type: none"><li>➤ Prepare the following materials:<ul style="list-style-type: none"><li>- A mismatched sock (green, white or lilac).</li><li>- Tissue paper, crepe paper or coloured paper (green, white or purple).</li><li>- Glue or silicone.</li></ul></li><li>➤ Follow the steps below:<ul style="list-style-type: none"><li>- make small balls of paper in the same colour as the sock;</li><li>- attach the balls to the top of the sock with glue or silicone to form the broccoli flowers;</li><li>- make a funny face and arms out of paper or fabric.</li></ul></li></ul> |

### Carrying out the activity

Interacting with puppets is a good way for children to feel comfortable. It will allow us to work on sustainable and healthy eating more enjoyably.

### Pre-primary school or infant learning community

First, we will look for a mismatched sock, preferably green, white or purple, like the colours of the different varieties of broccoli.

Then, we will make "balls" with paper of that colour to represent the broccoli flowers. We can use whatever kind of paper is most convenient for us.

Then attach the balls to the top of the sock to form the broccoli florets. Use white glue or silicone (with the educator's help). When it has dried well, all that's left to do is to make a funny face with paper or a piece of cloth, and now it's time to make eyes and a fun mouth! And, if we want, we can also make arms out of the same materials.

Finally, we will share our creations with our classmates, and we will be able to remember the different types of broccoli.

## Primary school or children learning community

In the case of the primary education, children can also create short theatrical stories with the puppets, playing with improvisation and creating brief sustainability-themed sketches.

### Materials

A mismatched sock (green, white or lilac), tissue paper, crepe or coloured paper (white, green or purple), glue or silicone, decoration materials, etc.

## 2.24 The carrot dummy

|                    |   |
|--------------------|---|
| <b>Audience</b>    | 5 - 12 y/o  |
| <b>Time</b>        | No fixed duration   |
| <b>Space</b>       | Indoors   |
| <b>Goals</b>       | <ul style="list-style-type: none"><li>(1) Value resources.</li><li>(2) Avoid the throwaway culture.</li><li>(3) Encourage healthy and sustainable eating habits.</li><li>(4) To develop fine motor skills.</li></ul>  |
| <b>Description</b> | <ul style="list-style-type: none"><li>➤ Prepare the following materials:</li><li>➤ Green and orange cloth (no longer in use).</li><li>➤ Hot glue.</li><li>➤ Needle and thread.</li><li>➤ Follow the steps below:</li><li>➤ Draw and cut out two isosceles triangles from orange fabric with two long sides and one short side. Glue or stitch the two triangles together on equal sides.</li><li>➤ Fill the body of the carrot with fabric or foam rubber.</li><li>➤ Cut out a circle of orange fabric and sew or glue it, as a cover, to the opening on the uneven side of the triangles.</li><li>➤ Cut green fabric to make leaves and glue them to the top.</li><li>➤ Use black and white fabric to make eyes and a mouth for the carrot. You can also paint them with a felt-tip pen.</li></ul> |

### Carrying out the activity

Approaching learning through this methodology will make it easier for children to be more motivated and learn while they play.

Therefore, we propose the creation of a soft toy in the shape of a carrot made from old cloth: we will reuse this material and give it a pedagogical use.

### **Pre-primary school or infant learning community**

To make the soft toy, first, draw two isosceles triangles on a piece of orange fabric and cut them out to make the body of the carrot. Join the two triangles by sewing or gluing the longer sides together and leaving an opening formed by the short sides.

Next, fill the body of the carrot with fabric or foam rubber. Then, cut out a circle of orange fabric and glue or sew it to close the opening. Finally, cut out strips of green cloth to make the leaves and glue them or sew them to the orange circle at the top of the carrot.

As a complement, we can liven up our cuddly toy by adding eyes and a mouth made of white or black fabric, and we'll have our cuddly carrot toy!

### **Primary school or children learning community**

In primary school, we propose introducing the debate on the waste of the ugliest carrots. The current consumer system rejects these carrots for aesthetic reasons, i.e. those that do not meet the dominant standards of beauty are discarded for this reason.

We can make different stuffed toys representing bigger, smaller, wrinkled, twisted carrots. Briefly put carrots in different shapes to raise awareness about using all carrots regardless of their appearance.

Finally, we can share and explain to our classmates why we made each carrot along the lines of the debate. We can talk about the canons of food beauty.

### **Materials**

An old orange and green fabric, hot glue, needle and thread, decorating tools, etc.

### **Assessment**

Use the process of creating the carrot to explain to the children the parts and properties of this vegetable.

## **2.25 Stop wasting food**

|                 |   |
|-----------------|---|
| <b>Audience</b> | 9 - 16 y/o  |
| <b>Time</b>     | No fixed duration   |
| <b>Space</b>    | Indoors   |
| <b>Goals</b>    | (1) Bring participants closer to the food waste problem to stimulate them to act to transform this reality.<br>(2) Develop a service-learning project in the field of the agri-food system. |

|                    |   |
|--------------------|---|
|                    | (3) Act on the real needs of the environment.<br>(4) To cooperate with other entities and become aware of the importance of joining forces for the common good.   |
| <b>Description</b> | <ul style="list-style-type: none"> <li>➤ Understanding the concept of waste</li> <li>➤ Decide on the service action together with the group</li> <li>➤ Carrying out the service</li> <li>➤ Closing, reflection and celebration</li> </ul> |

### Carrying out the activity

- 1) Learn about the concept of food waste, its magnitude and its consequences in terms of environmental impact. To do this, we propose visiting a municipal market and, in groups, carrying out a brief survey:

Examples of question for the survey:

– How much food do you think an average person in Catalonia wastes per year?

- A) 2 kg
- B) 10 kg
- C) 35 kg

– Do you think you waste more or less than the average population?

- ☐ Less
- ☐ More

– Have you ever seen a carrot like this in the market? (We show the image of a carrot considered "ugly").

- ☐ Yes
- ☐ No

– Are you willing to buy a carrot like this?

- ☐ Yes
- ☐ No

– Is there any difference between the best-before date and the expiration date?

- ☐ Yes. I'll explain it right away.
- ☐ Yes. But I don't know the difference.
- ☐ No. They are the same.

– Can you give me some tips or advice on how to avoid wasting food (qualitative):

With the results of the surveys, we will reflect on people's perceptions of waste. We will compare it with the official data we have seen above. We will also look at the tips and tricks provided by the respondents.

This stage closes by reflecting on what we learned, the problems identified, personal and collective motivations for action, etc.

2) Decide on the service action. In other words, identify the improvement we wish to make in the environment.

As a result of the awareness-raising work carried out in the first stage, the children come up with different interventions aiming at acting to improve the problem of waste.

Here are some examples of interventions:

- Communication campaign on food waste: posters, letterboxes, stalls, etc.
- Playful talk or workshop on food waste for smaller groups or families.
- Handing-out leaflets on the importance of buying in bulk (reducing packaging and avoiding unnecessary purchases).
- Production of candles with recycled oil and subsequent sale
- Collection of food that is about to go out of date and a food stall to make the most of it, etc.
- At this stage the group organises itself, draws up a work plan and distributes the tasks.

In addition, we may contact potential partners and agree upon commitments related to our activities. For example, if we carry out a communication campaign, we will need to explain the project to the shops and seek their collaboration. If the objective is to prepare workshops to be carried out with other groups in the centre or surrounding centres, we will have to talk to the educational teams, etc.

Remember the spaces for reflection to evaluate the work process and become aware of what we have learned.

3) Performing the service

It will be convenient to anticipate the skills and abilities requiring previous training to perform the service successfully. It is a very enjoyable stage because the children experience the action and see its impact.

4) Closing and celebration

We dedicate a moment to recognition. There is nothing more motivating and activating for future actions than celebrating successes and receiving recognition from others.

We set aside time for a good evaluation and closure of the project to identify significant learning, values and the usefulness of what has been done. Generating awareness of global and committed citizenship is an objective that we should always keep in mind.



### 3— SUMMER PROGRAMME

#### Pedagogical proposal

An estimated 18 500 000 tonnes of carrots are produced worldwide, of which 25-30%, some 5 550 000 tonnes, never make it to the shops because they do not pass the "beauty standards". The average use time of a plastic bag is 15 minutes, while it takes hundreds of years to degrade. It is estimated that, over a lifetime, a person consumes an average of 7 550 litres of milk, 4 000 kg of meat, and about 2 000 kg of sugar, and showers about 7 200 times, consuming almost 1 million litres of water.

A person has about 104 390 dreams in a lifetime and infinite opportunities to imagine such dreams and act to fulfil them. One of our dreams is to work to perpetuate the world and pass it on to future generations. For this reason, we share with you this opportunity to work and deepen on sustainable and healthy food as a starting point for the summer educational proposal.

In the face of this reality, we need to build a society that is more aware and responsible for itself and the planet where we live.

"the new education that human beings need, that the life of the planet needs, is an education involved in ecosocial transformation that helps to reveal a renewed worldview of the universe and an ecosocial ethic where people develop their capacities and skills fully, live harmoniously in and with the biosphere, care for the links with other people and living beings, all of which gives access to the ultimate goal of education: to be happy..

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**"... the new education that human beings need, that the life of the planet needs, is an education involved in ecosocial transformation that helps to reveal a renewed worldview of the universe and an ecosocial ethic where people develop their capacities and skills fully, live harmoniously in and with the biosphere, care for the links with other people and living beings, all of which gives access to the ultimate goal of education: to be happy."**

*Antropoceno: tiempo para la ética ecosocial y la educación ecociudadana - RES. Revista de Educación Social (eduso.net)*

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Eco-civism, as a process of reflection and public awareness that helps us to work on social, coexistence and emotional habits. One new ethics, necessary to modify individual and social attitudes and behaviours that favour an eco-social balance between individuals and nature.

This project seeks to create a positive link between children, teenagers and nature, to discover the environmental impact of the food system, to be aware that we are what we

eat, and to learn about biodiversity and the sea to commit ourselves to a more respectful society.

## Goals

- (1) Act and educate in the awareness that what is healthy for us is also good for the planet's health and sustainability.
- (2) Act and educate for individual and collective action towards food change.
- (3) Discover the world and the knowledge of the self through the connection with nature.
- (4) Offer educational and playful proposals in which the natural environment is the starting point to stimulate the expression and imagination of children in the construction of their own games, learning and knowledge.
- (5) Get to know, appreciate, value, love and protect nature and its elements during leisure time as an alternative to electronic leisure.
- (6) Stimulate children's imagination, fantasy, and creativity through nature and their immediate environment.
- (7) Create a pleasant, safe and healthy space for coexistence that stimulates the feeling of bonding and belonging, both to the group and to the natural environment.
- (8) Encourage communication, difference, diversity, plurality and mutual respect, identifying ourselves with nature and our relationship with it.

## Methodology

We understand education in leisure as a space in which the child and the adolescent are the protagonists. Each person is a fantastic, wonderful, and unrepeatable being. The adult is one more point of reference who accompanies and favours the well-being and autonomous development of the infants.

That is why this proposal treats the child as a whole and suggests a participative and globalising methodology. We understand child participation as a right enshrined in the Convention on the Rights of the Child (1989), as a participation in a permanent relationship with adults and a process of mutual learning.

This project provides a framework for dialogue where communication between the children and the educational team is the axis of our intervention. A project that helps develop autonomy and spaces for coexistence to generate emotional well-being.

## How do we put this into practice?

Through the four elements that represent the four known forms of matter -water, earth, fire and air- we will discover the different behaviours of nature, aiming at building a new

void, ether or idea, a new planet or a fifth element understood as a global entity. We do it by observing, thinking, creating and feeling to transform.

Paulo Freire (2001) affirms that educational spaces must facilitate learning to reflect and act to transform reality. During this adventure, the participants will have an opportunity to intervene and impact each of the four elements of nature, to modify their environment and build a more civic and sustainable planet.

We offer three proposals oriented at each age group: pre-primary, primary and secondary school. The educational team will have to adapt and specify these proposals according to the group's interests, the educational objectives pursued and the spaces and time available, among other things, to design the most appropriate proposal.

### 3.1 – PRE-PRIMARY SCHOOL

#### **Storyline:**

*The four elements and our planet are suffering. We are facing a situation of collapse. We have lost the consistency of what is underground and mysterious, the calmness of the sound of water, the lightness of the air, the return to the warmth of fire... SOS, alert, this is an emergency call!*

*We are looking for boys and girls like you, eco-heroines and eco-heroes, to be part of the little activist's gang. During this adventure, we will meet different characters suffering the consequences of the planet's imbalance. They need our help to recover all their powers and continue working for a healthier and more sustainable world.*

#### **Methodology and aim:**

Following the methodology of the four classic elements (earth, air, fire and water) and the planet, this proposal of playful activities allows children to observe, think, create and feel learning about the origin of food, the environmental impact of the food system, biodiversity and the sea, and motivating their commitment to building a more sustainable and healthy tomorrow.

#### **Activities**

##### Activities related to the element earth

**(1) Germinating seeds:** Observing how a plant grows from the seed we have germinated makes us see nature in a fuller and more conscious way.

Materials: seeds, napkins, jars, soil, fertiliser, etc.

**(2) Earth gymkhana:** A gymkhana to think and connect with the earth and its elements. Through different textures and natural materials that grow in the soil, we will connect with the nature surrounding us.

Materials: seeds, napkins, jars, soil, fertiliser, etc.

**(3) Insect hotel:** Many animals around us need shelters and nests, as it is difficult for them to take refuge in cities full of buildings. Insects are essential to promote biodiversity, pollinate flowers and prevent pests that may threaten the garden we have created. Thus, we encourage you to build hotels where insects can live and rest.

Materials: Recycled wood, glue, pine cones, branches, leaves and stems, bark, tiles, cardboard, small bricks, containers with water.

**(4) Aromatic plants:** Activity to introduce children to aromatic plants in our environment. We can organise an outing in the area or carry out a small collection.

#### Activities related to the element air

**(5) I need some air:** Simulation game included in Guia Hàbitat – Activity guide for environmental education, by Institut d'Educació. [Dóna'm un respir - Hàbitat \(escolesxesc.cat\)](https://www.escolesxesc.cat)

**(6) Air Gymkhana:** A gymkhana designed to promote the reduction of harmful gas emissions produced by the combustion of car engines and other personal vehicles, among others. These may be creative activities, such as proposing challenges to be solved in groups. How many different and creative ways could you cross from here to the other side of the playground?

**(7) Air kites:** Build kites, make them fly, and fill the sky with cheerful colours.

Materials: Recycled material, branches, string, and dyes to paint and personalise the kite.

**(8) A day on wheels:** We propose a day on wheels: an activity to connect with air and not pollute it, consisting of an outing in the surrounding area where each child can go on a non-motorised vehicle (bicycle, scooter, roller skates, etc.).

#### Activities related to the element fire

**(9) Visit to the market:** The market is full of colours, smells and other sensations. A whole world to observe! Fresh produce, cooked or semi-prepared foods await the neighbours who will soon arrive to pick them up. In the market, people from the village or the neighbourhood have been meeting to shop for many years. We suggest a visit to the market, an outing to see the infinite number of things you can get there!

**(10) Fire gymkhana:** We propose you designing a sort of Olympics games where you have to pass the flame in relays and keep it burning no matter what. You can build your own torch with coloured paper and materials that simulate fire.

**(11) Sustainable cooking:** To carry out this dynamic, we must choose, among the whole group, which meal we want to prepare. Once we have decided, we will list all the necessary ingredients, plan how to organise ourselves that day, etc.

When presenting the activity, we tell the children that the food we are going to prepare must be healthy and sustainable. We must consider the nutritional balance, the quantities, where to buy the ingredients, etc.

**(12) The bonfire:** We eat, sing and talk around the campfire. The warmth of the fire invites us to spend hours and hours watching the sparks and flames while we share great moments. We propose an activity related to social relations and cohesion to weave and strengthen bonds that will help us to advance the children's emotional learning and personal well-being. In a circle, we will pass around a ball of wool while we say what we like about a specific person. Then, to form the wool ball again, we will do the same by mentioning something we enjoy doing as a group. A variant of the activity could start by saying things we don't like happening to us and then redo the ball of yarn by naming the positive things that happen to us as a group. Thus, we can share, feel and get closer to our partners.

#### Activities related to the element water

**(13) Evaporation of water:** An activity for children to observe and wonder about water and global warming. We can place a jar of water on the ground, water around it (and let the direct sunshine on it), leave a piece of ice next to it, etc. Through the different states of water (solid, liquid and gas), we will talk about the evaporation of water and be able to relate this topic to other natural phenomena that occur around us.

**(14) Water gymkhana:** Drinking water is a precious and scarce commodity. Not everyone in the world has access to it. Moreover, with their commercial and productive activities, humans are the main culprit in the pollution of large bodies of water. Seas and oceans have become rubbish dumps, and we want to put an end to this problem!

The group will design a gymkhana consisting of water activities that do not generate waste (avoid balloons, non-reusable plastic materials, etc.). Activities should allow excess water to be collected and used to water the garden or plants in the area. For example, we can play games with sponges, old clothes, watering cans, and recyclable buckets to refresh ourselves without producing unnecessary waste.

**(15) Rain dance:** Some ancient civilisations in the Americas created ceremonial dances to ask the gods to send rain to irrigate the fields for good food crops. In addition, rain was also believed to help cleanse and purify the earth of evil energies or spirits.

Water is necessary for life, so without it, we could not survive. In addition, in summer, our region suffers long periods without rain, which makes it hard to maintain seasonal crops. We propose that you create your own rain dance. You can invent the steps, the music, the costumes, etc. You can use percussion instruments or your own body (body percussion)! You can dance whenever you think it's necessary: to welcome the day or as a farewell, before or after breakfast; it can be your little ritual in the education centre!

**(16) Water, life, diversity:** Without water there is no life, and without life there is no diversity. We propose an activity to feel and capture the diversity that surrounds us. Together we will create a large mural/collage of all those things that give us life or make it more beautiful, happy and diverse. They can be animals, friends, family, food, words. Through this activity, we will be able to see the great variety of elements that we need and make us happy. And how each one of them is very important.

#### Activities related to the planet

**(17) The wish tree:** We propose to create a wishing tree. The children can write on a piece of paper or cardboard a wish related to nature, the planet, the environment, the children, the family, the neighbourhood. And we will hang them on our wishing tree.

Each day we can share some of the wishes and imagine and talk about what we could do to help make them come true.

**(18) My planet:** We propose an activity to create a space to reflect and share with classmates how we want our planet to be. The children should look carefully at their environment and bring or choose each one an element that they think describes or identifies our planet. We will then share our reasons for choosing it, its characteristics, etc. We can also ask ourselves: how is it similar to the others; how is it different; could we live without it?

**(19) The vegetable garden:** We propose you create your own vegetable garden, or continue and expand the one you already have at school. To carry out this activity, think about where you want to place your vegetable garden, design and plan what you want to plant and how you want to do it. In addition, if no plot of land is available, the children may build the pots or terraces.

Materials: a bed or plot of land, pots, substrate, tools for planting and working the soil, seedlings or seeds.

**(20) Sustainability campaigns:** After rethinking what we want our planet to be like, imagining and designing it, it's time to spread the word! We will decide what we want to promote and collectively create posters or other elements for our sustainability campaign. If you wish, you can also hang them up in the school for everyone to see. You can also contact the town hall and the radio station in the village or neighbourhood to spread the word as much as possible.

## 3. 2 – PRIMARY SCHOOL

### **Storyline:**

*The world is transforming before our eyes, giving rise to unprecedented challenges and opportunities. Global problems demand urgent change in our ways of thinking and lifestyles.*

*We are in a decisive decade. We are living a global climate, social and planetary health emergency that affects all forms of life and severely compromises present and future life. And to achieve this change, we need you!*

*Throughout this adventure we will learn about the impact of human activities on nature and see how our individual actions are shaking the four elements that sustain our planet. We have a great challenge ahead of us: to balance our planet. Will we succeed? We will be accompanied by different elements that will be the lever of change of this planetary system!*

*¿ What actions do we humans take? We invite you to reflect on our everyday deeds to improve the sustainability of our planet.*

*If we overcome the challenges, we can recover different objects that will help us stabilise the four elements and transform our planet.*

### **Methodology and aim:**

Following a challenge-based methodology, the aim is to offer activities that allow children to observe, think, create, and feel learning about the origin of food, the environmental impact of the food system, biodiversity and the sea, and to encourage their commitment to building a more sustainable and healthy tomorrow.

### **THIS SUMMER'S CHALLENGES:**

#### **(1) EARTH. Food waste:**

An estimated 89 million tonnes of food are wasted in the EU each year, equivalent to 179 kg per person per year. This data suggests that each person wastes about 1/2 kg of food daily.

At the summer camp, we all have breakfast, and many of us also have lunch, representing 1/3 of our food. Thus, each child at the summer camp would generate around 200g of waste per day.

**Challenge:** Our goal is to halve the food waste we produce at the summer camp in one week.

**(2) AIR. Ecological footprint:**

Superstores and other large markets not only consume large amounts of energy for their maintenance (cold storage, lighting, air conditioning, etc.), but their carbon footprint is even higher when it comes to transport.

**Challenge:** This challenge aims to calculate our ecological footprint. If our footprint (shoe) does not exceed 3.92 hectares/inhabitant, we will have passed the challenge for the week! If, on the other hand, we exceed that amount, we must do everything we can to reduce and overcome the challenge.

**(3) FIRE. Slow Food and local produce:**

The concept of local produce emerged with the Slow Food movement, in Italy, by the end of the 1980s. It is a movement that revolves around eating with attention, valuing quality and considering the origin of raw materials, the ingredients, and how they are cooked.

**Challenge:** In this challenge, we propose you list 50 local products (that are part of our diet), mention where they come from, and make sure they are local products (transported less than 100 km).

**(4) WATER. Plastics and recycling:**

By 2050 there will be more plastic in the oceans than fish. Fifty per cent of the plastic we use globally is single-use plastic, and we only recycle an estimated 9% of all the plastic used worldwide. The rest is dumped in the seas and oceans, which receive around 10,000 tonnes of plastic, equivalent to 12 kg per person, every year. It takes more than 100 years for plastic to degrade, and some 100 000 marine animals die annually from it.

**Challenge:** This challenge consists in giving a second life to 12 kg of plastic.

**(5) EARTH. Species at risk of extinction:**

Eighty-seven per cent of the 352 000-plant species that produce flowers and fruits (angiosperms) are at least partially dependent on pollinating animals for reproduction. Pollination enhances the biodiversity of our ecosystems, provides food to other living things, and helps crops yield better and more productive. Just think that 75% of the food consumed by humans depends on pollination. Presently, 40% of pollinating invertebrates, especially bees and butterflies, are at risk of extinction. Factors contributing to this decline include using certain pesticides and some intensive agricultural practices that use products harmful to bees. This challenge consists in giving a second life to 12 kg of plastic.



**Challenge:** One solution to fight the danger of extinction is to install insect hotels throughout the municipality. These structures will serve as a shelter and breeding place for pollinating species such as bees.

**(6) AIR. CO<sub>2</sub> emissions:**

Much of the food we consume has travelled long distances to reach our plates. According to a report by the Friends of the Earth association, in collaboration with the universities of Seville, Vigo and Pablo Olavide, in 2011, Spain imported around 25 million tonnes of food. Such food travelled, on average, around 4 000 km and generated more than 4 million tonnes of CO<sub>2</sub> emissions.

**Challenge:** Throughout the day, we eat around 20 different products. In this challenge, we have to calculate the distance travelled by all the food we eat in one day and the CO<sub>2</sub> emissions that this entails.

**(7) FIRE. Food surplus:**

Everyone has the right to healthy and sustainable food, but not everyone has access to it. While kilos and kilos of food are thrown away every day, we have people around us who are very hungry.

**Challenge:** This challenge's goal is to calculate the food surplus of the children in the summer camp and their families.

**(8) WATER. Message in a bottle:**

In the old days -and in some specific areas, maybe this is still the case- milk was sold in glass bottles. In some places, the milkman even distributed it directly to the houses. Next day, when he went to drop off the day's milk, he would collect the empty bottles and refill them.

This kind of distribution did not generate daily waste because the bottles were recycled after some time. In particular, glass has a circular recycling chain, i.e. we can recycle 100% of it.

So, what can we do to reduce the waste we produce? What consumption alternatives do we have? Can we use non-plastic packaging, reuse it, and prevent it from ending up in the sea?

**Challenge:** This challenge's goal is to rethink 30 new ways of storing, packaging, transporting, etc.

### 3.3 – SECONDARY SCHOOL

For the teenagers, we propose a summer camp based on the Service Learning methodology (SL). The Centre Promotor APS [SL Promotion Centre] defines the SL proposal as one that "integrates service to the community with the learning of contents,

abilities, skills, or values". We may say that SL links pedagogical intentionality with solidarity intentionality.

We speak of a circular relationship between learning and service. "Learning improves service to the community because it gains in quality, and service gives meaning to learning because what is learned can be transferred to reality in the form of action".

We will therefore base ourselves on an educational proposal that will combine these two processes. With the SL proposal, participants will live experiences through the real needs of the environment aiming at improving it. We will bring teenagers closer to reconnecting with nature through real projects in our immediate environment.

### **Methodology and aim:**

Following the SL methodology, we propose activities based on the four elements and the planet, so that young people learn about the origin of food, the environmental impact of the food system, biodiversity and the sea, and encourage their commitment to building a more sustainable and healthy tomorrow.

### **Proposal**

It is a ludic proposal based on experience, responsibility, research, reflection and action. It consists of young people deciding and getting involved in an activity to conserve the green spaces around them (school, municipality, etc.).

To carry out this activity, first of all, the young people will have to find out about the food system. Then, they will suggest interventions for improving the food system, carry out such interventions, and launch a publicity campaign to promote good practices and care for the food system. Finally, they will reflect on the activity and evaluate it.

We propose four SL activities. One related to food production (e.g. vegetable gardens), a second one to consumption and gastronomy (e.g. sustainable cooking), a third one to agri-food chains (e.g. local and seasonal food) and the fourth to packaging and waste (e.g. marine litter).

## 4– FURTHER EDUCATIONAL RESOURCES

Here is a list of resources, websites, reports, etc., from organisations involved in building a more sustainable and healthy food system. They can be used to expand and complement the resources already offered in this guide:

### Websites

- AGENDA 2030 AND SUSTAINABLE DEVELOPMENT GOALS (SDGs). Department for Environment Affairs. [Agenda 2030 i els Objectius de Desenvolupament Sostenible. Medi Ambient i Sostenibilitat \(gencat.cat\)](#)
- BARCELONA CITY COUNCIL: 2021 Barcelona World Capital of Sustainable Food. [Home | Sustainable Food \(alimentaciosostenible.barcelona\)](#)
- JUSTICIA ALIMENTARIA ASSOCIATION. [Justicia Alimentaria • Organización No Gubernamental de Cooperación](#)
- CHAIR IN AGROECOLOGY AND FOOD SYSTEMS. University of Vic. [Chair in Agroecology and Food Systems | UVic](#)
- APS PROMOTIONAL CENTRE. [Aprenentatge Servei | Centre promotor d'Aprenentatge Servei](#)
- DEPARTMENT OF HEALTH. Education and health programmes. [Educational centers. Department of Health \(gencat.cat\)](#)
- ALÍCIA FOUNDATION. [Alícia Foundation \(alicia.cat\)](#)
- CRAM FOUNDATION. Centro de protección de la biodiversidad marina. [Conoce el CRAM](#)
- FOOD BANK FOUNDATION. [FUNDACIÓ BANC DELS ALIMENTS, Barcelona](#)
- ESPIGOLADORS FOUNDATION. [Espigoladors | We fight to stop food waste and losses](#)
- GASSOL FOUNDATION. [Gasol Foundation | Working to Eradicate Childhood Obesity](#)
- GREENPEACE. [Greenpeace International - Greenpeace International](#)
- WORLD HEALTH ORGANIZATION (WHO). [World Health Organization \(WHO\)](#)
- ORGANISATIONS FOR GLOBAL JUSTICE (LAFEDECAT). [Lafede.cat - organitzacions per a la justícia global](#)
- INTERNATIONAL FEDERATION FOR HUMAN RIGHTS (FIDH). [International Federation for Human Rights \(fidh.org\)](#)
- UNITED NATIONS (UN). [Health | United Nations](#)
- FOOD AND AGRICULTURE ORGANIZATION (FAO). [Home | Food and Agriculture Organization of the United Nations \(fao.org\)](#)

- SOBERANIA ALIMENTARIA MAGAZINE. [Soberanía Alimentaria, Biodiversidad y Culturas - Revista Soberanía Alimentaria • Biodiversidad y culturas \(soberaniaalimentaria.info\)](http://soberaniaalimentaria.info)
- UNITED NATIONS EDUCATIONAL, SCIENTIFIC, AND CULTURAL ORGANIZATION (UNESCO). [What UNESCO does on health and well-being education](http://unesco.org)
- UNITED NATIONS INTERNATIONAL CHILDREN'S EMERGENCY FUND (UNICEF). [Health | UNICEF](http://unicef.org)

## Reports and guides

- MENJAR CANVIA EL MÓN [HOW WE EAT CAN CHANGE THE WORLD]. Pedagogical programme by Fundesplai, including many activities and educational resources for healthy and sustainable food. [Menjar canvia el món | Un projecte de la Fundació Catalana de l'Esplai \(fundesplai.org\)](http://fundesplai.org)
- ALIMENTACCIÓN. Programme led by Justicia Alimentaria and Hegoa. Here you will find many online educational resources for children, youth, families and educational teams. [Alimentación | Red educativa por la sostenibilidad alimentaria \(redalimentacion.org\)](http://redalimentacion.org)
- FOOD, PLANET, HEALTH: Healthy Diets form Sustainable Food Systems. EAT-Lancet Commission, 2019. This report is the first attempt to establish universal scientific goals for the food system applicable to all people and the planet according to two parameters of the global food system: final consumption (healthy diets) and production (sustainable food production). [EAT-Lancet Commission Summary Report - EAT \(eatforum.org\)](http://eatforum.org)
- SEASONAL PRODUCE CALENDAR. Here you will find the calendar for seasonal fruit, vegetables, and fish, by the Generalitat of Catalonia. [Calendari de productes de temporada de fruites \(gencat.cat\)](http://gencat.cat)
- FUN AND HEALTHY HOLIDAYS. Tips and recipes for children's parties. Canal Salut, Generalitat of Catalonia. [Fun and healthy holidays. Health Channel \(gencat.cat\)](http://gencat.cat)
- GUÍA HÀBITAT. A practical guide including activities for environmental education. [Home - Hàbitat \(escolesxesc.cat\)](http://escolesxesc.cat)
- GUÍA SIN MALA ESPINA. A guide to the problem of overexploitation of seafood. [\[Guía\] Sin mala espina • Ecologistas en Acción \(ecologistasenaccion.org\)](http://ecologistasenaccion.org)
- SERVICE LEARNING GUIDE FOR HEALTHY, FAIR AND SUSTAINABLE FOOD. CENTRE PROMOTOR D'APRENENTATGE SERVEI. [Aprenentatge Servei per a una alimentació sana.indd](http://aprenentatge Servei per a una alimentació sana.indd)

- LET'S PLAY IN THE ORCHARD. Magnifique guide to games for environmental education in pre-primary and primary school vegetable gardens, by Sara Buscà. [Guia Juguem a l'hort - Fedesplai \(fundesplai.org\)](http://fundesplai.org)
- KAIDARA; Educational resources for global citizenship. Oxfam Intermón. [Kaidara - Recursos educativos para una ciudadanía global](#)
- PLAYFUL SUITCASE, AGRO-JOCS. Here you will find numerous activities and games by Agroviva, the website created by the Unió de Llauradors i Ramaders of València. [MALETA LÚDICA -AGRO JOCS- \(chil.me\)](http://chil.me)
- SMALL CHANGES TO EAT BETTER, Department of Health of Catalonia. Reference guide on healthy eating. ["Small changes to eat better." Health Channel \(gencat.cat\)](#)
- HEALTHY FOOD PYRAMID. Includes the healthy food plate. Department of Health of Catalonia. [Piràmide de l'alimentació saludable. Canal Salut \(gencat.cat\)](#)
- HEALTHY RECIPES. Recibe finder. Health Channel, Generalitat of Catalonia. [Healthy recipes. Health Channel \(gencat.cat\)](#)
- EDUCATIONAL MATERIALS AND RESOURCES RELATED TO VEGETABLE GARDENS, AGROECOLOGY AND FOOD. Generalitat of Catalonia. [Material educatiu. Producció agroalimentària ecològica \(PAE\). Generalitat de Catalunya \(gencat.cat\)](#)
- UNESCO (2020). EDUCATION FOR SUSTAINABLE DEVELOPMENT. ROAD MAP. [UNESCO roadmap for implementing the Global Action Programme on Education for Sustainable Development - UNESCO Digital Library](#)
- A JOURNEY TO THE CENTRE OF THE FOOD THAT MAKES US SICK. "Dame veneno" report, by VSF Justicia alimentaria global. [Dame veneno - Justicia Alimentaria](#)

## Other didactic resources

- [Didactical proposal for treating food sovereignty in Professional Development studies](#). This proposal offers five modules comprising key topics for cross-cutting food sovereignty in Professional Development studies. Here you will find the following contents:
  - Module 1. Agroecology vs. Agroindustry
  - Module 2. The food transition
  - Module 3. Advertising and food
  - Module 4. Planetary diet
  - Module 5. Women and food sovereignty.

Developed by Justicia Alimentaria. [Unitat Didàctica L'aurantiCuinant](#)  
[A5 impressió.pdf \(redalimentacion.org\)](#)



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