

# Leftover Challenge – User Guide for Teachers



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## About the Project

### 1. Why Food Waste Matters

Food waste is one of the most pressing sustainability issues today. Globally, about one-third of food produced for human consumption—roughly 1.3 billion tons per year—is lost or wasted (Schanes et al., 2018). This loss is not just about discarded meals; it represents a waste of land, water, energy, and human labor invested in producing food (Seberini, 2020). The consequences are wide-reaching:

- **Environmental:** When food waste ends up in landfills, it decomposes and releases methane, a greenhouse gas 21 times more potent than CO<sub>2</sub>, contributing significantly to climate change. Globally, food waste accounts for about 7% of total greenhouse gas emissions (Seberini, 2020).
- **Social:** Despite abundant production, nearly one billion people worldwide still suffer from hunger and malnutrition, while vast amounts of edible food are discarded in wealthier countries. This imbalance deepens inequalities between and within societies (Seberini, 2020).
- **Economic:** The global economic cost of wasted food is estimated at USD 1 trillion annually, which increases to USD 2.6 trillion when environmental and social costs are included (Seberini, 2020). At the household level, food waste translates into direct financial loss for families, as all the embedded costs of production and distribution have been paid before the food is thrown away (Schanes et al., 2018).

Beyond these impacts, scholars emphasize that food waste is not merely the result of individual behavior, but a systemic issue influenced by consumer practices, cultural norms, and supply chain inefficiencies. Even when individuals have the intention to waste less, structural and habitual household practices often lead to discarded food (Schanes et al., 2018).

### 2. How This Project Addresses Sustainability and Education

Given these profound challenges, sustainability initiatives are increasingly targeting food literacy, consumer awareness, and practical action. Education is recognized as a key driver of behavioral change: if children learn early to value food and understand the consequences of waste, they are more likely to adopt sustainable habits throughout their lives.

This project situates itself in the UN Sustainable Development Goals (SDGs), especially SDG 12: Responsible Consumption and Production, which aims to halve per capita food waste at retail and consumer levels by 2030. By engaging students directly in interactive,

game-based learning, the project responds to calls for innovative strategies that not only inform but also actively transform consumption practices (Lin et al., 2013).

Moreover, current research highlights that food waste should be reframed from being viewed purely as a “problem” into a resource and opportunity. New perspectives emphasize valorization, meaning that food waste can be a valuable raw material for fuels, chemicals, and materials, shifting toward a circular bioeconomy (Lin et al., 2013). By teaching children to see value in what is often discarded, the project integrates environmental science with everyday choices in a way that resonates personally and socially.

### 3.The Role of the Leftover Challenge

The Leftover Challenge game is at the heart of this educational mission. It serves three functions:

1. Awareness Raising – It makes the invisible costs of food waste (resources, energy, inequality) tangible for students.
2. Behavioral Change – By practicing decision-making in playful scenarios, students learn strategies like planning meals, valuing “imperfect” produce, and understanding supply chains.
3. Systems Thinking – The game connects individual choices to broader environmental, social, and economic consequences, thereby helping students see themselves as agents of change.

As part of a larger initiative on sustainability education, the Leftover Challenge supports transversal competences such as critical thinking, collaboration, and responsibility. By integrating insights from research, the project does not only provide a fun classroom activity, but also an evidence-based educational tool with long-term social and environmental relevance.

## Importance of the Game

### 1. Contribution to EU and Global Sustainability Goals

The Leftover Challenge aligns directly with European and global strategies aimed at reducing food waste. As an Erasmus+ KA220 initiative running from December 2023 to November 2025, it was co-funded by the European Union to raise food waste awareness among primary school children, equipping them and their teachers with tools to understand household food waste causes and to foster discussions on responsible consumption.

This educational approach supports SDG 12: Responsible Consumption and Production, particularly its target to halve per-capita global food waste at retail and consumer levels by

2030. By embedding food-waste awareness into early education, the project contributes to long-term shifts toward sustainable consumption patterns.

Furthermore, the initiative resonates with EU frameworks like the Waste Framework Directive, which mandates prevention programs, promotion of food donation, and prioritization of human consumption over disposal (Santos, & Carvalho, 2025).

## 2. Teaching children about food waste is crucial

**Early behavioral influence:** In Europe, households account for approximately 55% of food waste, making children in primary education key agents of change in shifting consumption habits. Empowering young learners with awareness and responsibility amplifies this impact. (Goswami, 2022)

**Bridging intention and action:** Many people wish to act sustainably but feel individual efforts are insignificant—this is known as the collective action dilemma. The Leftover Challenge aims to break through this barrier by fostering a sense of agency and influence in children. (Clever, 2007)

**Family engagement:** The game encourages open, non-judgmental conversations about food practices within families, strengthening communal learning and reinforcing behaviors beyond the classroom. (Upreti, 2023; Vito, 2024).

## 3. Playful learning can drive long-term behavioral change

**Serious games as effective tools:** Research confirms that serious games and gamified interventions—by fostering emotional engagement, reflection, and systems thinking—can enhance awareness and shift behaviors related to food waste (Santos, & Carvalho, 2025; Lim et al., 2025).

**Breaking through with emotion and fun:** Traditional fact-based approaches may fail to motivate change. Games that evoke emotional reactions (e.g., “Face-the-Waste”, where participants see food discarded during gameplay) can deliver memorable learning experiences and stronger attitudinal shifts. (Santos, & Carvalho, 2025)

**Reinforcement through interaction:** The Leftover Challenge’s interactive and reflective gameplay, combined with teacher guidance and training, enables children to actively process concepts, recall them more effectively, and practice sustainable decisions—even beyond school settings. (Lim et al., 2025)

## The Game – Concept & Content

### 1. What is the Leftover Challenge?

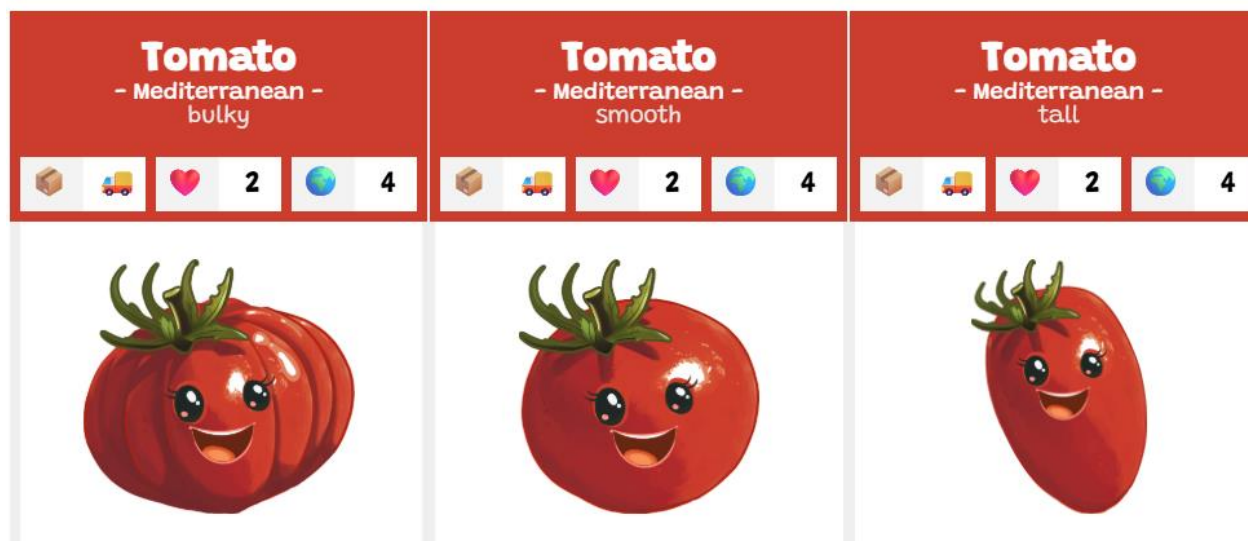
Leftover Challenge is a classroom game that builds food-waste awareness through three playful modules. Students calculate, map, and create to see how everyday choices affect the planet, then practice making better ones. The game was co-designed and tested across multiple settings to align with real classroom needs and support quick adoption. It's designed primarily for ages 8–12, but adapts up or down with scaffolds or extensions. It works in regular classrooms, inclusive settings (with visual/tactile supports and story-based formats), eco-clubs, and project weeks. Cross-curricular links include Math, Geography, Writing, History/Art, Science, and Civic Education.

What students learn.

- Understand carbon footprint and make lower-impact menu choices (Module 1).
- Recognize global food systems and “food miles” via mapping and narratives (Module 2).
- Appreciate diversity in nature and challenge “perfect food” stereotypes that drive waste (Module 3).

### 2. Game Components

**Food cards:**



Each card shows: food name & image, origin region, transport (🚚/🏭), taste score (❤️), and carbon footprint value (🌐). Example sets include tomatoes, potatoes, eggs, milk, chocolate, bananas, pork, beef, cheese, and chicken—with varied regions, transport, and scores to compare.

**Worksheets:**

**Module 1: Calculating the Footprint of a Food Item**

Create a tasty menu using 5 cards

Taste score  
 +  +  +  +  =

Carbon footprint  
 +  +  +  +  =

Can your menu be changed to be just as tasty, but have a lower Carbon footprint?

Taste score  
 +  +  +  +  =

Carbon footprint  
 +  +  +  +  =

**Module 2: The Journey of a Food Item**

Write your country's name and mark it on the map  
 Pick a card, pretend the food doesn't come from your country  
 Draw its journey to your home and describe it

My food item: \_\_\_\_\_  
 Started in: \_\_\_\_\_  
 Travelling by: \_\_\_\_\_  
 To arrive in: \_\_\_\_\_

**Module 3: What's a "Typical" Carrot or Cucumber?**

Place a food card here

Name  
→ region → description

Draw the silliest way you've seen this food

Draw how this food normally looks

Draw this food in a fun new way that looks tasty

## Module 1 – Calculating the

Footprint of a Food Item: A double table where students add taste scores and carbon footprint scores for a 5-card menu, then create a second menu to keep taste high but lower the footprint.

Module 2 –The Journey of a Food Item: A map where students mark their country, draw a route from another region, and write a short story about their food's journey.

Module 3 – A creative template where students place a card and draw three versions of the food (typical, silly, and a fun new version) to encourage creativity and break stereotypes about "perfect" food.

Optional materials & set-up. Printable cards & worksheets, world map/globe, whiteboard, markers, visual aids for transport modes, and space for team play. The guide includes quick teacher set-ups and "support moments" (e.g., defining carbon footprint; orienting on maps).

## 3.Explanation of the Three Core Modules

### 1) Module 1 – Calculating the Footprint of a Food Item.

Students act as menu designers. They select five food cards, add up taste scores and footprint scores, and reflect on the results. Then they try to redesign the menu to keep the taste score the same or higher but reduce the footprint. Teachers can encourage discussion: Which swaps had the biggest effect? Why? This module introduces basic arithmetic, trade-offs, and systems thinking.

**Suggested extensions:** Have students graph their results as bar charts Compare different teams' menus and discuss strategies. Relate scores to real-world CO<sub>2</sub> equivalents for older students.

### 2) Module 2 – The Journey of a Food Item.

Students explore global supply chains. They choose a card, assume it does not come from their country, and draw its route on the map (origin → transport → table). They fill in: country

of origin, transport type (ship, truck, plane), and final destination. Reflection prompts: How many kilometers did your food travel? Could you replace it with a local alternative? How does transport mode change the footprint?

Suggested extensions: Use string on a classroom map to represent distances. Compare shipping vs. flying impacts. Have students present their “food travel story” dramatically or as a comic strip.

### 3) Module 3 – What’s a “Typical” Carrot or Cucumber?

Students confront beauty standards for produce. They draw what the food “should” look like, then draw the silliest and most creative versions they can imagine — and still make them look delicious. Teachers facilitate discussion: Would you still eat the silly one? Why do stores reject “ugly” produce?

Suggested extensions: Host a “Wonky Veg Wall” in the classroom with drawings. Bring in real examples of irregular produce. Discuss campaigns like “Imperfectly Delicious” that sell misshapen produce.

### 4. How the Game is Designed to Be Used.

The game is designed with a flexible delivery. Teachers decide according to their group of children or the type of activity they choose for them. The game can be used as an extracurricular instrument in afterschool programs or can be used as teaching instrument in traditional teaching systems. Modules can be completed in 15–20-minute exercise if used like per se for afterschool activities or thematic classes. They can also be completed as a full 45-minute lesson. Teachers may create a full awareness week on leftovers and run one module per day during this project week. If used in combination with other informational materials it can be combined as a full 90-minute workshop.

| Implementation Options |                                                                                                                                                                                                                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option                 | Description                                                                                                                                                                                                                                                                             |
| <b>Full Game Week</b>  | Run the game over five themed days. Begin with an introduction to food waste, then complete one module per day: scoring food items (Math), mapping food journeys (Geography/Writing), and exploring food appearance and bias (Art/History). Conclude with student reflections, posters, |

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                                  | <p>or a “Wonky Veg Wall.”</p> <p>Example: SEN learners could be engaged through puppet storytelling. Students could map food routes with string. Ideal for Sustainability Week or a project-based learning week.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Subject-Based Integration</b> | <p>Integrate each module into standard subject lessons over several weeks. In Math class, students calculate footprint scores using Module 1, reinforcing numeracy and critical thinking. Geography lessons can include Module 2, where students map the travel routes of food and explore global trade. Module 3 fits naturally into Art or History classes, where students create visual projects and discuss how food appearance standards have evolved.</p> <p>Example: Module 1 could be used as a math lesson to support learning about averages and comparisons. Teachers could integrate Module 2 into a Geography unit on European countries and transportation. This format offers flexibility and aligns easily with national curricula without requiring schedule changes.</p> |
| <b>After-School Club</b>         | <p>Use the game as part of an eco-club, gardening club, or art club over several weekly sessions. Students can work on the modules at their own pace, engaging in creative tasks such as mapping food journeys, drawing wonky vegetables, or developing mini-projects. The program can end with a small exhibition, classroom display, or food waste pledge involving parents and the wider school community.</p> <p>Example: Students could create comic strips and interactive posters during club time. An environmental club could use the materials to prepare a class presentation on how to reduce food waste at home. This setting encourages creativity,</p>                                                                                                                      |

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|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | leadership, and real-world application of sustainability concepts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Cross-Curricular Project</b> | <p>Implement the game over several weeks as part of an interdisciplinary learning project. Assign students different roles such as researchers, writers, artists, or presenters and guide them through the three modules while connecting lessons in Math, Geography, Language Arts, Art, and Civic Education. Include research tasks, storytelling, data analysis, and creative expression. End with a class exhibition, digital presentation, or student-led awareness campaign.</p> <p>Example: Students could develop a “Food Waste Awareness Week” combining footprint scoring with poster creation and public speaking. A classroom could build a “Food Journey Wall” that could link their math, writing, and geography lessons. This format supports deeper learning and collaboration while encouraging student ownership and initiative.</p> |

## Teaching aids

Leftover Challenge in class

### ***Prepare for each module with a quick teacher setup guide***

Each module begins with a clear overview of materials, time needed, and key concepts. The setup suggestions are based on classroom trials in five countries, where teachers reported that quick-reference visuals, printed cards, and differentiated worksheets helped them feel confident starting the activity even without prior training.

### ***Understand what to explain and when to support students***

This guide highlights “support moments” identified during classroom testing such as clarifying the meaning of “carbon footprint” in Module 1, helping students orient themselves on maps in Module 2, or guiding them through the idea of “typical food” in Module 3. These

prompts ensure that teaching moments align with students' needs.

### ***Adapt instructions to fit different learning levels***

Testing showed that younger students and SEN learners often needed more structure, while older or advanced students preferred open-ended, creative extensions. For each module, we include scaffolding ideas (visual aids, simplified steps) and enrichment tips (reflection prompts, cross-subject tasks) to suit a range of abilities and learning profiles.

### ***Connect each game module to classroom learning goals***

Each module aligns with recognized curriculum areas such as numeracy, environmental literacy, critical thinking, and communication skills. The guide provides explicit links between game activities and educational competencies, supporting teachers in achieving both subject-specific and transversal learning outcomes.

### ***Extend the activity at home or across other subjects***

Teachers in the testing phase found that students often brought ideas from the game into other areas talking about food waste with their families, drawing wonky vegetables at home, or planting seeds after the lessons. We suggest concrete ways to extend learning, including homework prompts, community challenges, and eco-club adaptations, reinforcing behavioral change beyond the classroom.

## The use of the game in specific classes

### ***Math classes***

In these classes, players add up points earned for saving food and compare their totals to see who made the biggest impact. They then graph their results, turning their scores into a colorful bar chart that shows the class's overall progress in reducing waste. This makes math fun and meaningful, showing how every small action adds up to a big difference. By the end, students can explain how their choices helped the planet while practicing real-life math skills.

### Module 1 – Calculating the Footprint of a Food Item

- Students select 5 food cards and calculate total 🍷 taste and 🌍 footprint scores for their menu.
- Redesign the menu to lower the footprint while keeping taste score equal or higher.

- Create bar graphs or pictographs comparing Menu 1 vs. Menu 2.
- Compare results with classmates to see which team made the most efficient changes.

## Module 2 – The Journey of a Food Item

- Use map scale to calculate approximate travel distance for selected foods.
- Record distances for two foods and compare.
- Make a simple bar graph to show which traveled farther.
- Discuss which food choice saves more kilometers and fuel.

## Module 3 – What’s a “Typical” Carrot or Cucumber?

- Survey classmates on whether they would eat a wonky vegetable.
- Record answers in a tally chart and turn into a bar graph.
- Discuss what the data shows about attitudes to imperfect food.

### **Science classes**

In this lesson, students explore what happens to food after it is thrown away by learning about decomposition and how composting can turn scraps into healthy soil. They investigate how energy is used to grow, transport, and cook food, discovering why it is important to waste less. Through hands-on activities, students can compare composting with regular trash disposal and see the difference it makes for the environment. By the end, they understand how their choices help save resources and reduce pollution, making them active heroes in the Leftover Challenge.

## Module 1 – Calculating the Footprint of a Food Item

- Introduce the concept of carbon footprint using visuals or short video clips.
- Link each card’s footprint score to real-life emissions.
- Discuss how choosing foods with lower scores helps the planet.
- Optional demonstration: show sealed container decomposition or video to explain methane production.
- If possible, connect the lesson to a school or community garden: show students composting methods for food scraps, measure how compost reduces waste, and discuss how compost can enrich soil and close the food cycle.

## Module 2 – The Journey of a Food Item

- Discuss energy used in production and transport (fuel, refrigeration, packaging).
- Simulate supply chain with students passing “energy tokens” to visualize energy use step by step.
- Talk about emissions from trucks, ships, and planes and why local foods reduce energy demand.
- Link to garden activities: compare store-bought vs. garden-grown produce, measure harvest distances (meters instead of kilometers!), and discuss how growing your own food reduces energy use.

## Module 3 – What’s a “Typical” Carrot or Cucumber?

- Compare perfect vs. irregular produce, discussing nutritional value.
- If possible, do a taste test to show they are equally good to eat.
- Talk about how cosmetic rejection contributes to waste.
- Integrate garden observation: let students harvest produce of different shapes from the garden (if available), weigh them, and compare yields—showing that irregular produce still nourishes people and plants when composted.

## Geography classes

In this lesson, students discover where their food comes from by mapping the origins of different ingredients on a world map. They calculate 'food miles' to see how far each item traveled to reach their plate and discuss how transportation impacts the environment. This helps them understand the hidden journey of their meals and why choosing local, seasonal foods can reduce waste and pollution. By the end, students can explain how food choices connect to global sustainability and become smarter shoppers in the Leftover Challenge.

## Module 1 – Calculating the Footprint of a Food Item

- Mark origin of menu items on a world or classroom map.
- Categorize items as local vs. imported.
- Discuss how transport distance affects footprint score.
- Compare menus to see which has more local ingredients.

## Module 2 – The Journey of a Food Item

- Trace food routes on a classroom map and label modes of transport.
- Compare shipping, trucking, and air freight routes.

- Discuss why some foods must be imported (seasonality, climate).
- Relate back to footprint scores and transport choices.

## Module 3 – What’s a “Typical” Carrot or Cucumber?

- Discuss where most food waste occurs (farm, retail, home) and how it varies by country.
- Compare international campaigns to save “ugly” produce and discuss cultural differences.

### ***Language arts - writing skill classes***

In this lesson, students use their creativity to write travel stories from the perspective of a food item, describing its journey from farm to table. They also practice persuasive writing by creating letters or posters encouraging others to reduce food waste. This helps them build strong communication skills while reflecting on real-world issues. By the end, students share their work to inspire classmates and families, turning words into action in the Leftover Challenge.

## Module 1 – Calculating the Footprint of a Food Item

- Write a short persuasive letter to the school cafeteria explaining why the redesigned menu is better for the environment.
- Practice using facts (scores and comparisons) as supporting evidence.
- Share letters aloud or create a “Menu Wall” with student suggestions.

## Module 2 – The Journey of a Food Item

- Write a short narrative from the perspective of the food item: “I am a banana traveling across the ocean...”
- Include details about distance, type of transport, and challenges.
- Share stories in groups to highlight variety of routes.

## Module 3 – What’s a “Typical” Carrot or Cucumber?

- Write a campaign speech or short article encouraging others to buy and eat imperfect vegetables.
- Practice persuasive techniques and present speeches to the class.
- Turn them into a class pledge to reduce waste.

### ***Art classes***

In this lesson, students express their creativity by drawing different types of food from around the world, showing the diversity of what we eat. They design colorful posters that promote reducing food waste and encourage composting, recycling, or sharing leftovers. This activity allows them to combine art with a powerful message, turning their ideas into visual campaigns. By the end, their artwork can be displayed around the school to inspire the entire community to join the Leftover Challenge.

## Module 1 – Calculating the Footprint of a Food Item

- Draw a colorful poster of the new menu, showing chosen foods and their footprint scores.
- Add slogans such as “Tasty and Earth-Friendly!”
- Display posters in school to encourage other students to think about their choices.

## Module 2 – The Journey of a Food Item

- Create a comic strip or storyboard of the chosen food’s journey.
- Include steps from farm to table with images of transport modes.
- Display strips as a “Food Travel Gallery.”

## Module 3 – What’s a “Typical” Carrot or Cucumber?

- Draw funny versions of vegetables and turn them into characters (superheroes, cartoon figures).
- Create a class “Wonky Veg Wall” to celebrate diversity in food.
- Use posters to promote the message: “Every Veg Deserves a Chance!”

## Lesson Plan Model 1: Design a Tasty, Low-Footprint Menu

**Subject:** Mathematics with cross-curricular link to Environmental Education

**Grade Level:** Primary

**Duration:** 45–60 minutes

**Main Theme:** Addition, comparison, responsible decision-making related to the carbon footprint of food

### Learning Objectives

By the end of this lesson, students will be able to:

- Add numerical values (taste scores and carbon footprints) from multiple food items.

- Compare food combinations based on their total values.
- Make informed choices about how to maintain taste while reducing environmental impact.
- Explain or represent their choices in writing, drawings, or verbal presentation.

## Materials Needed

- Printed food item cards with values for taste score and carbon footprint
- Calculating the footprint of a food item- WORKSHEET
- Pencils and colored markers
- Counting blocks or number lines (optional, for SEN students)
- Info graphs

## Structure of the Lesson

### 1. Introduction (5-10 minutes)

Class discussion on following topics:

- Colloquial discussion on food: what foods they ate today and which foods they like most.
- Introduce the idea that producing food requires energy and resources. Some foods use more than others.
- Explain in simple terms that a "carbon footprint" is the amount of pollution made when food is grown, processed, or transported.
- Show and explain some of the used cards

For students with SEN:

- Use concrete, simple language.
- Provide visual examples or printed keywords.
- Allow for alternative responses such as pointing or drawing instead of speaking.

### 2. Activity Explanation (5-15 minutes)

Explain the activity:

Explain the use of the cards: Each card includes the name and image of the food, the part of the world its produced in, its carbon footprint shown with a planet icon, and its taste score shown with a heart icon. When presenting each card, the teacher reads the name of the food

aloud, mentions where it comes from, and explains how far it has traveled. The teacher points to the planet icon and explains that the higher the number next to the planet icon the more pollution is made, then points to the heart icon and explains that more hearts mean better taste.

Explain the exercise: Students will create a tasty menu using five food cards based on the taste score and carbon footprint value on their card. Students must calculate the total taste score and total carbon footprint for their menu. After that, they will try to create an alternative menu that has a similar taste score but a lower carbon footprint

In order to ease the exercise, the teacher can demonstrate an example on the board or with two students.

For SEN support teachers can provide a visual checklist of steps, or repeat instructions in small steps and give the possibility to work in student groups, if they are able to do so, rather than alone. Students can use sticks or blocks to ease additional exercises. In the case of the inclusive class for students with special needs teachers can print bigger cards not the typical card size but A4 cards so the numbers are clearer.

### **3. Independent Work (10–20 minutes) (or small group work in children with SEN)**

Students select five food cards and glue them into the worksheet complete the following steps: Write or record the taste score and carbon footprint for each item. Add the total for each column (taste and footprint). Consider switching one or more foods to reduce the total carbon footprint while keeping the taste score high. Create a second version of the menu if time allows

Support strategies for students with SEN: use number lines or counting blocks for addition, allow fewer food cards (e.g., three instead of five), provide pre-filled example worksheets, allow drawing instead of writing, where appropriate.

### **4. Sharing and Discussion (5-10 minutes) -**

Invite students to share: their final menu, the total taste score and carbon footprint, any changes they made and why? Allow different ways to share: talking, pointing to their sheet, or having a peer present on their behalf.

**5. Reflection and Wrap-Up (5–10 minutes)** if we are running out of time, we skip this part because the purpose of this class is to focus on food waste and emphasizing the importance

of changing ingredients in order to lower carbon footprint. The way children argue the changes they have made in their menu seems more relevant to their food waste prevention skills.

Ask students what they have learned today about how food affects the planet and what they would change in their food choices after this lesson and if there is a way to be both healthy and good to planet Earth. Teachers can also offer a short writing or drawing prompt "My favorite menu is...", "To help the planet, I will eat less...", "One change I can make is..."

Support strategies for students with SEN teachers can provide sentence starters or use a simplified reflection question with visuals or allow oral responses instead of drawing and writing.

### Assessment

Observe and evaluate the following:

- Students completed their food menu
- Students have made their calculations.
- Students were able to compare and understand different food choices.
- Students have participated in the reflective discussions.
- Use of basic addition and comparison skills.

### Adaptations for Children with Special Educational Needs

- Provide clear, step-by-step instructions with visual supports.
- Allow choice and flexibility in how students complete tasks (e.g., drawing instead of writing).
- Use hands-on tools such as counting blocks, number lines, or visual charts.
- Assign peer buddies or support staff to assist.
- Offer movement or sensory breaks if needed.
- Simplify the number of food items or total required work for students who may need it

Lesson Plan Model 2: The Journey of a (use any of the cards)

**Subject:** Geography and Writing (cross-curricular: Environmental Education)

**Grade Level:** Primary

**Duration:** 45–60 minutes

**Main Theme:** Understanding food origins, travel impact, and storytelling

## Learning Objectives

By the end of this lesson, students will be able to:

- Identify where a specific food item (e.g., tomato) comes from and trace its path to their plate.
- Recognize the environmental impact of food transportation.
- Create a short written or illustrated story about the “life journey” of the tomato.
- Reflect on the value of locally grown food and make personal connections to food sources.

## Materials Needed

- Module 2 -worksheet
- Example of journey map for children to understand
- Colored markers, pencils
- Writing/drawing sheets (with a simple story scaffold)
- Optional: Real tomato, tomato seeds, or images of different tomato varieties

## Lesson Structure

### 1. Introduction (5–10 minutes)

Start with a warm-up conversation: “Who likes (vegetable or fruit)?” “Where do you think they come from?” Show the card and ask: “How do they get here onto our plates?” Introduce the idea that food travels and this journey uses energy and creates pollution. Use the map to show different places where the fruit or vegetables are grown (Spain, Greece, Italy, Turkey, Romania, etc.) Briefly introduce the concept of “food miles.”

**For SEN students:** Use visual cards to show each step of the journey. Encourage pointing or using gesture-based responses or use a red thread on the map.

### 2. Group Exploration (10–15 minutes)

Introduce the **Vegetable or fruit Journey Story** with visuals (e.g., story cards or slideshow):

- A. 1 Grown on a farm- 2 Picked by a worker- 3 Packed into crates – 4 Transported by

truck – 5 Stored in a supermarket – 6 Bought by a family – 7 Cooked or eaten fresh

- B. 1 Seeds bought from the shop – 2 Seeds planted in the garden – 3 Watering and caring for the plant – 4 Picked from the garden – 5 Cooked or eaten fresh

For each step, briefly discuss who is involved and what energy is used. Show travel distance examples (e.g., local farm vs. import from another country). Ask: “Which fruit or vegetable do you think has a bigger footprint?”

### 3. Creative Writing or Drawing Task (15–20 minutes)

Students will now **create a story or comic strip** about a fruit or a vegetables journey based on a simple structure:

Introduction: The name of the fruit or vegetable and a short description color, size, taste

Content: Where the fruit or vegetable was” born” - How it was picked and packed? - How it traveled - Where it was sold? Who ate it and what happened to leftovers?

Conclusion: What’s the best way to use a vegetable (so that the carbon footprint is the least)

Allow them to pick if they want to draw a comic or rather write a story (or a song) . They are both creative exercises and they both have to follow the narrative structure but this way the exercise will be creative and fun. If you tell them to draw or write there might be pressure.

#### SEN adaptations:

Use visual templates as help for story prompts, allow audio recording, provide pre-cut picture elements to glue in order.

### 4. Sharing and Discussion (5–10 minutes)

Invite one volunteer to read or describe their fruit or vegetables journey.

Questions that can be asked: “Was your vegetable or fruit grown close or far away?” “What part of the journey surprised you?” “What happens if the fruit or vegetable is not eaten?”

### 5. Reflection and Wrap-Up (5–10 minutes)

Discuss simple ways we can reduce food journeys: eating more local food, buying food that’s in season, not wasting what we buy.

You can use a writing or drawing prompt: “My tomato traveled from...” or “To help the planet,

I will eat more..." or "One thing I learned about food today is..."

## Assessment

Story/comic strip follows introduction content and conclusion and includes the basic elements of the fruit/vegetables journey.

Children demonstrate understanding of food production and transportation.

They are able to express and explain at least one sustainability insight (verbally, visually, or in writing)

## Extension Ideas

Plant tomato seeds in class and start a local food growing experiment

Compare journeys of local vs. imported foods with string on a map

Lesson Plan Model 3: What's a 'Normal' Carrot or Cucumber?

**Subjects:** History and Art (cross-curricular with Environmental Education)

**Grade Level:** Primary

**Duration:** 45–60 minutes

**Main Theme:** Exploring diversity in nature, understanding food aesthetics and waste, and expressing values through art

## Learning Objectives

By the end of this lesson, students will be able to:

- Understand food shapes: how does a healthy and ripe fruit look and how a fruits shape changes through historical and commercial influences
- Recognize that fruits and vegetables come in many natural shapes that are still healthy and delicious.
- Reflect on how food appearance affects waste and create art that celebrates "wonky" or "imperfect" vegetables
- Develop a positive attitude toward diverse food shapes and colors not only perfectly shaped fruits or vegetables

## Materials Needed

- Module 3 worksheet
- Photos or illustrations of traditional farming and markets some pictures of imperfect

wonky vegetables or fruits that are healthy (if available maybe bring one wonky vegetable with yourself).

- Worksheet with typical fruit, untypical fruit and the tastiest untypical food - colored pencils, paints, clay/playdough

## Lesson Structure

### 1. Introduction: What Is a 'Normal' Vegetable? (10 minutes)

Start by holding up or showing images of various carrots and cucumbers: straight, twisted, small, bent, double-ended, while asking "Which ones do you think are normal?", "Why do you think we see lots of perfectly shaped ones in shops?" Introduce the idea that supermarkets prefer "perfect-looking" vegetables because they are easier to pack and sell but that this causes a lot of waste.

Present a short video of how in traditional farming and markets, all vegetables were sold, regardless of shape. Explain that the idea of "perfect vegetables" came more recently with the rise of supermarkets and advertising. Briefly show examples of old market paintings or seed catalogues where vegetables looked varied.

**SEN support:** use photo cards with tactile or real vegetable comparisons, ask yes/no or gesture-based questions

### 2. Group Discussion: Do Looks Matter? (5–10 minutes)

Start problematizing and ask students: "Have you ever seen a funny-shaped fruit or vegetable?" "Did you want to eat it or throw it away?" "Do you think a crooked carrot tastes different from a straight one?" *Highlight: The shape does not change the taste or nutrition!* Introduce vocabulary like: "imperfect," "wonky," "unique," and "natural."

### 3. Art Activity: Wonky Vegetable Portraits (20–25 minutes)

Take the worksheet and start creating fruits based on the discussions and videos presented. Explain to children to draw whatever feels right for them. "Captain Curly Cucumber – He may be twisted, but he's brave!"

For children who find drawing very hard or difficult allow them to use playdough or modeling clay to form unusual shapes.

**For SEN learners:** use pre-cut vegetable outlines for coloring, provide sensory materials (e.g., textured paint, real veggies to press on paper), allow collage with vegetable stickers or

magazine cutouts.

#### **4. Sharing and Presentation (5–10 minutes)**

Invite students to present their vegetables as a hero to our body: this is the imperfect tomato that has great taste and helps us feel happy. This is a bulleted banana that is very tasty and can still help our body in producing vitamin B. It looks like this because it is created by nature and everything that is created by nature is unique.

Create two galleries themed: 1. Perfect fruits/vegetables 2. Tasty unperfect foods. Cut and stick the creations on the wall and then walk around the classroom and discuss the connection between healthy and "good looking/perfect"

#### **5. Reflection and Wrap-Up (5–10 minutes)**

During the walk between the galleries ask children and let them reflect or reflect prompt: "Why do you think some people throw away vegetables that look different?", "What did you learn today about food shapes?", "What can we do to waste less food just because of how it looks?"

#### **Assessment**

Students participate in discussions and reflect on vegetable appearance.

Students will create an artwork by sticking their creations on the wall to represent acceptance of natural diversity.

Students are able to articulate or express the idea that "imperfect" does not mean bad and they are able to engage in conversation about waste prevention linked to food aesthetics

#### **Extension Ideas**

Organize a Wonky Veg Week at school, encouraging families to share photos or recipes using "imperfect" fruits or vegetables.

Create a "Vegetable Rescue Cookbook" with simple ideas for using ugly veggies or invite a local farmer to talk about real vegetable diversity.

Partner with a grocery store or food bank for a visit or donation campaign

Extra suggestions for including the game in both education but community awareness

#### **Inclusive strategies**

The game is SEN friendly by design but there can be some suggestions to help with design.

Visual icons (📦/🚚/🏭/❤️/🌍), bigger print cards, stepwise instructions, tactile materials, gesture or drawing responses, peer buddies, and flexible task size. Keep wording clear and concrete.

### **Teacher readiness & support.**

Provide PD on hands-on ESD methods (project-based learning, real-world problem-solving, cross-curricular links). Offer ready-to-use lesson plans, worksheets, digital resources, and assessments to reduce planning load and boost confidence.

### **Assessment & behavior change tracking.**

Use pre/post mini-surveys, classroom waste audits, and sustainability challenges (e.g., No-Waste Week, Leftovers Lunch Day) to monitor knowledge + habits over time.

### **Family & community engagement.**

Run family challenges (meal-planning, leftovers cook-offs), share take-home checklists and storage guides, involve parents in gardens/composting/donation drives, and celebrate “Sustainability Star” families; communicate via newsletters/socials/webinars.

### **Policy & partnerships.**

Connect classroom work with local waste policies, school meal practices, NGOs, food banks, farms, and municipalities to make learning tangible and systemic.

### **Digital tools.**

Use online simulations, short videos, and gamified quizzes to visualize impacts; have students design infographics with their own waste data to display in school.