Sustainability on a plate

This scenario helps adult learners explore how everyday food choices affect carbon footprint, water footprint, and food waste. Participants learn to make informed, sustainable meal decisions.

Learning objectives

After completing this scenario, learners will be able to

- use an online carbon footprint calculator to compare common foods
- design a realistic, affordable 7-day meal plan that reduces environmental impact

Target group

Adult learners with basic digital skills. Suitable for beginners in sustainability and technology.

Level
Easy ★

Length
2 x 90 min

Mode
Online and in-person

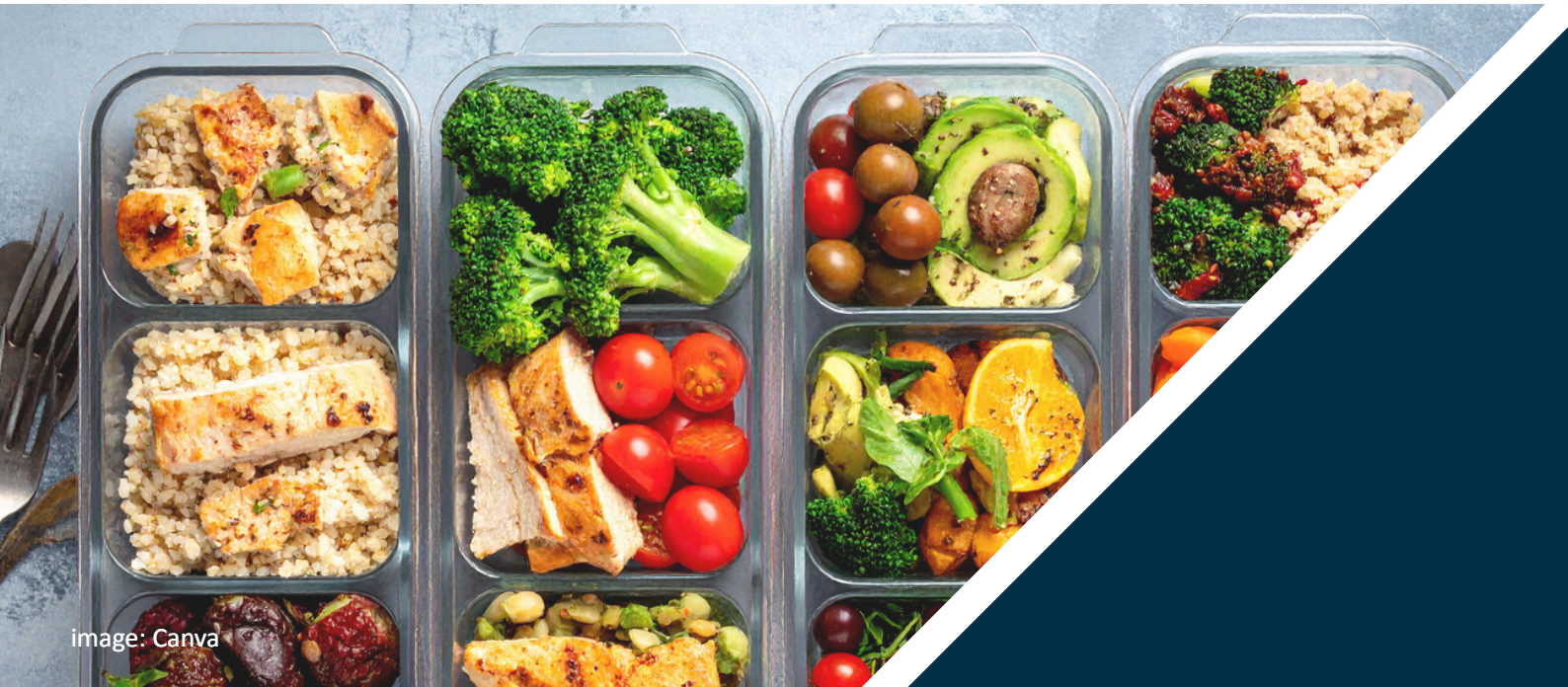

image: Canva

To study before the scenario

Teachers 4.0 Digital (provides short modules on supporting adults in digital tasks—useful for preparing calculator-based activities)
TED-Ed video: How your food choices affect the climate
BBC Food Carbon Footprint Calculator (free)

Emerging Technology tools used	Educator	learner
Google Sheets	☑	☑
BBC Food Carbon Footprint Calculator	☑	☑
Canva	☑	

Equipment needed

Computers/laptops/mobile phones for classroom learning, internet connection.

Description of the learning scenario

Preparation before class

1. Read the supporting materials on Teachers 4.0 Digital platform to help you develop clear, step-by-step instructions for the activities in these learning scenarios. To access the materials, you must register on the platform. This step is optional and is intended to serve as inspiration in preparing the materials.
2. Create 2–3 slides in Canva explaining:
    - carbon footprint
    - water footprint
    - food miles
3. Test the BBC calculator.

Session 1: Learning about food emissions (90 minutes)

Step 1: Introduction (10 minutes)

The educator presents Canva slides that may include, in addition to the necessary information:

- QR links to dynamic environmental data sets (if students use mobile phones)
- Interactive animation elements to make the information easier to assimilate

Step 2 – Short video (15 minutes)

Learners watch the TED-Ed video:
"How Our Food Choices Link to Climate Change"
This provides a visual introduction to digital-supported environmental literacy.

Step 3 – Concepts & micro-discussion (15 minutes)

The educator explains, with examples supported by digital dashboards and AI explanations:

- why some foods have higher emissions (e.g. data from carbon footprint databases, or using AI to break down methane/land use impacts)
- what "food miles" mean
- why seasonal produce matters (AI-assisted examples for local context)

Educators may use AI on-the-spot:
"Explain food miles using an example from Romania and compare local versus imported apples."

Step 4 – Practical activity: compare food emissions (40 minutes)

Learners work in pairs and:

- Select 5 food items they commonly buy.
- Enter them into the BBC Carbon Footprint Calculator.
- Record the results in a document. You can ask ChatGPT or Gemini to generate simple visual graphs or color-code food items with high and low emissions.
- Use ChatGPT or Gemini to deepen understanding, for example:
  - “Why is cheese more carbon intensive than poultry?”
  - “Explain water footprint for rice in simple language.”

The educator’s role is to support

- learners with low digital confidence
- troubleshooting technical issues
- understanding digital data sources

Pairs discuss differences and what surprised them.

Step 5 – Reflection (15 minutes)

Learners identify two possible food swaps to reduce emissions, supported by AI suggestions if needed.

Example prompt:
“Suggest two low-carbon alternatives to beef that are commonly available in European supermarkets.”

Learners share ideas with the group.

Sesssion 2: Designing a sustainable weekly menu using digital tools (90 minutes)

Step 1 – Review of the information presented in the first session (10 minutes)

Step 2 – Group Work: Sustainable Menu Creation (60 minutes)

In small groups, learners use a shared Google Doc or Google Sheets calculator to create a 7-day menu that:

- reduces CO_2 emissions
- uses seasonal/local foods
- minimises food waste
- is affordable and realistic

They can use in the process:

- AI tools (ChatGPT/Gemini) to suggest low-carbon recipe ideas or food substitutes

Example prompts:
"Suggest a weekly meal plan under 50 kg of CO_2 emissions."
"Give me three breakfast ideas with low water footprint ingredients."

- Google Sheets charts to quickly compare different menu options
- Optional AI-generated shopping list inside Google Docs
- Learners also use online environmental data sources (QR codes from Session 1)

Step 3 – Group presentations (20 minutes)

Each group presents their menu, highlighting:

- one major improvement they made
- how emerging technologies (AI, calculators, Google sheets visualisation) helped their reasoning
- one unexpected insight from digital tools (e.g. high footprint of almonds)

Assessment

The educator evaluates learning outcomes based on:

- correct and consistent use of digital tools (calculator, Google Sheets, AI)
- clarity and logic of environmental reasoning
- coherence, feasibility and sustainability of the weekly menu
- learners' ability to interpret digital visualisations

Emerging Technologies for Holistic Literacy in Adult Education

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