

Participate in the garden-to-table challenge

Subject(s): Science, Mathematics, English

Grade(s): 8

Key Stage(s): 3

Learning intention(s)

Students will investigate the journey of food from seed to plate by growing, harvesting, and preparing ingredients from the school garden. Through this process, they will develop an understanding of plant biology, sustainability, nutrition and cultural connections to food while applying teamwork and problem-solving skills.

Mapping to curriculum: Scope and sequence, linked to the activity

Science

- Photosynthesis, plant biology, and soil health
 - Students investigate plant growth processes, track development, and test soil pH and nutrients, applying knowledge of biology.
- Sustainability and environmental impact
 - Students explore sustainable food production by growing food locally, researching food miles, and discussing environmental effects.
- Scientific inquiry: gathering and analysing data
 - Students record plant growth data, analyse soil samples, and evaluate nutrition information to draw evidence-based conclusions.

Mathematics

- Measurement: length, volume, and mass
 - Students measure plant growth, calculate harvest weights, and quantify ingredients for cooking using scales and rulers.
- Number and financial literacy: calculations and conversions
 - Students calculate food miles, compare costs of local vs. imported produce, and analyse resource use in gardening and cooking.
- Problem-solving and reasoning
 - Students plan and manage garden schedules, interpret data, and solve practical problems during plant growth and recipe preparation.

English

- Writing and representing: create informational and reflective texts
 - Students document their garden-to-table journey through journals, digital portfolios, and recipe descriptions with clarity and coherence.
- Speaking and listening: deliver presentations for varied audiences
 - Students present their process and findings to peers, explaining scientific concepts, environmental impact, and cultural connections persuasively.
- Language features and structures: use descriptive and explanatory language
 - Students use precise vocabulary and clear language to describe plant biology, cooking methods, and sustainability issues.

Lesson Instructions

Students will work in small groups to complete three phases:

1. **Grow It:** Research and plant a seasonal vegetable or herb in the school garden.
2. **Harvest and Analyse:** Track growth, collect data on soil health and plant development, and research the nutritional value of their chosen produce.
3. **Cook and Present:** Prepare a simple dish using their harvested ingredients and present their process, including environmental impact and cultural connections.

Materials

For Gardening Phase

- Gardening gloves
- Trowels and hand shovels
- Watering cans or hose
- Garden beds or pots
- Compost and soil mix
- Seeds or seedlings (seasonal vegetables and herbs)
- Garden markers for labelling plants
- Rulers or measuring tape (to track plant growth)
- pH testing kit for soil analysis (optional)

For Harvesting and Analysis Phase

- Notebooks for recording observations
- Digital cameras or tablets (for progress photos) (optional)
- Scales (to measure harvested produce)
- Magnifying glasses (for plant examination)
- Reference books or online resources on plant biology and nutrition

For Cooking and Presentation Phase

- Knives and chopping boards
- Mixing bowls and utensils
- Cooking appliances (if required, e.g. portable stove, blender)
- Plates, bowls, and cutlery
- Ingredients from the garden
- Recipe printouts or digital copies
- Presentation materials (e.g. poster boards, laptops for slideshows)

Steps

Phase 1: Grow It (Weeks 1–6)

- Students select a plant based on the season and research its growth needs.
- They prepare the garden bed, plant seeds or seedlings, and create a watering and care schedule.
- Students document progress in a notebook (photos, sketches, and notes).

Phase 2: Harvest and Analyse (Weeks 7–9)

- Students measure plant growth and observe changes.
- Soil samples are tested for pH and nutrient levels. (optional)
- Groups research the nutritional benefits of their produce and discuss sustainability factors (e.g., food miles, organic vs. non-organic).

Phase 3: Cook and Present (Weeks 10–12)

- Students develop a simple recipe featuring their harvested ingredient.
- They cook their dish (either in a school kitchen or as a no-cook option, such as a salad or herbal tea).
- Groups present their dish, explaining:
 - The science behind plant growth
 - The environmental impact of growing food locally
 - Any cultural or historical significance of their chosen ingredient

Outcome and Reflection: Students will reflect on what they learned about food sustainability, health, and teamwork. They can document their journey in a video diary or digital portfolio.

Extension Activity and Cross-Curricular Links

- **Science:** Photosynthesis, soil health, and plant biology.
- **Maths:** Measuring growth rates, calculating food miles.
- **Geography:** Climate and soil conditions affecting food production.
- **Health and PE:** Nutritional benefits of fresh produce.
- **Food Technology:** Cooking skills and food presentation.