

# Sustainable Culinary Practices: From Farm to Table

By: La Kisha Jordan

## Grade Levels

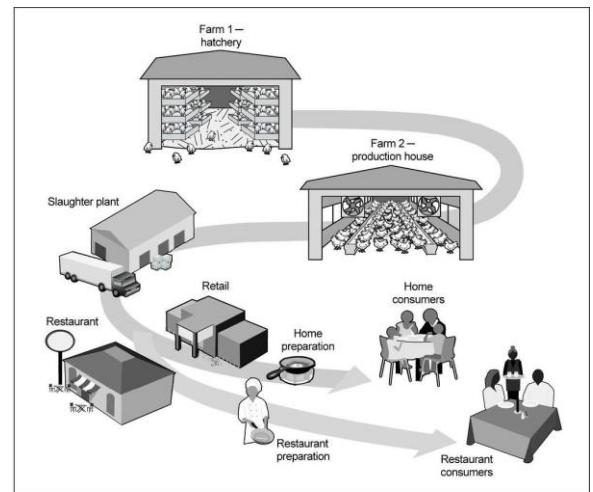
9-12

## Estimated Time

5 Class Periods (55 minute blocks)

## Materials Needed

- Computers or tablets for research
- Projector or screen for video viewing
- Handouts on sustainability concepts
- [PowerPoint slides](#)
- Unit Quiz (*see end of document*)



## DAY 1 Introduction to Sustainability in Culinary Arts

### Purpose

Day 1: Introduce students to sustainability and its importance in the culinary arts, emphasizing environmental, economic, and social impacts

### Background Agricultural Connections:

Understand how agricultural practices affect sustainability, highlighting local examples such as Mad Mary's Steakhouse & Saloon, La Minestra, Drifters, and the farmers market in Pierre, SD. Emphasize the role of local agriculture in reducing food miles and supporting community economies.

### Learning Objectives

1. Define sustainability and its significance in the culinary arts.
2. Identify local businesses that practice sustainable sourcing.
3. Recognize the impact of agricultural practices on environmental sustainability.

### Teacher Preparation:

1. Prepare the PowerPoint presentation and handouts on sustainability.
2. Ensure internet access for video streaming and research activities.
3. Research local establishments practicing sustainability for discussion.

## **Activities and Procedures:**

1. Introduction to Sustainability (10 minutes)
  - Discuss sustainability and its importance in the culinary arts.
  - Highlight local establishments practicing sustainability, such as Mad Mary's, La Minestra, and the farmers market.
2. Video Viewing: Introduction to Sustainable Cooking (5 minutes)
  - Watch *Why The Future Of Cooking Is Going To Be Zero Waste*  
<https://youtu.be/sXmBA-u3kyg?si=UQjNWqCrzCFXQ37I>
3. Lecture: Principles of Sustainability (20 minutes)
  - Present benefits of local sourcing and the concept of food miles.
  - Use PowerPoint slides to support the lecture.
4. Discussion: Local Examples (20 minutes)
  - Discuss how local businesses implement sustainability.
  - Encourage students to share their thoughts on the importance of supporting local agriculture.

## **DAY 2 Local Sourcing and Food Miles**

### **Purpose:**

Educate students on the benefits of sourcing ingredients locally and the environmental impact of food miles.

### **Background Agricultural Connections:**

Examine how sourcing ingredients from local farms reduces environmental impact and supports sustainable agriculture.

### **Learning Objectives:**

1. Explain the benefits of local sourcing.
2. Define food miles and discuss their environmental impact.
3. Research local farms and markets for sustainable sourcing.

### **Materials and Equipment Needed:**

- Computers or tablets for research
- Printed materials on local farms and markets

- PowerPoint slides
- Handouts

### **Teacher Preparation:**

1. Prepare research materials on local farms and markets.
2. Print handouts to guide research and discussion.

### **Activities and Procedures:**

1. Recap of Day 1 (5 minutes)
  - Review key points from the previous lesson.
2. Interactive Lecture: Local Sourcing (20 minutes)
  - Discuss benefits of sourcing ingredients locally.
  - Explain the concept of food miles and their environmental impact.
3. Group Activity: Research Local Farms and Markets (20 minutes)
  - Students form groups and research local farms and markets.
  - Provide handouts to guide their research.
4. Discussion and Sharing (10 minutes)
  - Groups share findings on local farms and markets.
  - Discuss the importance of supporting local agriculture.

## **DAY 3 Waste Reduction Techniques**

### **Purpose:**

Introduce students to waste reduction techniques in the kitchen, emphasizing composting, recycling, and efficient use of ingredients.

### **Background Agricultural Connections:**

Understand how reducing waste supports sustainable agricultural practices by minimizing environmental impact.

### **Learning Objectives:**

1. Identify methods to reduce food waste in the kitchen.
2. Conduct a waste audit to categorize and analyze kitchen waste.
3. Discuss the environmental benefits of waste reduction.

### **Materials and Equipment Needed:**

- Projector or screen for video viewing
- PowerPoint slides

- Handouts on waste reduction techniques
- Waste bins for composting and recycling

### **Teacher Preparation:**

1. Prepare the PowerPoint presentation on waste reduction.
2. Gather materials for the waste audit activity.

### **Activities and Procedures:**

1. Recap of Day 2 (5 minutes)
  - Review key points from the previous lesson.
2. Video Viewing: Reducing Food Waste (5 minutes)
  - Watch "*How to Reduce Food Waste | Minimalist Kitchen Tips*"  
[How to Reduce Food Waste | Minimalist Kitchen Tips](#)
3. Interactive Lecture: Waste Reduction (20 minutes)
  - Discuss methods to reduce food waste, including composting, recycling, and nose-to-tail cooking.
  - Use PowerPoint slides to support the lecture.
4. Group Activity: Waste Audit (15 minutes)
  - Students conduct a waste audit, categorizing items into compostable, recyclable, and non-recyclable bins.
  - Discuss results and brainstorm ways to reduce waste.
5. Reflection and Discussion (10 minutes)
  - Reflect on the importance of waste reduction in the kitchen.

## **DAY 4 Sustainable Meal Planning**

### **Purpose:**

Guide students in planning a sustainable meal using local and seasonal ingredients, focusing on minimizing waste.

### **Background Agricultural Connections:**

Understand how meal planning with seasonal ingredients supports local agriculture and reduces environmental impact.

### **Learning Objectives:\*\***

1. Plan a meal using local and seasonal ingredients.

2. Incorporate waste reduction strategies into meal planning.
3. Prepare a presentation on sustainable meal planning.

### **Materials and Equipment Needed:**

- Computers or tablets for research
- Printed materials on local farms and markets
- Sample menus from local establishments
- Handouts on meal planning

### **Teacher Preparation:**

1. Prepare handouts and resources for meal planning activity.
2. Arrange access to sample menus from local establishments.

### **Activities and Procedures:**

1. Recap of Day 3 (5 minutes)
  - Review key points from the previous lesson.
2. Group Activity: Sustainable Meal Planning (35 minutes)
  - Students form groups and plan a meal using local and seasonal ingredients.
  - Provide handouts to guide their meal planning.
  - Use research from Day 2 to select ingredients and create a menu.
3. Presentation Preparation (10 minutes)
  - Groups prepare a presentation on their meal plan, including ingredient choices and sustainability considerations.
4. Reflection and Discussion (5 minutes)
  - Reflect on the challenges and benefits of planning a sustainable meal.

## **DAY 5 Presentation and Lab**

### **Purpose:**

Allow students to present their meal plans and conduct a food waste analysis lab.

### **Background Agricultural Connections:**

Analyze food waste to understand its impact on sustainability and agricultural practices.

### Learning Objectives:

1. Present a sustainable meal plan, explaining ingredient choices and sustainability.
2. Conduct a food waste analysis to measure and categorize waste.
3. Reflect on the importance of sustainability in culinary arts.

## Materials and Equipment Needed:

- Projector or screen for presentations
- Lab materials: compost bins, recycling bins, scales, food waste logs, potatoes, carrots, onions
- Handouts

## Teacher Preparation:

1. Prepare materials for student presentations.
2. Set up lab materials for the food waste analysis activity.

## Activities and Procedures:

### 1. Group Presentations (25 minutes)

- Groups present their sustainable meal plans, explaining ingredient choices and how they considered sustainability.

### 2. Class Lab: Food Waste Analysis (20 minutes)

Objective: Measure and analyze food waste to understand waste reduction techniques.

Procedure:

1. Introduce the concept of food waste and its environmental impact.
2. Distribute lab materials (compost bins, recycling bins, scales, food waste logs).
3. Students categorize and weigh common kitchen waste items.
4. Record data in food waste logs.
5. Discuss findings and brainstorm ways to reduce waste in future cooking activities.

### 3. Reflection and Discussion (10 minutes)

- Reflect on what they learned about sustainability throughout the week.
- Discuss how these practices can be applied in their daily lives and future culinary careers.

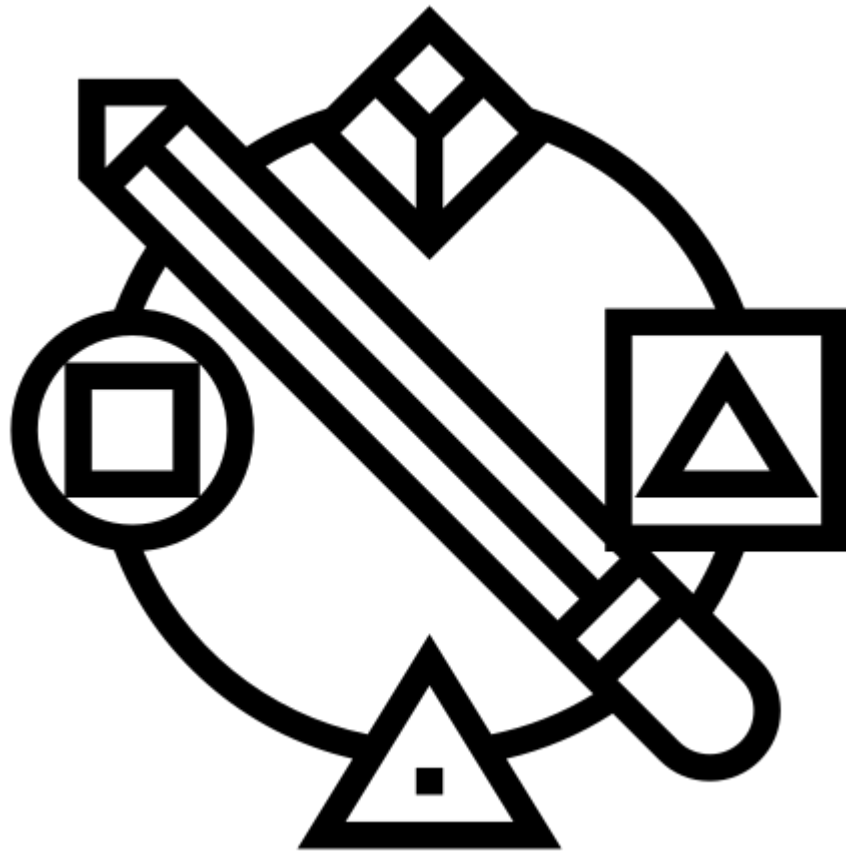
## Sources

- *Why The Future Of Cooking Is Going To Be Zero Waste*  
<https://youtu.be/sXmBA-u3kyg?si=UQjNWqCrzCFXQ37I>
- *How to Reduce Food Waste | Minimalist Kitchen Tips*  
[How to Reduce Food Waste | Minimalist Kitchen Tip](#)
- La Minestra Webpage (Facebook) <https://www.facebook.com/p/La-Minestra-100033419085792/>
- Drifters Bar & Grill <https://www.driftersbarandgrille.com/>
- Mad Mary's Steak House <https://madmaryssteakhouse.com/>
- Pierre's Capital City Farmer's Market <https://capcitymarket.wordpress.com/about/>

## Author

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# RESOURCES



# **POWERPOINT**

# Sustainable Culinary Practices: From Farm to Table

## Food Miles



- **Definition:** The distance food travels from its production location to the consumer.
- **Environmental impact:**
  - Increased transportation leads to higher carbon emissions.
  - Longer supply chains can result in more packaging waste.
- **Strategies to reduce food miles:** Buy locally, choose seasonal produce, and support nearby farmers' markets.

## Introduction to Sustainability

- **Key Points:**
  - Definition of sustainability: Balancing environmental, social, and economic factors to meet current needs without compromising future generations.
  - Importance in culinary arts: Reducing environmental impact, supporting local economies, and promoting health and well-being.



THREE PILLARS OF SUSTAINABILITY

## Introduction to Sustainable Cooking



Finland's Zero-Waste Cuisine

## Local Sourcing




- **Definition:** Obtaining ingredients from nearby farms and producers.
- **Benefits:**
  - Reduces food miles and carbon footprint.
  - Supports local farmers and strengthens community economies.
  - Provides fresher and more nutritious ingredients.
- **Examples:** Local businesses like Mad Mary's Steakhouse & Saloon and La Minetta.

## Waste Reduction Techniques

**Key Points:**

- **Importance:** Reducing waste minimizes environmental impact and promotes efficient resource use.
- **Techniques:**
  - **Composting:** Convert food scraps into nutrient-rich soil.
  - **Recycling:** Proper disposal of packaging materials.
  - **Zero-to-Tail Cooking:** Use all parts of an animal to minimize waste.
- **Benefits:** Decreases landfill use, reduces methane emissions, and supports a circular economy.





**Objective:** Measure and analyze food waste to understand waste reduction techniques.

**Procedure:**

1. Conduct a waste audit by categorizing food waste into compostable, recyclable, and non-recyclable items.
2. Use scales to weigh waste and record findings.
3. Discuss results and brainstorm ways to minimize waste in future cooking activities.

### Sustainable Cooking Methods

**Key Points:**

- **Energy-Efficient Appliances:** Use appliances that consume less energy and conserve resources.
- **Minimizing Water Usage:** Implement practices like steaming instead of boiling and using minimal water for washing produce.
- **Using Seasonal Ingredients:** Focus on ingredients that are in season to reduce environmental impact and support local agriculture.

 An infographic titled 'How to Cook Sustainably' is located on the right side of the slide. It features several icons and text boxes illustrating different sustainable cooking techniques, such as using energy-efficient appliances and minimizing water usage.

### Reflection and Discussion

- **Questions for Reflection:**
  - How can we incorporate sustainable practices into our daily lives?
  - What challenges might we face in implementing these practices?
  - How do our food choices impact the environment and society?
- **Discussion:** Encourage students to share their thoughts and experiences from the lesson.

 A photograph of a community garden is located on the right side of the slide. It shows several raised garden beds filled with various green plants, including leafy greens and herbs, growing in a well-maintained outdoor setting.

### Sustainable Meal Planning Activity

- **Instructions:**
  - Form groups and research local farms and markets for sourcing ingredients.
  - Plan a meal using local and seasonal ingredients.
  - Consider waste reduction techniques in meal preparation.
- **Guidelines:** Provide handouts with meal planning templates and research resources.

 A decorative background featuring various fruits and vegetables, including watermelon slices, oranges, lemons, and leafy greens, arranged in a colorful pattern.
 

**Websites:**

- Sustainable Table: [sustainabletable.org](http://sustainabletable.org)
- Farm to School: [farmtoschool.org](http://farmtoschool.org)

# Food Waste Analysis Lab

## Objective:

The objective of this lab is to measure and analyze food waste produced during a cooking activity. Students will learn how to categorize waste, understand its environmental impact, and develop strategies for reducing waste in the kitchen.

## Materials Needed:

- Compost bins
- Recycling bins
- Non-recyclable waste bins
- Kitchen scales
- Food waste logs or data recording sheets
- Labels and markers
- Gloves for handling waste
- Hand sanitizer
- Clipboards and pens
- Option: to do an analysis from food waste from previous lab or make a vegetable soup using vegetables *like potatoes and carrots or onions*

## Preparation:

### 1. Set Up Workstations:

Arrange the compost, recycling, and non-recyclable bins in a central location. Ensure that there are clear labels on each bin indicating what types of waste should go into them.

### 2. Prepare Data Sheets:

Provide each group with food waste logs or data recording sheets. These should include columns for the type of waste (compostable, recyclable, non-recyclable), weight, and notes.

### 3. Safety Instructions:

Discuss safety precautions, such as wearing gloves when handling waste and using hand sanitizer after the activity.

## Procedure:

### **Step 1: Introduction (10 minutes)**

#### Explain the Purpose:

Begin by explaining the purpose of the lab. Discuss the importance of reducing food waste in the culinary arts and its environmental impact. Highlight the difference between compostable, recyclable, and non-recyclable waste.

#### Group Organization:

Divide the class into small groups, with each group responsible for collecting and analyzing waste from a specific area of the kitchen or a specific type of meal preparation.

### **Step 2: Waste Collection and Categorization (15 minutes)**

Collect Waste:

Have each group collect waste produced during the cooking activity or from pre-sorted kitchen waste. Encourage them to think about common sources of waste, such as vegetable peelings, packaging, and food scraps.

Categorize Waste:

Instruct students to separate the waste into three categories: compostable, recyclable, and non-recyclable. Provide guidance on what belongs in each category:

- Compostable:\*\* Fruit and vegetable scraps, eggshells, coffee grounds, tea bags.
- Recyclable:\*\* Clean paper and cardboard, plastic bottles, glass jars, cans.
- Non-recyclable:\*\* Plastic wrap, greasy or soiled paper products, certain plastics.

### **Step 3: Weigh and Record (10 minutes)**

Weigh Waste:

Using the kitchen scales, each group should weigh the waste in each category. Encourage accuracy in measurement and recording.

Record Data:

Students record the weight of each category on their data sheets. They should also note any observations or questions they have about the waste (e.g., why certain items were categorized a certain way).

### **Step 4: Analysis and Discussion (10 minutes)**

Analyze Data:

Have each group analyze their data to identify the most common types of waste. Discuss the factors contributing to food waste and how it might be reduced.

Group Discussion:

Facilitate a class discussion where each group shares their findings. Questions to consider:

- What was the most common type of waste?
- Which category had the highest weight?
- How could the kitchen practices be adjusted to reduce waste in each category?

### **Step 5: Reflection and Strategy Development (10 minutes)**

Reflection:

Ask students to reflect on what they learned from the lab and how it changes their perspective on food waste. Encourage them to think about how these practices can be applied in other settings.

Develop Strategies:

Instruct each group to brainstorm and propose at least three strategies for reducing food waste in the kitchen. Strategies might include better meal planning, using more of each ingredient, or implementing more effective recycling practices.

**Wrap-Up:**

Summary:

Summarize the key takeaways from the lab. Emphasize the importance of waste reduction in promoting sustainability in the culinary arts.

**Next Steps:**

Encourage students to think about how they can implement these waste reduction strategies in their future cooking activities and daily lives.

# Assessment and Evaluation

## Unit Quiz: Sustainable Culinary Practices

### Multiple Choice Questions

1. What is the primary benefit of sourcing ingredients locally?

- a) It reduces food costs for consumers.
- b) It enhances the flavor of food.
- c) It reduces food miles and supports local economies.
- d) It increases the availability of exotic ingredients.

*Answer: c) It reduces food miles and supports local economies.*

2. What does the term "food miles" refer to?

- a) The distance food travels from the kitchen to the dining table.
- b) The distance food travels from the farm to the consumer.
- c) The weight of food per mile transported.
- d) The time it takes for food to be cooked and served.

*Answer: b) The distance food travels from the farm to the consumer.*

3. Which of the following is a method of reducing food waste?

- a) Using single-use plastics
- b) Composting food scraps
- c) Buying imported foods
- d) Using more processed foods

*Answer: b) Composting food scraps*

4. What is "nose-to-tail" cooking?

- a) Using all parts of a vegetable
- b) Cooking food from scratch
- c) Using all parts of an animal to minimize waste
- d) Cooking food at low temperatures

*Answer: c) Using all parts of an animal to minimize waste*

5. Which of the following best describes a sustainable cooking method?

- a) Using pre-packaged ingredients
- b) Cooking with high energy appliances
- c) Prioritizing seasonal and locally sourced ingredients
- d) Cooking with imported spices

*Answer: c) Prioritizing seasonal and locally sourced ingredients*

6. Why is composting considered a sustainable practice?

- a) It requires no effort from the consumer.
- b) It turns food waste into a resource for growing new plants.
- c) It reduces the cost of waste disposal.
- d) It makes food last longer.

*Answer: b) It turns food waste into a resource for growing new plants.*

Short Answer Questions

7. Explain how supporting local agriculture can contribute to environmental sustainability.\*\*

*Answer: Supporting local agriculture reduces the need for long-distance transportation, which decreases carbon emissions associated with food transport. It also helps maintain local biodiversity and supports sustainable farming practices that are often more environmentally friendly. Additionally, buying local strengthens the local economy, encouraging farmers to continue practicing sustainable methods.*

8. Describe two ways to reduce water usage in cooking and food preparation.

*Answer vary, sample responses:*

- *Use minimal water when washing vegetables and fruits, and reuse the rinse water for watering plants.*
- *Steam vegetables instead of boiling them to conserve water and retain nutrients.*

9. List three benefits of using seasonal ingredients in meal planning.

*Answer vary, sample responses:*

- *Seasonal ingredients are often fresher and more flavorful because they are harvested at their peak.*
- *They are usually more affordable due to their abundance and reduced transportation costs.*
- *Using seasonal ingredients supports local farmers and reduces the carbon footprint associated with transporting out-of-season produce from distant locations.*

10. How does food waste contribute to environmental issues, and what can be done to mitigate its impact?

*Answer vary, sample responses: Food waste contributes to environmental issues by generating methane, a potent greenhouse gas, when it decomposes in landfills. Mitigating its impact involves reducing food waste through proper planning, storing, and using leftovers. Composting food scraps can also transform waste into a valuable resource for soil enrichment, reducing landfill use and greenhouse gas emissions.*