Lesson Plan: "From Scraps to Startup: Sustainable Culinary Innovation"

Name of Activity

From Scraps to Startup: Turning Food Waste into Innovation

Purpose

To help students understand the role of sustainability in the culinary arts by exploring agricultural innovations that reduce food waste. Students will create a food product or kitchen concept that aligns with sustainable and entrepreneurial practices.

Background Agricultural Connections

Food waste is a growing global issue. Agriculture and culinary industries are interconnected, excess production and improper food handling contribute to waste. Recent innovations like precision farming, composting systems (e.g., AgriSmart), and AI-powered kitchen technology help reduce waste and promote sustainable practices. This lesson connects culinary practice with agricultural innovation and entrepreneurship.

Grade Levels

9th–12th (ProStart 1, ProStart 2)

Lesson Length

6 class periods (55 min each)

Learning Objectives

Students will:

- Identify the agricultural connection between food waste and sustainability.
- Understand the value of composting and food waste reduction in kitchen settings.
- Apply entrepreneurial thinking to create a sustainable food business idea.
- Pitch a product that aligns with agricultural innovation.

Materials and Equipment Needed

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- Chromebooks or devices with internet access
- Whiteboard or chart paper
- Scratch paper, pencils, markers
- Kitchen lab leftovers/scrap bin (optional for demo)
- Example slides from AgriSmart composting system (optional visual aid)
- Poster paper or Google Slides for student presentations
- Rubric for project evaluation

Teacher Preparation

- Preview and summarize key concepts from AgriSmart and BMC models.
- Create or display a mini compost setup or show a video of composting in action.
- Prep example logos, slogans, and packaging ideas for inspiration.
- Create a sample Business Model Canvas to show students.
- Group students based on skill level or interest.

Activities and Procedures

Day 1 – Introduction to Food Waste & Agri Innovation

1. Begin with discussion: “What do you throw away after a kitchen lab?”
2. Show a short clip or infographic on agricultural food waste and composting innovations.
3. Introduce AgriSmart Composting as a real-world solution.
4. Students brainstorm how food waste in their own kitchen labs could be reduced or reused.

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Day 2, 3, and 4 – Design Your Own Sustainable Product or Business

1. Introduce the “From Scraps to Startup” project challenge.

2. Students will create an innovative food product, menu item, or kitchen practice that promotes sustainability (e.g., a food truck that uses compostable packaging or a bakery that uses veggie scraps for broth bases).

3. Use the Business Model Canvas template to guide their planning (value proposition, customer, revenue, etc.).

4. Allow time for brainstorming, drawing, or developing a pitch.

Day 5 and 6 – Pitch & Reflect

1. Students create a short pitch (verbal, visual, or written) explaining:
    - Their product or service
    - How it reduces waste
    - How it ties to sustainability and agriculture
2. Peers vote on the most innovative idea using a rubric.
3. Wrap up with a reflection on how culinary skills and agricultural innovations go hand-in-hand.

References/Resources

- AgriSmart Composting System Poster & BMC
- USDA Agricultural Innovation Resources
- FCCLA Food Innovations STAR Event
- Thomas Frey’s article on drones in ag
- Ted Talk by Frank Wernecke on Drone Farming
- Business Model Canvas Tool