









FOOD TO FARM TRUCK

Student Guide

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Challenge Rationale

Two percent of the U.S. population is directly involved in production agriculture. Too often, people do not truly understand where their food comes from. This challenge addresses the lack of awareness around agriculture production and the process that food takes from farmer to consumer. The final product of this challenge is to create a food truck that analyzes the farm to fork process. Through this challenge, students will become more aware about how food travels from the farm to their community through this exciting challenge.

Establishing The Challenge

The Challenge

Americans enjoy an affordable and abundant food supply thanks to farming and ranching families. The families involved in production agriculture make up 2% of the U.S. population. Farms and ranchers come in all different sizes and with different production practices. Farm and ranches across the country provide safe low-cost products for American consumers. "One U.S. farm feeds 169 people annually in the U.S. and abroad." The future of farming is a growing concern in America as the average age of farmers increases, the number of individuals entering the farming occupation decreases, and the global population dramatically increases causing a higher demand for food produced annually. Through this challenge, students will become more informed about food production and sourcing.¹

¹ American Farm Bureau Foundation for Agriculture. (2024). Food and Farm Facts.

Establishing The Challenge

Challenge Question

With the challenge of the general population being disconnected from where their food comes from, your team has been selected to design a food truck that addresses the journey of food from farm to food truck.

THIS SOLUTION MUST ADDRESS THE FOLLOWING NEEDS:

- Track where the food for your menu comes from
- Provide a cost analysis for food items
- Understand labeling and marketing of food items
- Emphasize sourcing local ingredients when possible

SUCCESS WILL BE DETERMINED BY:

- Construction of a food truck menu of three to five items based on a selected food truck theme
- Creation of a budget for all items needed for the menu
- Providing an analysis of the farm to food truck journey for all ingredients in one menu item
- Producing a marketing campaign that advertises the foods sourced in your food truck business

STEP ONE

1 | IDENTIFY



Purpose of Step

Define the need and how it affects life globally, nationally, and locally. Research and consider how others have approached solving the need including how people have addressed this need historically. Describe why this challenge needs a solution and determine constraints (e.g., time, space, resources, etc.).

Student Prompts and Guiding Questions:

- How are agricultural products processed?
- Why is farming an important occupation?
- Why is there a potential for food sources to run out globally?
- What would happen if Americans ran out of food?
- Why is it important for food sources to be sustainable?
- Why are Americans curious about where their food comes from?

Signs of Step Completion

Students will present a description of the challenge to the facilitator. The description should include how this challenge affects communities globally, nationally, and locally. The description should also include ways in which others have addressed finding a solution and constraints to be considered (e.g., time, space, resources, etc.).



Important discoveries during this step:

- Define the problem as it relates to you locally
- Plans for the next step
(e.g., knowledge to gain, questions to answer, preparations to make, etc.)

STEP ONE: REFLECTION

1 | IDENTIFY



Important Discoveries During this Step:

Define the Problem as it Relates to You locally:

Plans for the Next Step (E.G. Knowledge to Gain, Questions to Answer, Preparations to Make, Etc.):

STEP TWO

2 | IMAGINE



Purpose of Step

Brainstorm solutions to the challenge. List all of your ideas – don't hold back! Discuss and select the best possible solutions.

Student Prompts and Guiding Questions:

- Are you curious about where your food comes from?
- Where does your food come from?
- What types of food do you eat from countries outside of the U.S.?
- What kinds of foods grow in the local community?
- How does food travel from farms to your community?
- How do growing seasons for crops impact the availability and affordability of food?
- How are food products marketed?
- What type of information can we find on the packaging of a food product?
- How are food labels beneficial to consumers? How could they be misleading?

Signs of Step Completion

Present a list of possible solutions to the identified challenge to the facilitator.

2 IMAGINE



STEP THREE

3 | DESIGN



Purpose of Step

Develop a possible solution and identify the materials needed to provide evidence for why the solution is creative, unique, and sustainable. Write out the steps to take and describe the expected outcomes.

Student Prompts and Guiding Questions:

- How does cost influence what products consumers purchase?
- How can I identify the journey a food product takes to get to me as a consumer?
- How do restaurants or food trucks determine what products to purchase?
- How can a restaurant or food truck keep production costs down?
- How does buying local ingredients directly impact agriculture production?
- Why is maintaining a food budget important for an emerging restaurant or food truck?

Signs of Step Completion

Present a detailed description of the solution as well as a written plan of how it could be carried out. Include the following in the plan: a materials list with budget (if building a physical model or conducting lab research), detailed directions, and expected outcomes.

STEP THREE: REFLECTION

3 | DESIGN



Important Discoveries During this Step:

Justify Your Model Design and the Materials You will Need:

Plans for the Next Step (E.G. Knowledge to Gain, Questions to Answer, Preparations to Make, Etc.):

STEP FOUR

4 | CREATE



Purpose of Step

Follow the design plan and construct the solution.

Student Prompts and Guiding Questions:

- What steps must you take to create the budget for your food truck?
- In what ways can you advertise your food truck menu?
- What are the different ways you can map the journey food products take to get to you?
- Consider the parameters of the challenge and what needs to be accomplished for it to be successful.

Signs of Step Completion

You will construct the solution and share with the facilitator.

STEP FOUR: REFLECTION

4 | CREATE



Important Discoveries During this Step:

Describe any Barriers You Overcame in Creating Your Model:

Plans for the Next Step (E.G. Knowledge to Gain, Questions to Answer, Preparations to Make, Etc.):

STEP FIVE

5 | TEST & IMPROVE



Purpose of Step

Test the design and collect qualitative and quantitative data. Discuss results and compare with the expected outcome. Seek areas of improvement and make changes where needed.

Student Prompts and Guiding Questions:

- How successful was the business plan in addressing the Farm to Food Truck challenge requirements?
- Were there any missing project components from the business plan?
- How successful do you feel the food truck menu provided was supporting the chosen theme?
- In what ways were local ingredients used to develop the menu?
- Was the Farm to Food Truck process complete? Did it highlight the one menu item selected?
- Were the sources of the one menu item ingredient identified accurately?
- Was the food truck budget calculated accurately?
- Based on their marketing/advertising tool, would you purchase the food truck menu items?
- What suggestions do you have for improvements to their business plan?
- What changes will you make to your design, based on feedback from your peer reviewers?

Signs of Step Completion

The students will keep records of all test trials and share data with the facilitator. Entries should include both qualitative and quantitative data. The students will also share recordings of any improvements made to the solution and the effect they had on the outcome.

STEP FIVE: REFLECTION

5 | TEST & IMPROVE



Important Discoveries During this Step:

Impacts to the Global, National, and Local Community:

Plans for the Next Step (E.G. Knowledge to Gain, Questions to Answer, Preparations to Make, Etc.):

STEP SIX

6 | SHARE



Purpose of Step

Communicate what was learned throughout the challenge. Share the design process, data, and conclusions on how the solution answers the challenge question.

Student Prompts and Guiding Questions:

- Develop a presentation of your final business plan, food truck design, improvements made throughout challenge, and menu cost analysis.

Signs of Step Completion

Present what was learned through the design process, including sharing how the solution addresses the problem, key aspects of design, data from test trials, and end results.

Extension Possibilities

- Partner with a local restaurant to discuss how they budget and buy menu items.
- Visit a local farm or ranch to find out how they contribute to the food system.
- Visit a local food pantry to find out where their food comes from.
- Meet with your cafeteria staff to find out how they purchase food on a budget.
- Meet with your cafeteria staff to plan a catering event based on your food truck menu.
- Use your food truck menu for a fundraiser; donate proceeds to a hunger-relief group.
- Partner with a food preparation and/or nutrition class to prepare your food truck meal.
- Partner with a physical education, health, and/or nutrition class to determine the nutritional value of your food truck menu.
- Visit a local food processing company to learn how they use commodities to make or develop new products.

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