



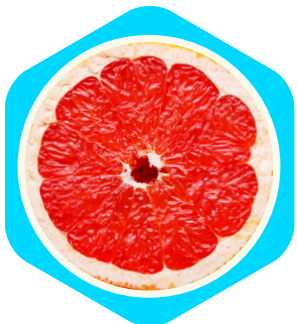
PART 4: ACCESS AND STORAGE TASK LIST

This is the list of tasks for Part 4: Access and Storage
Check them off as you complete them.

TASKS

- 4-1 Identifying and Mapping Food Access Points
- 4-2 Assessing Food Access Points
- 4-3 Identifying Local Edible Plants
- 4-4 Thinking About Food Storage
- 4-5 Experimenting with Food Storage
- 4-6 Collecting Access and Storage Oral Histories
- 4-7 Analyzing the Access and Storage Survey Data
- 4-8 Debriefing Access and Storage

In this part, the team will focus on researching and exploring where and how food is accessed and stored in the community. Research includes identifying and analyzing different access points for food and researching storage strategies to keep food safe for human consumption.



4-1

Identifying and Mapping Food Access Points

Welcome to Part 4: Access and Storage. In Part 3 the team collected data about the foods people eat in the community. Now the team will begin collecting data about where people are accessing this food and how they are storing it. Having access to food and being able to store it before it spoils can be issues for some people in a community. Understanding local food access and storage may help the team when working with the problem question, **How do we ensure good nutrition for all?** This may also help you understand what is influencing which food groups people choose to eat and why.

Objective



In this task, the team will identify on your research site map and score the locations of all places where food can be accessed. The team will use this map to focus research in later tasks to understand possible food access issues for different people in the community.

In this task, the team will be focusing on the following questions from the question map:

- **Where are all of the access points for food in the community?**
- **What evidence could we collect to help define food- and nutrition-related problems in our community?**

1. Go to the Task 4-1 folder and get the Identifying and Mapping Food Access Points instructions. You will also need the research site map you created in Task 2-1.



2. As a team, use the instructions and research site map to identify, map, and score all of the food access points in or around your research site.

3. As a team, discuss:

- How could this map be useful when thinking about the question, **Where are all of the access points for food in the community?**
- How could this map be useful when thinking about the problem question, **How do we ensure good nutrition for all?**

Hooray! You completed Task 4-1. Check it off the task list. *Go to Task 4-2!*



4-2

Assessing Food Access Points


In Task 4-1 the team identified and mapped where different food access points are within your research site and community. Now that you know where different types of food access points are located, you will do an in-depth assessment of each point. This assessment will help the team understand the characteristics and quality of each food access point in and around your research site. Understanding the characteristics and quality of these different food access points may help the team when working on the problem question, **How do we ensure good nutrition for all?**

Objective



In this task, the team will do a deeper assessment of the different food access points you identified and mapped in Task 4-1. The team will be focusing on the following questions from the question map:

- **What are the characteristics of the food offered at different access points in the community?**
- **What evidence could we collect to help define food- and nutrition-related problems in our community?**

1. Go to the Task 4-2 folder and get the Assessing Food Access Points—FOOD A Data Form or FOOD B Data Form. You will also need the research site map you created in Task 4-1. 
2. Determine which team members will be responsible for assessing each of the access points you have identified.
3. Go to each access point and complete the FOOD A Data Form or FOOD B Data Form for each.
4. As a team, discuss:
 - How could this assessment be useful when thinking about the question, **What are the characteristics of the food offered at different access points in the community?**
 - How could this assessment be useful when thinking about the problem question, **How do we ensure good nutrition for all?**

Hooray! You completed Task 4-2. Check it off the task list. *Go to Task 4-3!*



4-3 Identifying Local Edible Plants

In Task 4-2, the team conducted a deeper assessment of several food access points. You learned more about what types, quality, and prices of foods offered at these places. However, stores and markets are not the only places humans can access food. Edible plants that grow naturally in your community can be a sustainable source of food. In many communities, this can be part of a solution for urban and rural communities where food access points are not always accessible.


Objective



In this task, the team will conduct a plant survey within the area of the research site. Then, using credible resources, the team will determine whether any of these plants are edible. Using this data, the team can determine if these sources of food could be useful for the community.

In this task, the team will be focusing on the following questions from the question map.

- **Where are all of the access points for food in the community?**
- **What evidence could we collect to help define food- and nutrition-related problems in our community?**

1. Go to the Task 4-3 folder and get the plant survey instructions, Plant Survey Identification Form, and discussion questions . You  will also need your research site map.
2. Survey your research area for plants, following the directions in the task folder.
3. Use resources to identify each plant and determine if it is edible or not.
4. Discuss the questions in the task folder, based on whether you did or did not find edible plants.
5. As a team, discuss the following:
 - How could this survey be useful when thinking about the question, **Where are all of the access points for food in the community?**
 - How could this map be useful when thinking about the problem question, **How do we ensure good nutrition for all?**



4-4

Thinking About Food Storage

In Tasks 4-1, 4-2, and 4-3 the team identified and mapped food access points. Depending on the area you mapped, you may have noticed that some food access points are far away from areas where people live and not everyone has the same ways of getting to them. In some places people have to walk or drive long distances to access food. Some of the food they may want to access needs to be kept at a certain temperature so it remains safe to eat. If these foods are left out too long at a higher or lower temperature, they may start to form bacteria. This can lead to people getting sick. For people who have to commute far, especially in hotter climates, it is important that they have a way to store this food to keep it as close to the safe temperature as possible during transport and while storing it.

Objective



In this task, the team will explore different types of insulation that may aid in keeping food at a certain temperature over a specific length of time. Many countries' food safety guidelines suggest that refrigerated foods should not be left out at room temperature for longer than two hours, and when the temperature is above 32°C (90°F) it should not be left out for longer than one hour. To avoid the "danger zone" when food can grow dangerous levels of bacteria, the safest temperature for cold food is around 5°C (41°F) or below, and for hot food it is around 60°C (140°F) or above. Keep this in mind during this task.

In this task, the team will be focusing on the following questions from the question map:

- **What different food storage techniques are used locally and globally?**



1. Go to the Task 4-4 folder and get the Thinking About Food Storage experiment instructions. There is only one version of this task, but the materials can easily be adjusted, so use what you have available.
2. Complete the activity according to the instructions in the task folder.
3. After completing the activity, discuss how the use of different materials for food storage can be useful when thinking about the problem question, **How do we ensure good nutrition for all?**



4-5 Experimenting with Food Storage

In Task 4-4 the team learned that it is important to keep some foods at certain temperatures. Ensuring food stays at the proper temperature can keep it safe to eat. The team explored different materials to see which ones may help in storing these foods at different temperatures. With an understanding of different ways to store food, the team can now think about other problems people may encounter when trying to store or transport cold and hot food from the food access point back to their homes.


Objective



In this task, the team will experiment with designs for a device to keep food cool. The team will be given real-world scenarios where you can offer your help by designing a cooler that would be most beneficial in the given situation. Note that some scenarios may need different designs than others, based on how the person in the scenario accesses the food.

In this task, the team will be focusing on the following questions from the question map:

• What are challenges to accessing and storing food in the local community?

1. Go to the Task 4-5 folder and get the Experimenting with Food Storage activity sheets. There is only one version of this task, but it contains several scenarios to choose from. Select the one that works best for you, and use any materials you can access in your community in the design process. Have the team think about creative ways to reuse materials that are easily available. 
2. Complete the activity according to the instructions in the task folder.
3. After completing the activity, discuss how different methods of storing food can be useful when thinking about the problem question, **How do we ensure good nutrition for all?**

Hooray! You completed Task 4-5. Check it off the task list. *Go to Task 4-6!*



4-6

Collecting Access and Storage Oral Histories

In Task 2-5 and Task 3-6, the team collected oral histories about connections between food and the community's culture, identities, and histories. It is helpful to document and collect data about these types of connections in the community from a variety of perspectives. This will be particularly useful when you develop your community action and communication plan in Part 7.

Objective



In this task, the team will continue to interview people in the community to collect oral histories about food access and storage over time. Remember that oral history refers both to the method of documenting an oral testimony and the product of that process. In this task, the team will be focusing on the following questions from the question map in Task 1-10:

- **What are the connections between culture, identities, histories, and food in a community?**
- **What evidence could we collect to help define food- and nutrition-related problems in our community?**

1. Go to the Task 4-6 folder and get the list of interview questions, interview tips, and safety tips to use when conducting interviews in the community.



Pre-Interview

1. Read through the list of interview questions.
2. Make a list of people in your community you could interview. Think about interviewing the same people from Task 2-5 and Task 3-6, or the people you collected food journals from in Task 3-2. Consider:
 - Family
 - Friends
 - Neighbors
3. Identify any equipment the team could use to record audio or video of interviews.
4. Practice interviewing other team members, taking notes, and using audio/video recording equipment (if available).
5. Read through the pre-interview tips to keep in mind in the task folder.



4-6

**Research Tip**

Use the field safety tips in the safety documents on Learning Lab before going out into the community to survey or interview people. Be polite, never go alone, and always be aware of your surroundings.

Interview

1. Read through the interview tips to keep in mind in the task folder.
2. Set up and conduct the interviews.

Post-Interview

1. Compile all notes and any audio/video recordings from the interviews.
2. Analyze the notes and recordings.
 - Describe what you noticed in the interviews.
 - What are some interesting stories or information in the responses?
 - Identify any foods or stories that you were unfamiliar with.
 - Identify any foods or stories that you were familiar with.
 - Which questions did most people in the community have similar responses to?
 - Which questions did people in the community have different responses to?
3. Discuss how these oral history interviews could be useful when thinking about the question, **What are the connections between culture, identities, histories, and food in a community?**
4. Discuss how these oral history interviews could be useful when thinking about the problem question: **How do we ensure good nutrition for all?**



4-7

Analyzing the Access and Storage Survey Data

In Tasks 1-3, 2-2, and 3-7 the team collected survey data from the team and the community about what people think about food and nutrition.

Objective



In this task, the team will focus on analyzing the survey results of Part 4 of the survey. This analysis will help the team better understand the following questions from the question map in Task 1-10:

- **What do people in our local community think and know about food and nutrition?**
- **What are ways we can share and communicate our action plan with the local community?**

1. Go to the Task 4-7 folder and get the survey analysis instructions and questions.



2. Gather all of the surveys completed in Task 1-3 and Task 2-2.

3. In this task, the team will only look over part 4 of the survey: Access and Storage.

4. As a team, determine how to compile the answers to part 4 for all of the surveys collected in Task 1-3 and Task 2-2. You will want to analyze the compiled data for all surveys. Develop your own method for compiling the data for part 4, or use one of the methods in the instructions.

5. Create some graphs about this compiled data. Be creative!

6. Use the graphs and compiled data to answer these questions:

- What interesting patterns do you see in the data from the survey questions in part 4?
- Which questions did most people agree about?
- Which questions did people have different responses for?



Research Tip

As you may have noticed, the survey is broken into the same parts as this research guide. Analyze only the results from that part of the survey while working on that Part of the guide to make the analysis more manageable.



4-7

7. Discuss how this survey evidence could be useful when thinking about the question, What do people in our local community think and know about food and nutrition?
8. Discuss how this survey evidence could be useful when thinking about the question, What are ways we can share and communicate our action plan with the local community?
9. Discuss how this survey evidence could be useful when thinking about the problem question, How do we ensure good nutrition for all?
10. Select two or three questions from these survey questions, write a claim, and provide the supporting evidence for the claim based on the question and the data evidence collected. For example:
 - It is hard for people in our community to access fresh food.
 - Many people in our community use a personal vehicle to access food.
11. What evidence supports your claims? As a team, share some claims you created and the evidence that supports each claim, using this data.

Hooray! You completed Task 4-7. Check it off the task list. *Go to Task 4-8!*



4-8 Debriefing Access and Storage

This is the last task of Part 4: Access and Storage.

Objective



In this task, the team will debrief Part 4: Access and Storage. This is good to do before you move on to the next part. The objective is to think about and discuss helpful information that was gathered during that part before moving on.

Remember the team norms.

- Recognize the benefits of listening to a range of different perspectives and viewpoints.
- Be open to new ideas and perspectives that challenge your own.
- Be willing to cooperate with others to change things for the better.

Remember to use your meaningful conversation starters as needed throughout this discussion.

- I agree with _____ because . . .
- I disagree with _____ because . . .
- I'd like to go back to what _____ said about . . .
- I'd like to add . . .
- I noticed that . . .
- Another example is . . .

Remember when you are making claims from evidence to use the following sentences.

- I think this claim is best supported because . . .
- I do not think this claim is best supported because . . .
- I think this piece of evidence supports this claim because . . .
- I do not think this piece of evidence supports this claim because . . .



4-8



1. Go to the Task 4-8 folder to get the Debriefing the Access and Storage Data instructions.
2. Follow the instructions in the task folder to complete the six sections of the debrief.
 - Research Site Map Analysis
 - Community Partners
 - Perspectives
 - Identity
 - Question Map Analysis
 - Problem Question

Hooray! You completed Task 4-8 and Part 4. Check it off the task list.

Congratulations! You have completed **Part Four** of your research. Give yourself a pat on the back.

Continue to Part 5: Cooking and Preservation



Task 4-1. Identifying and Mapping Food Access Points

Make a List

1. Look at your research site map from Task 2-1. (If you have not yet done Task 2-1, do that task first). Depending on the current size of your research site, you may need to increase or decrease the size to include a variety of food access points on your map.
2. As a team, use the data table below to make a list of all food access points in and around your research site. A food access point is any place or business where you can get food items. Food access points may include:
 - Food markets and grocery stores
 - Restaurants
 - Street food stalls, trucks, and stands
 - Convenience stores, gas stations, and corner markets
 - Community, personal, and shared gardens
 - Community food pantries and food services
 - Locations of wild edible plants, such as fruits or vegetables
 - Food vending machines
3. For each location, make sure to document the address, cross-streets, or a general description of the approximate location or area to help the team when mapping.
4. Using your list of community partners from Task 2-6, identify people who could help add to your list of food access points. Contact the partner and ask them where they access food. This could include asking parents, friends, and family members where they access food most often. Add these places to your team list and don't forget to include some location information to help when mapping.

Add Food Access Points to Your Map

1. On your research site map from Task 2-1, add information for food access points to the map legend. Designate different colors or icons for the different types of access points you identified. This will help you later in your analysis.
2. Using the location information for each access point, plot each food access point on the research site map. Use the different symbols/icons/colors when plotting each access point.
3. If your map does not have a scale, consider adding one now. Use the instructions in Task 2-1 as needed to do so.



4. Are there any neighborhood boundaries for different communities that could be added to your map? Consider adding these boundaries now if you have not already done so.
5. Have you marked on your map where your team meets or where the people on your team live? Consider doing so now if you would like.

Name of access point	Access point type (market, restaurant, garden, etc.)	Location (address and description)	Notes



Add Transit and Parking Information to Your Map

If you haven't already done so, add transit location information to your map. You might include:

- Train/metro/subway stations
- Bus stops
- Parking lots
- Bike/scooter/skate board lanes/trails/routes
- Walking paths/routes/trails

Analyze the Map

1. Analyze the overall spread of different types of food access points across your map.
 - Are there any areas of your map where certain types of food access points are clustered? Why might this be?
 - Are there any areas of your map where there are very few food access points? Why might this be?

2. Do you see any trends in the availability of different types of food access points to different neighborhoods in your community, where your team meets, or near the homes of people on your team?
3. Do you see any potential food deserts? A food desert is a neighborhood or area of a community with poor or no access to healthy foods.
4. Do you see any food access points that can be easily reached using different types of transit (walk, bike, bus, train, car)?
5. Do you see any food access points that are not as easily reached using different types of transit (such as only accessible by car)?

Create Buffer Zones for Food Access Points

To calculate food accessibility scores for each food access point, the team must create buffer zones on the map using the food access point as the epicenter. Mark a circular buffer zone around each food access point at the following distances from the epicenter (that is, the food access point).

- 0.5 km (0.3 miles)
- 1.0 km (0.6 miles)
- 1.5 km (0.9 miles)
- 2.0 km (1.2 miles)

Calculate Food Accessibility Scores

1. Using the food accessibility point scale below, use the information from your team's map to begin compiling basic information about food accessibility in your research area. This should include:
 - Name of food access point
 - Food accessibility score
 - Number of residences in buffer zones
 - Number of transit options in buffer zones
2. Mark each point value on the Food Access Point List below.
3. Add up the points for each access point to determine a food accessibility score for each.

Food Accessibility Point Scale

Points for each residence present in each buffer zone:

Each residence in the 0.5 km buffer = 4 points
Each residence in the 1.0 km buffer = 3 points
Each residence in the 1.5 km buffer = 2 points
Each residence in the 2.0 km buffer = 1 point
Each residence outside of any buffer = 0 points

Each MOH* in the 0.5 km buffer = 8 points
Each MOH in the 1.0 km buffer = 6 points
Each MOH in the 1.5 km buffer = 4 points
Each MOH in the 2.0 km buffer = 2 points

***MOH** = Multi-Occupant Housing: apartment complexes, condo buildings, duplexes, group homes; any structure that is marketed and intended to hold several households.

Points for each transit option present in each buffer zone:

For each public transit station (train, bus, other) and non-car (walking, bike, scooter, moped) infrastructure (path/trail/lane) within the 0.5 km mile buffer = 2 points
For each parking lot within the 0.5 km buffer = 1 point

Categorization of Access Points

Mark the food access points with the highest and lowest accessibility scores (total points) on the Food Access Point List below.

Discuss

As a team, discuss your findings.









- Why do these access points have such high or low accessibility scores?

- Is food access a problem in our community? If so, what are some ideas of how we could make food more accessible?
- Are there any trends or relationships in the availability of food access points and population or income levels in the community?
- When looking at the data, are there any potential healthy food deserts (places without easy access to healthy food) in your community?
- What forms of transportation do most people currently use in your community?
- Are food access points easily accessible by walking or public transportation in your community?



Food Access Point List

Using your research area map, complete the following list to calculate your community's food accessibility score.

Name of access point	# of  0.5 km buffer (4 pts.)	# of  1.0 km buffer (3 pts.)	# of  1.5 km buffer (2 pts.)	# of  2.0 km buffer (1 pt.)	Total  points	# of  0.5 km buffer (2 pts.)	# of  0.5 km buffer (1 pt.)	Total  points	Total points



Task 4-2. Assessing Food Access Points—FOOD A Data Form

Name of food access point _____

Address _____

Phone number _____ Hours of operation _____

What kinds of food are available (fresh and/or processed)?

Are there foods from every major food group available here?

What meals can you eat here?

- Breakfast
- Lunch
- Dinner
- Snacks

What is your estimate of the average cost of a meal here?

- \$ (\$0–\$20 per meal)
- \$\$ (\$21–\$40 per meal)
- \$\$\$ (\$41–\$70 per meal)
- \$\$\$\$ (\$71+ per meal)

Notes



Task 4-2. Assessing Food Access Points—FOOD B Data Form

Part 1. General Business Information	
Researcher name	
Date	
Name of access point	
Business contact person and role	
Address	
Hours of operation	
Type of business (store, market, restaurant, food stall, etc.)	
Category of business (independent, chain, cooperative, sole trader, etc.)	
Are there similar businesses near this business? (if yes, list other businesses)	
Notes	
Part 2. Business Exterior Appearance (if applicable)	
Describe any exterior signage	
What type of	





signage is most prominent from outside the business?	
In what languages does the exterior signage appear?	
Are any specific food products being advertised? If yes, what types of products?	
Describe the exterior condition	
Is there a trash can available or nearby?	
Notes	
Part 3. Business Accessibility (if applicable)	
Does the business have parking for motorized vehicles?	
Does the business have parking for bicycles?	
Does the business have	





sidewalks and crosswalks for people to easily walk to it?	
Can the business be easily accessed by people in wheelchairs or who have difficulty walking?	
Can the business be easily accessed using public transportation?	
Notes	

Part 4. Product Placement and Advertising

When you first walk into or up to the business, what products are most prominently displayed?	
In what languages do product labels appear?	
What products are advertised inside the business?	

Part 5. Food Group Availability and Quality

How many varieties of each food group are available at this access point?

Fruits	Vegetables	Grains	Protein	Dairy
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Additional notes



Task 4-3. Identifying Local Edible Plants

Survey Your Research Area

With your team, visit the research area that is designated on your map from Task 2-1. Search for any plants you find within the research area. Sketch and, if possible, take pictures of the plants you find.

Optional: Take one or two samples, **if appropriate**, of plants you sketched or took pictures of. If you find a plant on private property, **do not take a sample without express permission from the property owner**.

If your research area is too large to reasonably survey on foot, select a section of your research area to survey. If you are surveying only a portion of your research area, be sure you and your team marks the map to show which portion of your research area was surveyed.

Identify Plants

Using the visual documentation you made and any samples taken from your team's survey of the research area, identify all the plants that you were able to find, using any field guides or other resources you have available. We suggest PlantSnap (free version) for those with access to mobile devices. Use the Plant Survey Identification Form to record your data.

Search for Edible Plants

Using your class copy of *Edible Wild Plants: A North American Field Guide to Over 200 Natural Foods* (or any other credible edible plant field guide), check to see if any of the plants your team identified are edible. Use the Plant Survey Identification Form to record your findings.

Team Discussion

If your team **found edible plants** in your survey area, discuss:

- Did it look as if people actively use those plants as food?
- Do you think people in your community know those plants are edible?
- Do you think using edible plants as landscaping and in community spaces is a good way of providing food for your community? Why or why not?

If you team **didn't find any edible plants** in your survey area, discuss:



- Are there any edible plants that you learned should be growing in your community?
- Why do you think these plants aren't present in your community?
- Do you think using edible plants as landscaping and in community spaces is a good way of providing food for your community? Why or why not?



Plant Survey Identification Form

Drawing (and, if applicable, picture file name)	Common name	Scientific name	Edible? (yes or no)



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Task 4-4. Thinking About Food Storage

In this task, the team is going to help Sasha. Sasha needs some help deciding what materials to use to keep his food cold. Sasha doesn't have a bicycle or a car and has to walk 5 kilometers, partly down a dirt road and partly on a sidewalk, to get to the nearest food access point. The temperature lately, because it is late summer, has been above 90°F. It takes Sasha about an hour and a half to walk to and from the food access point. What material would you suggest Sasha should use to keep his food cold?

What you'll need:

- Safety thermometers
- 1 plastic cup
- 1 Styrofoam cup
- 1 paper cup
- 1 glass cup
- 1 ceramic cup

Optional: cotton balls, aluminum foil, wool, coffee cup sleeves, cup lids or plastic wrap and rubber bands to make a lid, extra bigger plastic cups, ice, a blow dryer or heat lamp

1. Hand out a copy of the Testing Temperatures Record Sheet to each team.
2. Each team should get one thermometer and one of each type of cup.
3. Fill each cup up with cold water. (Preferably at 40°F or below—use ice or a refrigerator/freezer if necessary. If you use ice, you can also visually see how quickly it melts in some of the cups.)
4. Have students take an initial temperature reading and record the temperature for each cup on their Testing Temperatures Record Sheet.
5. Continue taking the temperature at regular intervals (every X number of minutes), recording the time and temperature on the Testing Temperatures Record Sheet until you have at least three readings.
 - Feel free to do more readings if you have more time.
 - Feel free to use ice or heat to speed up the process.
 - Remember to tell students to leave the thermometer in the cup long enough to get an accurate reading.
6. While teams are testing and recording their water temperatures, discuss the different types of insulators. For this activity teams used plastic, Styrofoam (polystyrene), paper, glass, and ceramics. Other insulators include wool, aluminum foil, cotton, and even air. While Sasha is trying to keep his food cold, discuss how these insulators can also keep food hot.
 - What if we placed a lid on the cups?
 - What if we put a sleeve on the cups made of a different material?
 - What if we placed the cups in a larger cup with cotton, wool, air, or aluminum foil between them?

Discussing heat: [Bill Nye discusses Heat Video \(1:56\)](#)

If you have time, you can run the same experiment using lids, cotton, wool, air, and aluminum foil.



7. Take the temperatures and times recorded on the Testing Temperatures Record Sheet and graph them on the Testing Temperatures Graphing Sheet.
8. Compare and contrast your results and decide which material you would suggest Sasha use, and explain why.



Testing Temperatures Record Sheet

Group name(s) _____ Date _____

Material	Time ----- Temperature			
	Plastic	-----	-----	-----
Paper	-----	-----	-----	-----
Glass	-----	-----	-----	-----
Styrofoam	-----	-----	-----	-----
Ceramic	-----	-----	-----	-----



Testing Temperatures Graphing Sheet

Group name(s) _____ Date _____

*Place your temperature on the Y axis and your time on the X axis and graph your data below.
Remember to make a color-coded key to show which material is being graphed.*





Task 4-5. Experimenting with Food Storage

1. Divide the team into groups. Each group can either choose one scenario to work on, or consider each scenario in turn.

Scenario 1: Jackie uses a bicycle to get to her favorite food access point in their city. It's the cheapest and offers the best produce. It's seven miles away from her third floor apartment. She can use a bike path for most of the route, but in some areas she has to ride on the sidewalk. She needs to be able to keep her cold food cold on her ride from the food access point back to her apartment in the summer, when the average temperature is 90°F. How would you design a cooler to help Jackie?

Scenario 2: Isla has to walk to the nearest food access point from her small village. It's a 10-mile walk from the village. The path is mostly dirt, with some pavement in places closer to the access point. It's an average of 69°F during the warmer months and 62°F in the colder months. She needs to be able to keep her cold food cold on her walk back to the village from the food access point. How would you design a cooler to help Isla?

Scenario 3: Oliver lives on a ranch in a very remote part of his country. His nearest food access point with all of the essentials to stock up on is about a two-and-a-half-hour drive away. Oliver has a small truck he takes to the food access point every two months to stock up on food and supplies. He needs to keep his cold food cold on his long drive back to his ranch from the food access point. How would you design a cooler to help Oliver?

Bonus Scenario: In the remote parts of some countries, water can take hours, sometimes even full days to retrieve and bring back to people's homes or communities. How could you design a container to make transporting water easier?

2. Each team will draw the design for a container, device, or method to address the scenario. Label all materials, dimensions, and features (wheels, a specific type of lid, shoulder straps, etc.), and explain why each material and feature was chosen.

Optional: Have each group pick a single scenario and actually build a prototype of a container or device based on their drawn design and test it. You can use the Grading Rubric for Prototypes sheet to rate the team's designs.

3. Before the teams start designing, either:

- Discuss factors to consider that may be different for each scenario as a entire class.
- Discuss factors to consider among each team, and then discuss again with the entire class after the designs are presented.



Things to consider in the design (depending on each scenario):

- **Durability:** Is it going to fall apart on rough terrain or melt in the heat? Is the lid going to fall off? Will it need to be handled a specific way?
- **Mobility:** If someone is walking and holding it, pulling it, pushing it or carrying it on their back or shoulders, would they be able to carry it? Is it too heavy? Does it need wheels or a strap?
- **Ease of use:** How long does it take to secure the lid? Does it require multiple people to use it?

4. Compare and contrast each team's design, depending on the scenario they selected.

5. Now it's time to think about your own community. Is there any scenario you notice in your own community that you could design something new for? Older people? Moms with multiple kids?

Bonus: Is there a better system you could design to help people in your community store and access food?

Design Sheet

Draw your design below. Don't forget to label the materials used in your design.



Grading Rubric for Prototypes

Groups	Temperature	Weight	Durability	Mobility	Ease of use	Total points
1						
2						
3						
4						
5						

General Rubric

Temperature—Cold

At 40°F = +5 points

1° to 5° below 40°F = +2 points

5° above 40°F = 0 points

10° above 40°F = -2 points

15° or more above 40°F = -5 points

Temperature—Hot

At 140°F = +5 points

1° to 5° above 140°F = +2 points

5° below 140°F = 0 points

10° below 140°F = -2 points

15° or more below 140°F = -5 points

Weight

At 10 pounds = +2 points

Above 10 pounds = 0 points

Below 10 pounds = +5 points

Durability

Did anything fall apart when transporting goods?

Yes = -5 points

No = +5 points

Mobility

How easy and comfortable is it to move the prototype a long distance?

Very easy = +5

Easy = +2



Somewhat easy = 0

Somewhat hard = -2

Very Hard = -5

Ease of Use

How long does it take to pack everything into the cooler and secure it?

Less than 5 minutes = +5 points

More than 5 minutes = 0 points



Task 4-6. Collecting Access and Storage Oral Histories

Interview Questions

1. When you were growing up, did your family grow their own food? Do you currently grow your own food? Have a garden or farm?
2. When you were growing up, where did you buy food from in your community (open markets/farmers' markets, local supermarket)? Where do you currently buy your food?
3. Has the number of access points for food increased or decreased in this community over time? Has buying food at a market or supermarket become more convenient or less convenient over time?
4. Have the characteristics of the places you buy food changed over time in your community? If so, how and why do you think they have changed?
5. How far and how long do you travel to markets to buy food? Has this changed over time? If so, how and why?
6. What were the ways your family stored food at your home when you were younger? Have food storage techniques changed over time in your home or the community?
7. Do you face any challenges to access and store healthy food in your home? If so, what are the reasons for these challenges?

Pre-Interview

Practice interviewing, taking notes, and using audio/video equipment (if available).

Tips to keep in mind:

- The interview should feel like a conversation. It is okay to skip between questions or ask them differently to help the person understand the question better.
- Sometimes the best question is, "Can you tell me more?"
- If your interviewee has paused, give them time to gather their thoughts instead of rushing ahead with the next question. They might be about to say something interesting.
- If you are using equipment to record the interviews, conduct test interviews to make sure the equipment is working properly. When the audio or video is played back, is it clear and easy to hear/see?
- If you are writing down the answers to the questions, practice taking notes while someone is talking. Consider conducting interviews in groups so that more than one person can help write down answers. Then after the interview, teammates can compare their notes for accuracy and consistency.

Interview

Tips to keep in mind:

- If possible, find a quiet, comfortable space that is free from external noise. This is especially important if you are recording these interviews.
- If you're using audio/video recording equipment, test all of the equipment before the interview.
- Make sure you have a pencil and paper to take notes.
- Introduce yourself to the interviewee and explain the research you are conducting and the purpose of the interview. Explain to the interviewee that your team is interested in learning



more about the connections between food and local community culture, identities, and histories.

- At the end of the interview, thank the interviewee for participating.

Post-Interview Analysis

1. Compile all notes and recordings from the team interviews.
2. Read the notes or listen to/watch the recordings of the interviews.
 - Describe what you notice.
 - What are some interesting things you first notice in their responses?
 - Identify any things they discuss that you are unfamiliar with.
 - Identify any things they discuss that you are familiar with.
 - Identify any responses that are useful when thinking about the question: *What are the connections between culture, identities, histories, and food in a community?*
 - Discuss how the responses from these oral history interviews could be useful when thinking about the problem question: *How do we ensure good nutrition for all?*





Task 4-7. Analyzing the Access and Storage Survey Data

Options for Compiling Survey Data

First you must compile the answers from the community surveys to all of the questions from part 3: Access and Storage. The team will look at the other parts of the survey in later tasks.

Here are some options for compiling the answers to the survey questions. But, as always, if you have a different method you prefer, do that!

Option 1

Hand out a blank survey to each person.

Go through each question and team members can raise their hands to vote for the answer they prefer. Some team members can count up the votes and others can write down the totals for the team.

Option 2

Write the questions on a board, paper, or computer where tallies can be compiled. Tally the responses and share the results.

Option 3

If you did the survey digitally or online, you should be able to see and export the results for each question.

Option 4

Create your own way of compiling survey data.

Graphing Survey Data

How could you graph parts of these survey results?

Which questions could you graph?

If you have the resources, pick some questions to graph that you think would be useful.

How would these graphs be useful when supporting claims with evidence?





Community Food Survey—Compiled Data

Use this blank survey to compile data.

Part 4. Access and Storage

Think about a usual day. How easy or hard is it for you to access fresh, healthy food?					
1. Very hard	2. Hard	3. Somewhat easy	4. Easy	5. Very easy	6. Unsure

Where do you buy food in your community? (check all that apply)			
1. Outdoor market	2. Farmers' market	3. Directly from farmers	4. Supermarket
5. Convenience store	6. Formal restaurant	7. Casual restaurant	6. Other (please specify) _____
From the places you indicated above, where do you go most frequently to buy food?			

How close to where you live is the location where you most often buy food?				
1. Very close	2. Somewhat close	3. Far	4. Very far	Unsure

How do you travel to the places where you buy food in your community?				
1. Personal vehicle	2. Motorcycle/motorbike	3. Public transportation	4. Taxi	5. Bicycle
6. Walk	7. Unsure	Other (please specify)		

Where do you store food for your household? (check all that apply)			
1. Outdoor structure	2. Refrigerator	3. Freezer	4. Community structure
5. Pantry/cabinet	6. Unsure	Other (please specify)	





Task 4-8. Debriefing the Access and Storage Data

Research Site Map Analysis

1. Look at the research site map you created in Task 2-1.
2. Look through all the data and evidence you have collected so far in Part 4.
3. Is there any data the team collected throughout Part 4 that could be added to this map? Locations of access points? Locations of oral history interviews? Add this data to the map and legend!
4. Analyze the map. Should the boundaries of the map change to accommodate any new information collected in Part 4? Adjust as needed.
5. Analyze the map. Does the map provide any new information that could be useful for future research?

Community Partners

1. As a team, look over the list of community partners you created in Task 2-6.
2. As a team, identify any community partners you could contact at this time. Which partners could help you get more information about different parts of your question map?
 - Make a plan as a team to contact and communicate with these partners.
 - Create a list of questions you would like to ask the partners.
 - E-mail, phone, or write to each partner with your questions.
 - If your team decides it is appropriate, invite the partner to meet with the team. Use your list of questions to guide your conversation and data collection.

Perspectives

1. Use the continuum setup from Task 1-8 (FOOD A or FOOD B both will work here) to discuss each perspective statement below.
2. Do this activity as individuals or in small groups. If you're working in small groups, each group sends one representative to the continuum.
3. Remember, pose each statement, take a minute, and let each team member or group think about their position on that statement.
 - Remember, the continuum goes from one side or corner of the room to the other; from "strongly agree" to "strongly disagree." Then there is "not sure" in the middle.
 - Explain that relative location is also important; that is, standing closer to the strongly agree or strongly disagree side of the room means you feel very strongly about this statement. If you only agree or disagree slightly, then being closer to the midpoint is a physical way of stating how you think and feel about the issue.





Social: The government should provide more assistance to people who are unable to easily access healthy food in their community.

Economic: It is okay for a country to export and sell their food to other countries to make money, even when citizens of the country need the food.

Move to a whole team discussion. Remember, team members must back up opinions with information and other team members must listen carefully to one another.

- Can individual team members explain to the team the reasons for their position on the continuum?
- How many team members changed their position after hearing people talk during the whole team discussion?
- What led you to change your mind?
- Ask team members on both sides of the issue to identify what they believe to be the strongest arguments and reasons they heard from the *opposing* side.

Identity

- Look at your personal and team identity maps from Task 1-1 and Task 1-5. What aspects of your or your team's Identity might influence your opinions on the perspective continuum?
- How might your decisions be influenced by these parts of your identity?
- Have any parts of your identity map changed?

Question Map Analysis

1. Look at your team question map from Task 1-10. Which questions on your map were addressed in Part 4: Access and Storage?
2. What evidence did you collect during Part Three that could be useful to answer any questions on the question map?
3. How could this evidence or information be useful to help develop an action plan to the problem question: *How do we ensure good nutrition for all?*
4. Take time to rearrange, update, modify, remove, or add any questions to your question map at this time.

Problem Question

Is there anything you learned in Part 4 that would be useful when thinking about the problem question: *How do we ensure good nutrition for all?*

