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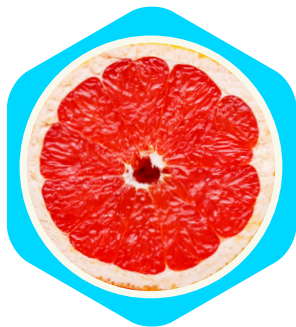
PART 3: BUILDING BLOCKS OF NUTRITION TASKS LIST

This is the list of tasks for Part 3: Building Blocks of Nutrition
Check them off as you complete them.

TASKS

- 3-1 ☐ Creating Food Journals
- 3-2 ☐ Collecting Community Food Journals
- 3-3 ☐ Understanding and Analyzing Food Groups
- 3-4 ☐ Assessing Food Guidelines
- 3-5 ☐ Estimating Portion Size and Serving Size
- 3-6 ☐ Picking Your Plate
- 3-7 ☐ Collecting Building Blocks Oral Histories
- 3-8 ☐ Analyzing Building Blocks Survey Data
- 3-9 ☐ Debriefing Building Blocks

In this part, your team will focus on learning about the basic building blocks of food and nutrition. Research will include comparing food diaries within your research sites, and studying local and global food guidelines and food sources.



3-1

Creating Food Journals

Welcome to Part 3: Building Blocks and Task 3-1. In Part 2 you learned more about what people in your community think about food and nutrition. Now the team will begin learning more about the basic building blocks of what people are eating. To do this, the team will need to create, collect, and analyze a variety of food journals from the community. Food journals are a tool to keep track of what people eat for several days. This data will help the team get a good understanding of the types and amounts of food people are regularly consuming in the community.

Objective



In this task, the team will learn about and analyze food journals for zoo animals and humans. Then the team will create food journals for themselves. In this task, the team will be focusing on the following question from the question map:

- **What are different foods and diets people eat to meet their daily needs?**

1. Go to the Task 3-1 folder and get the Ask the Team reading, Six Animal Pictures and Food Journals, Daily Bread Kid Pictures and Journals, and the Blank Food Journal form.
2. Read the **Ask the Team** reading about things the team at the zoo must consider when making decisions about the weekly food journal for each animal.
3. Make a list of interesting things the zoo staff consider when creating the weekly food journals for different animals.
4. Look at the [animal pictures and weekly food journals](#) for the six animals at the zoo. These journals include information about the food types, amounts, and days of the week each animal is fed each food item. (The days of the week are marked S M T W R F S. The first S is for Sunday, then Monday, and so on.)
 - Which animals are fed primarily meat or parts of other animals?
 - Which animals are fed primarily fruits and vegetables?
 - Which animals are fed a combination of meat, fruits, and vegetables?
 - Which animals are fed a higher diversity (number of different kinds) of foods in a week? Why do you think that might be?
 - Why do you think it's important for the zoo nutritionists to know the amounts of each food item being fed to each animal?



- How might a food journal like this be helpful when managing the diets of animals at a zoo?
5. Look through the [Daily Bread Kid Pictures and Journals](#) in the Task 3-1 folder. These journals document all of the foods each kid ate for one week. The photograph was then taken after the week, with each of the food items recreated for the photo.
 6. Compare and contrast the food journals of the different kids.
 - Which kids, if any, regularly eat non-meat food items, such as fruits, vegetables, grains, breads, and rice throughout the week?
 - Which kids, if any, regularly eat a mixture of meats and non-meat items throughout the week?
 - Which kids, if any, regularly eat primarily meat throughout the week?
 - Which kids, if any, regularly eat sugary, processed, or premade foods?
 - Which kids do you think eat the highest diversity (number of different kinds) of foods in a week? Why do you think that might be?
 7. Now that you are familiar with food journals, it is time to create your own. Use the [Blank Food Journal](#) to document all the foods you eat in one week. If one week is too long, pick a shorter amount of time that's between one and seven days. (Leave the Food groups column blank for now; you will complete that in Task 3-3.) Optional: Take photographs of all your food to include in your journal.
 8. After you have completed your food journal, look it over and consider:
 - How much and how often do you eat fruits, vegetables, grains, breads, rice, meat, dairy?
 - How much and how often do you cook your own food instead of eating prepared food made outside your home?
 - How much and how often do you eat or drink sugary or salty foods and snacks?
 - How diverse (number of different kinds) is the food you eat?
 - Do you normally eat alone or with other people?
 - How are you generally feeling when you are eating?
 9. How might a food journal be useful when thinking about the question, **What are different foods and diets people eat to meet their daily needs?**
 10. How might food journals be useful when thinking about the problem question, **How do we ensure good nutrition for all?**

Hooray! You completed Task 3-1. Check it off the task list. [Go to Task 3-2!](#)



3-2

Collecting Community Food Journals

In Task 3-1, the team learned about food journals and created your own. Keep these team journals in a safe place; you will use them later in your research. Now it's time to collect journals from across the research site. Food journals from a variety of people across the research site can provide helpful data, evidence, and a history of food in your community. This will be particularly useful to help you understand the diets of people of different ages, places in the community, and cultural backgrounds.

Objective



In this task, the team will collect food journals from a variety of different people in the research site. The team will be focusing on the following questions from the question map:

- **What are different foods and diets people eat to meet their daily needs?**
- **What evidence could we collect to help define food- and nutrition-related problems in our community?**

1. Go to the Task 3-2 folder and get the Collecting Food Journals—Blank Journal. You will also need your research site map from Task 2-1.
2. Identify and make a list of people you could work with to collect food journals. Options include family and friends, neighbors who live in research site, and community partners identified in Task 2-6.
3. Determine how many days of data you want to collect from each person.
4. Work with the people you identify to collect the data from them to complete their food journals. (Note: The Food groups column will be completed by the team in Task 3-3, so leave it blank for now.)
5. On your research site map you created in Task 2-1, plot the location of each person from whom you collected food journal data.
6. How might the data from these food journals be useful when thinking about the problem question, **How do we ensure good nutrition for all?**



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



3-3

Understanding and Analyzing Food Groups

In Task 3-1 and Task 3-2 the team collected a variety of food journals from the community. These journals provide data on all the things people eat during a period of time. You may have noticed in these journals that people eat many different types of food. Because of this variety, it can be difficult to analyze the journals. Creating a smaller number of categories or groups of foods can help. By establishing food groups, long lists of different foods can be sorted into shorter lists of categories. This sorting will help you analyze the data the team collects when working with the problem question, **How do we ensure good nutrition for all?**

Objective



In this task, you will learn about different food groups. The team will then analyze global consumption data for some of the different food groups. Finally, the team will conduct a food group analysis of the data in the food journals collected in Task 3-1 and Task 3-2. You will be focusing on the following questions from the question map:

- What are the basic food groups of good nutrition?
- What are different foods and diets people eat to meet their daily needs?

1. Go to the Task 3-3 folder and get the Food Group Card Game and Global Food Group Consumption Data. You will also need the food journals from Task 3-1 and Task 3-2.



2. Play the food group card game, following the instructions in the task folder.
3. Graph the game data and discuss the following:
 - What are the five major food groups?
 - What are some similarities and differences between the foods that make up each food group?
4. Look at the global food group consumption data in the task folder.
5. Use the questions in the data file to analyze and discuss the food group consumption data. How might this global food group consumption data



be useful when thinking about the problem question, **How do we ensure good nutrition for all?**

6. Look at the food journals the team collected in Task 3-1 and Task 3-2. The last column of these food journals is labeled "Food groups." For each meal on the journals, identify and write which food groups were eaten, based on the information provided.
7. If the team is unable to determine which food groups were eaten in a meal, mark it "unknown." If the team is unfamiliar with a food, conduct research on that item, follow up with the person who wrote that food journal, or ask any partners you identified in Task 2-6 to help you with this analysis.
8. For each journal, identify the following:
 - Which food groups were most commonly eaten by the person?
 - Which food groups were least commonly eaten by the person?
 - Does the person eat a balance of all food groups? If not, what would you suggest to this person to eat a better balance of all food groups?
9. Looking across all of the journals collected, identify:
 - Which food groups were most commonly eaten?
 - Which food groups were least commonly eaten?
 - When looking at all the journals, do people in your community generally eat a balance of all food groups? If not, what would you suggest to these people to eat a better balance of all food groups?
10. How might this global food group consumption data be useful when thinking about the problem question, **How do we ensure good nutrition for all?**

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



3-4

Assessing Food Guidelines


In Task 3-3 the team learned more about the different food groups. A balanced diet starts by including all of the food groups every day. However, depending on where you live, how food is grouped and the suggested amounts of each food group may be different. Different countries create food guidelines to help communicate to the people in and outside the country what makes up a healthy diet. Understanding the similarities and differences between food guidelines across different countries is useful when thinking about how nutrition is communicated in different places and on a global scale. This exploration will also help the team think about how guidelines like these could help people in your community and when working with the problem question, **How do we ensure good nutrition for all?**

Objective



In this task, the team will explore the similarities and differences between food guidelines from different countries. The team will then identify, gather, and analyze food guidelines from your country to be used throughout your research. The team will be focusing on the following questions from the question map:

- **What are different nutritional guidelines and how are they used locally and globally?**

1. Go to the Task 3-4 folder and get the food guidelines images and world map. 
2. Use the world map to locate your country and the countries for each set of guidelines.
3. Compare and contrast the images from the different country guidelines.
 - Which food groups are represented in the guidelines from each country?
 - What are similar or different ways the country chose to visualize their guidelines? Why do you think they chose to visualize them in that way?
 - How does the amount of each food group represented compare between the different countries?
 - Which food groups are the largest across all of the countries?
 - Which food groups are smaller across all of the countries?
 - What are some similarities and differences between the foods that make up each food group?



4. Identify whether your country has food guidelines. Use the link in the task folder to research this online, or contact your local library or department of health to obtain a copy.
5. If guidelines exist in your country, use the same questions from step 3 to compare and contrast your local food guidelines to the others you have already assessed. If guidelines do not exist in your country, determine what you think they should contain and what they should look like.
6. Analyze the Dietary Guidelines World Map in the task folder. This map shows which countries (in green) have guidelines and which countries (in gray) do not.
 - What patterns do you see in this map of global dietary guideline data?
 - How could this data be useful when thinking about the problem question or other questions on your question map?
7. Analyze the Classification of the Countries with and Without Dietary Guidelines data table in the task folder.
 - What relationship do you see in the data between income level and dietary guidelines?
 - How could this data be useful when thinking about the problem question or other questions on your question map?
8. Analyze the Summary of the Most Common Messages in the Guidelines by Income Level graph.
 - What similarities and difference do you see in the data between different income levels and the messages they are communicating in their guidelines?
 - What do you think may be causing these similarities or differences in messages?
 - How could this data be useful when thinking about the problem question or other questions on your question map?

Hooray! You completed Task 3-4. Check it off the task list. *Go to Task 3-5!*



3-5

Estimating Portion Size and Serving Size

Throughout Part 3 the team has learned about the different foods and food groups people eat in your community. In Task 3-4, the team explored various food guidelines from around the world. These guidelines provide recommendations for the amounts of each food group that should be eaten. In the guidelines the team may have seen the terms **portion size** and **serving size**. You may have also seen these terms on the Nutrition Facts labels on packaged foods you buy. This information can help people make decisions about the amount of that food to eat.

However, sometimes the serving size information is not provided on a label, or you need to measure a smaller amount from a large package and you do not have a measuring device. In these cases, it can be helpful to calibrate a mental or physical tool, such as your hand, to help you make these measurements and decisions.

Objective



In this task, the team will learn about the difference between portion size and serving size. The team will calibrate a tool, such as your hand, as a measuring device to determine the serving sizes of different foods. The team will then learn how to read a Nutrition Facts label to determine the serving size of that product. Finally, the team will use their measuring device to measure out serving sizes of some different products. In this task, the team will be focusing on the following questions from the question map:

- How are portion and serving size useful to manage nutrition?

1. Go to the Task 3-5 folder and get Estimating Portion Size and Serving Size activity sheets.
2. Complete the activity according to the instructions in the task folder.
3. After completing the activity, discuss as a team how your measuring tool, Nutrition Facts labels, and understanding serving size and portion size could be useful when thinking about the problem question, **How do we ensure good nutrition for all?**



Hooray! You completed Task 3-5. Check it off the task list. *Go to Task 3-6!*



3-6

Picking Your Plate

In Part 3, the team has learned about different food groups, guidelines, portions, and foods people eat in the community. Every day, people in different places are using this knowledge to make informed decisions about what they put on their plate where they live. Throughout Part 3 the team has begun learning about the many different recommendations and food groups to put on your plate to meet daily nutritional requirements in different places. It is helpful to start thinking about how all of this information is useful to you when making decisions about meals throughout a day in your home or community.

Objective



In this task, the team will play the game **Pick Your Plate!**. In this game, the team will virtually travel to different countries to create three meals to think about how to construct daily meals within different countries and on various budgets. In this task, the team will be focusing on the following questions from the question map.

- What are different food and diets people eat to meet their daily needs?
- What are the basic food groups of good nutrition?
- What are the different nutritional guidelines and how are they used locally and globally?
- How are portion and serving size useful to manage nutrition?

1. Go to the Task 3-6 folder and get the **Pick Your Plate!** data table.



2. Access the **Pick Your Plate!** game at:
<https://ssec.si.edu/pick-your-plate>

3. The data table has two trials for each country level of the game. Use the data table during game play to collect the results of Trial one of each country level in the game.



3-6

4. After all teams have completed Trial one of each country, stop for discussion and analysis.
5. Play Trial Two of each country level. Compare and contrast you results.
6. Discuss how the Pick Your Plate! game could be useful when thinking about the problem question: **How do we ensure good nutrition for all?**



Hooray! You completed Task 3-6. Check it off the task list. *Go to Task 3-7!*



3-7

Collecting Building Blocks Oral Histories

In Task 2-5, 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 from a variety of perspectives so you can become aware of these types of connections in the community. This will be particularly useful when you develop your community action and communication plans in Part 7.

Objective



In this task, the team will continue to interview people to collect oral histories about food groups and food guidelines and their behaviors over time. Remember that oral history refers both to the method of documenting an oral testimony and to 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 3-7 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 or the people you collected food journals from in Task 3-2. Consider:
 - Family
 - Friends
 - Neighbors
 - Other adults or peers in the community
3. Identify any equipment the team could use to record audio or video of the interviews.



3-7

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.

Interview

1. Read through 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?**

Hooray! You completed Task 3-7. Check it off the task list. *Go to Task 3-8!*



3-8

Analyzing Building Blocks Survey Data

In Task 1-3 and Task 2-2, 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 results of part 3 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 3-8 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 only part 3 of the surveys, Nutritional Building Blocks.
4. As a team, determine how to compile the answers to part 3 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, or use one of the methods in the instructions.
5. Create some graphs about this compiled data. Use the instructions and examples in the task folder to help you. 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 parts 3?



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.



3-8

- Which questions did most people agree about?
 - Which questions did people have different responses for?
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:
 - People in our community are not very familiar with the local food guidelines for what to eat.
 - Many people in our community frequently eat alone.
 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 3-8. Check it off the task list. *Go to Task 3-9!*



3-9

Debriefing Building Blocks

This is the last task of Part 3: Building Blocks.

Objective



In this task, the team will debrief Part 3: Building Blocks. 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 . . .



3-9

1. Go to the Task 3-9 folder to get the Debriefing the Building Blocks 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 3-9 and Part Three. Check it off the task list.

Congratulations, you have completed **Part 3** of your research. Give yourself a pat on the back. You now know more about the basic building blocks of good nutrition. Keep this research easily available. Think about how it could help with your final project.

The next part of your research will explore access and storage of food in and around your research site. This includes learning about:

- Where are all of the access points for food in our community?
- What are the characteristics of the food available at different access points?
- What are different food storage techniques used locally and globally?
- What are local challenges to accessing and storing food for good nutrition?

Continue to Part 4: Access and Storage



Notes:



FOOD!: Task 3-1 Creating Food Journals

Behind the scenes in the restaurant kitchen that feeds the National Zoo's residents

12 June 2018 By Micaela Jemison from Smithsonian Insider

"One cannot think well, love well, sleep well if one has not dined well," Virginia Woolf once said.

Woolf's sentiment is one that the staff at the Smithsonian's National Zoo in Washington, D.C., take to heart. The animals there dine not just for nourishment but for the delight of all the senses and of the mind. So forget the reservations, white tablecloths, mother-of-pearl caviar spoons and the like. There is a lot to learn about the art of fine dining—National Zoo style.

Start with tantalizing aromas

Who doesn't love the sweet smell and enticing taste of pumpkin spice? Warm feelings of fall leaves and cozy fires bubble to the surface when we detect that first whiff of this spicy goodness. Turns out, lions love this seasonal scent just as much as we do.

Pumpkin spice is a favorite scent of the National Zoo's lions, sending them into wave of rolling, rubbing and scent marking. In this photo, African lion Luke investigates a log that Great Cats staff sprinkled with pumpkin spice. (Photo by Meghan Murphy)



Batang, an orangutan at the National Zoo enjoys the taste of a pumpkin supplied by the Zoo's commissary. (Photo by Meghan Murphy)



"The lions take a long time rolling around in that scent and getting it all over themselves," says Hilary Colton, animal keeper and vice chair of the National Zoo's Enrichment and Training Committee.

Zoo staff scatter a range of spices, extracts, fur and other scents around the Zoo's many animal habitats, encouraging animals to sniff and explore. Pumpkin spice is a favorite of the lions, sending them into a flurry of activity—rolling, rubbing and scent marking.

"The lions will scent mark the same way our cats do at home in that space," says Colton. "We get a lot of behavior from using smell. We don't have to use a lot because humans don't have the entire spectrum of scent receptors that some of our animals do."

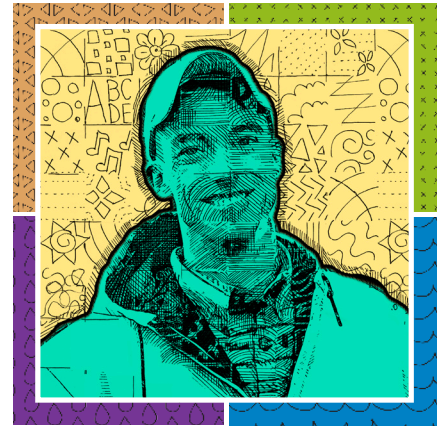
Use the best ingredients

Clark, the National Zoo's prehensile-tailed Brazilian porcupine enjoys some watermelon. (Mehgan Murphy photo)



You would expect only the finest ingredients at a Michelin-star restaurant and the animals at the Zoo receive nothing less.

"We use restaurant-grade produce. We don't take seconds or donations," explains Mike Maslanka, senior nutritionist and head of the Zoo's Department of Nutrition Science. "We really pay attention to quality."

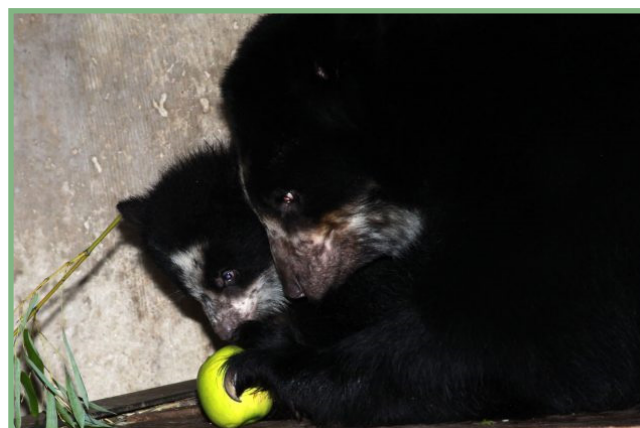


A pygmy falcon chick hatched at the National Zoo was hand-fed a diet of anoles, pinky mice, crickets, fuzzy mice, hairless mice, meal worms and natural balance meat cubes. Daily supplemental feedings were complicated for Zoo staff by the chick's very aggressive parents. (Photo by Mehgan Murphy)



Like a top-rated restaurant, the day starts before the sun has risen with trucks—the very same that deliver to local grocery stores—dropping off a range of fresh fruits, vegetables and meats. In addition, the zoo's commissary gets some very special deliveries that are popular with its animal patrons.

"Mealworms and crickets come into the building once a week but they don't stay long— they immediately they go out to the park. If we store insects here we have insects running all over the place," Maslanka says.



An Andean bear cub and its mother prepare to enjoy an apple at the National Zoo. (Photo by Karen Abbott)

While the meerkats and dwarf mongooses in the Small Mammal House love to dine on the live crickets, delivering their food can be challenging.

"Sometimes, with the UPS truck full of crickets, we'll have the great cricket escape because one of the boxes has accidentally opened," he says.



Cool carrots are served up to one of the National Zoo's North American river otters on a sweltering day in summer. (National Zoo photo)

Play with your food

The simplest of foods can give us the greatest of pleasures. Take air-popped popcorn for example. By itself, it is a light and tiny treat, but add it to a length of specialized PVC pipe and it creates hours of fun for the Zoo's elephants.

"The elephant keepers have made these pretty cool feeding devices out of PVC pipe," says Colton. "The pipes have small holes in the top and places to store popcorn all throughout the tube. So, if the elephants blow with enough force in the bottom of the tube, it scatters the popcorn all over their exhibit. They can then spend hours searching for each little piece."



National Zoo silverback gorilla, Baraka, enjoys a bag of popcorn as part of the Zoo's enrichment program. Gorillas are cognitive primates that spend much of their day foraging for food in the wild. Zoo animal care staff and nutritionists keep them mentally stimulated through food-based, problem-solving activities—such as figuring out how to open a bag containing delicious popcorn.

Popcorn is a popular food for encouraging natural foraging behavior in elephants and apes. Spending hours picking through the grasses of their exhibits to find all the individual pieces of food helps the apes stay mentally stimulated and engaged with their surroundings.

Dress it up with condiments

Many people like to add extra flavor to french fries with a little ketchup or mustard, and the animals at the Smithsonian's National Zoo are no different. This is especially handy when the clinical nutritionists at the Zoo need to get a picky eater excited about a healthful but uninspiring meal.

During a Valentine's Day event at the National Zoo, Biologist Matt Evans feeds an Aldabra tortoise a treat consisting of beet juice, beets, carrots, sweet potatoes and gelatin. (Photo by Jennifer Zoon)

Beet pulp is a far cry from french fries. It resembles cardboard but is high in digestible fiber. Normally fed to horses, this dry shredded material is produced from the remains of sugar beets after the sugar has been extracted.

Beet pulp in itself is not all that appetizing to its intended elephant diners. But add a little hot sauce, and you have a winning dish.





"If you just put the beet pulp on the ground the elephant isn't going to eat it," explains Maslanka. "We mix it with ketchup, mustard or hot sauce in order to get that into them because it is not inherently a palatable thing."

Keep it local

Mike Maslanka carries a load of fresh, locally-grown bamboo that will be served to the National Zoo's giant pandas. (National Zoo photo)

The Zoo was into farm-to-table dining long before the trend took hold in Washington, D.C. restaurants. The Smithsonian's National Zoo and Conservation Biology Institute (SCBI) is the only such organization in the U.S. to grow all of its own hay forages, including the mountains of bamboo to feed its famous pandas.

"Our bamboo is sourced from within a 75-mile radius of the Zoo," Maslanka explains. "Right now, we are cutting bamboo from the Zoo grounds and the grounds of SCBI three to four days a week, as well as from 20 to 25 private landowners we have partnerships with."



While keeping a giant panda in bamboo can be challenging, this fibrous food is not the only leafy delicacy grown for them. Corn also is grown in small amounts, not only on the 3,200-acre SCBI property at the facility in Front Royal, Virginia, but also on the Ape House's rooftop garden.



Fresh corn-on-the cob is enjoyed by the National Zoo's pale-headed saki, a small New World monkey native to South America. (National Zoo photo)

"The pandas really like the corn stalks," Maslanka says. "I thought it would be a bigger hit when the corn was shorter, before the sugar had left the plant and gone into the ear. Turns out it wasn't until the stalk has set the ear that the animals really started to prefer it. We had to rip the ears off and just give them stalks."

One animal's leftovers are another's treat. What the pandas won't eat, the apes are more than happy to munch.

"When fresh corn is in season the apes take advantage of that. They like the stalks and the silks as well as the actual vegetable," Colton says.

Tailor your menu to your guests



Each food preparation station in the National Zoo's giant restaurant kitchen contains a diet book that outlines the meals for the 1,800-plus animals dining at the Zoo each day. As indicated on these pages displayed by Mike Maslanka, apple pieces, banana (no peel), and orange (no peel) are a few of the items on the menu for the Zoo's Brazilian agoutis. The book even contains the agouti's names: Hazelnut, Nutella and Filbert. *(Photo by John Barrat)*

Any dinner party host knows that it can be difficult to serve a meal that will make all of your guests happy. But most hosts don't make an individual meal for each guest, unless you are among the dedicated commissary staff at the National Zoo.

To guide this mammoth task, each food preparation station in the Zoo's giant restaurant kitchen has a diet book that outlines the meals for more than 1,800 animals dining at the Zoo each day.

A red panda at the National Zoo's Small Mammal House enjoys its meal outside in a blizzard on Jan. 23, 2016. Red pandas are well adapted to cold climates. Their thick fur covers their paws completely. (Smithsonian's National Zoo photo)

"The diet book is basically the recipe book for the animal that is getting fed," Maslanka explains. "The recipes come from either myself or our other clinical nutritionist and they are based on ingredients that we mix and match to meet the target nutrient values for the animal in question."

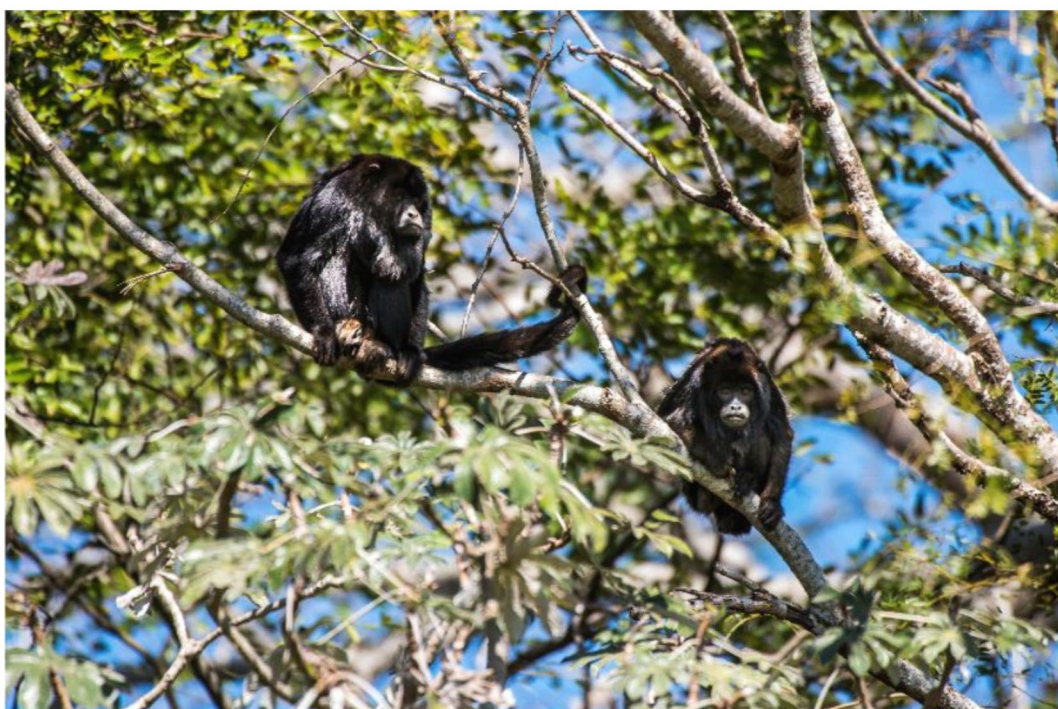


"We provide variety by providing a rotation of items that vary day to day," Maslanka says.



Task 3-1 Creating Food Journals – Animal Pictures

Black Howler Monkey





Smithsonian
National Zoological Park

DIET RECORD

Scientific Name *Alouatta caraya*
Common Name Black Howler Monkey
Accession No.

House Name
Date of Birth 21-Aug-96
Sex
Location

STANDARD DIET FOR		1	ANIMALS	Date	
Item	Food Type	Amount	Measure	Wgt	DAY
1	LEAF EATER FOOD, GORILLA (Marion) - 2# paper bag, AM	50	g	S M T W R F S	
2	LEAF EATER FOOD, GORILLA (Marion) - 2# paper bag, PM	50	g	S M T W R F S	
Use an 6-qt container.					
3	GREENS, ASSORTED, WHOLE LEAF	175	g	S M T W R F S	
Item 4: kale, spinach, chicory, romaine					
Separate leaves, remove rubber bands. Use minimum of 3 types of greens.					
4	CARROT, 2-3" PIECES	75	g	S	W F
5	SWEET POTATO, 2-3" PIECES	75	g	M	R
6	BEET, 2-3" PIECES	75	g	T	S
7	GREEN PEPPER, 2-3" PIECES	35	g	S	R
8	BROCCOLI, WITH STEM, 2-3" PIECES	35	g	M	F
9	GREEN BEANS, WHOLE	35	g	S T	S
10	CELERY, 2-3" PIECES	35	g	M W	S
11	CUCUMBER, 2-3" PIECES	35	g	T R	
12	CORN ON COB, 1" SLICES	35	g	W F	
13	ORANGE, WITH PEEL, 1" PIECES	20	g	S	F
14	APPLE OR PEAR, WITH PEEL, 1" PIECES	15	g	M	S
15	MANGO OR PAPAYA, WITH PEEL, 1" PIECES	15	g	S T	
16	MELON, NO RIND, 1" PIECES	15	g	M W	
18	TOMATO, 1" PIECES	15	g	T R	
17	BANANA, WITH PEEL, 1" PIECES	25	g	W F	
18	GRAPES, REMOVE FROM STEMS	15	g	R S	

Nutritionist:

Commissary Manager:

FEED AS INDICATED. DO NOT ALTER DIET. IF CHANGE IS REQUIRED, PROVIDE DETAILS IN DIET
CHANGE REQUEST FORM.



Blue Poison Dart Frog





DIET RECORD

Scientific Name *Dendrobates azureus*
Common Name Blue Poison Dart Frog
Accession No.

House Name
Date of Birth
Sex
Location

STANDARD DIET FOR	1	ANIMAL	Date
-------------------	---	--------	------

Item	Food Type	Amount								
		Measure	Wgt							
1	CRICKETS, PINHEAD	10 each	# g	S	M	T	W	R	F	S
2	FRUIT FLIES (<i>D. melanogaster</i>)	15 each	# g	S	M	T	W	R	F	S
3	BEAN BEETLES									

Notes:

- 1 CRICKETS must be maintained on INSECT SUPPLEMENT.
- 2 Record animal's body weight frequency (TARGET BW RANGE = #-# kg).
- 3 Note any item refusals on daily report.
- 4

Nutritionist:

Commissary Manager:



Grand Cayman Iguana





Scientific Name *Cyclura lewisi lewisi*
Common Name Grand Cayman Iguana
Accession No.

House Name
Date of Birth 18-Jun-05
Sex
Location

STANDARD DIET FOR	1	ANIMAL	Date
-------------------	---	--------	------

Item	Food Type	Amount	Measure	Wgt	DAY
BREEDING SEASON (JAN - MAY):					
1	REPTILE MIXED GREENS (NZP prep)	120	g	M	W F
2	IGUANA MAINTENANCE DIET, DRY (Zeigler Brothers)	20	g	M	W F
3	MIXED VEGETABLES (NZP prep)	20	g	M	W F
4	SWEET POTATO, SHREDDED (NZP prep)	10	g	M	W F
5	MIXED SQUASH (NZP prep)	10	g	M	W F
Mix Items 2-5 and place on top of Item 1.					
6	IGUANA MAINTENANCE DIET, DRY (Zeigler Brothers)	40	g	S M	W R F

OTHER TIMES OF YEAR:					
1	REPTILE MIXED GREENS (NZP prep)	120	g	M T W R F	
2	IGUANA MAINTENANCE DIET, DRY (Zeigler Brothers)	20	g	M T W R F	
3	MIXED VEGETABLES (NZP prep)	20	g	M T W R F	
4	SWEET POTATO, SHREDDED (NZP prep)	10	g	M T W R F	
5	MIXED SQUASH (NZP prep)	10	g	M T W R F	
Mix Items 2-5 and place on top of Item 1.					
6	IGUANA MAINTENANCE DIET, DRY (Zeigler Brothers)	40	g	M T W R F	

Notes:

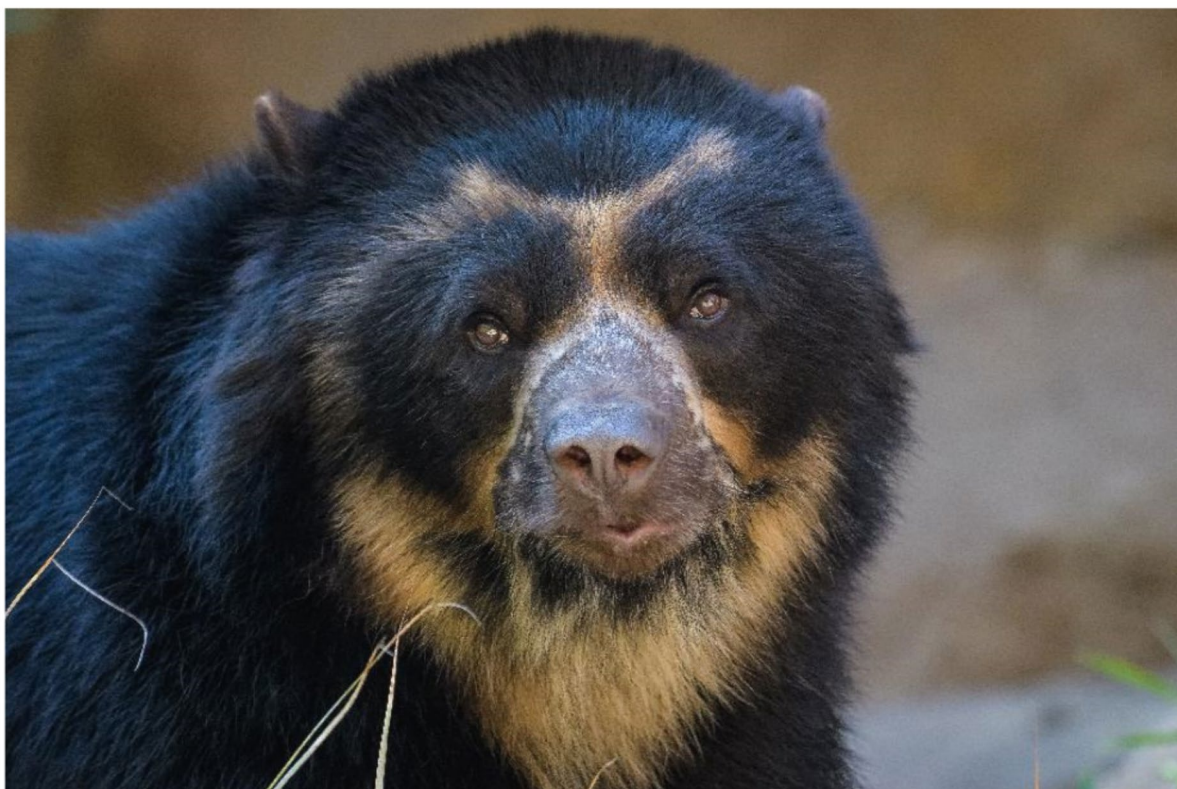
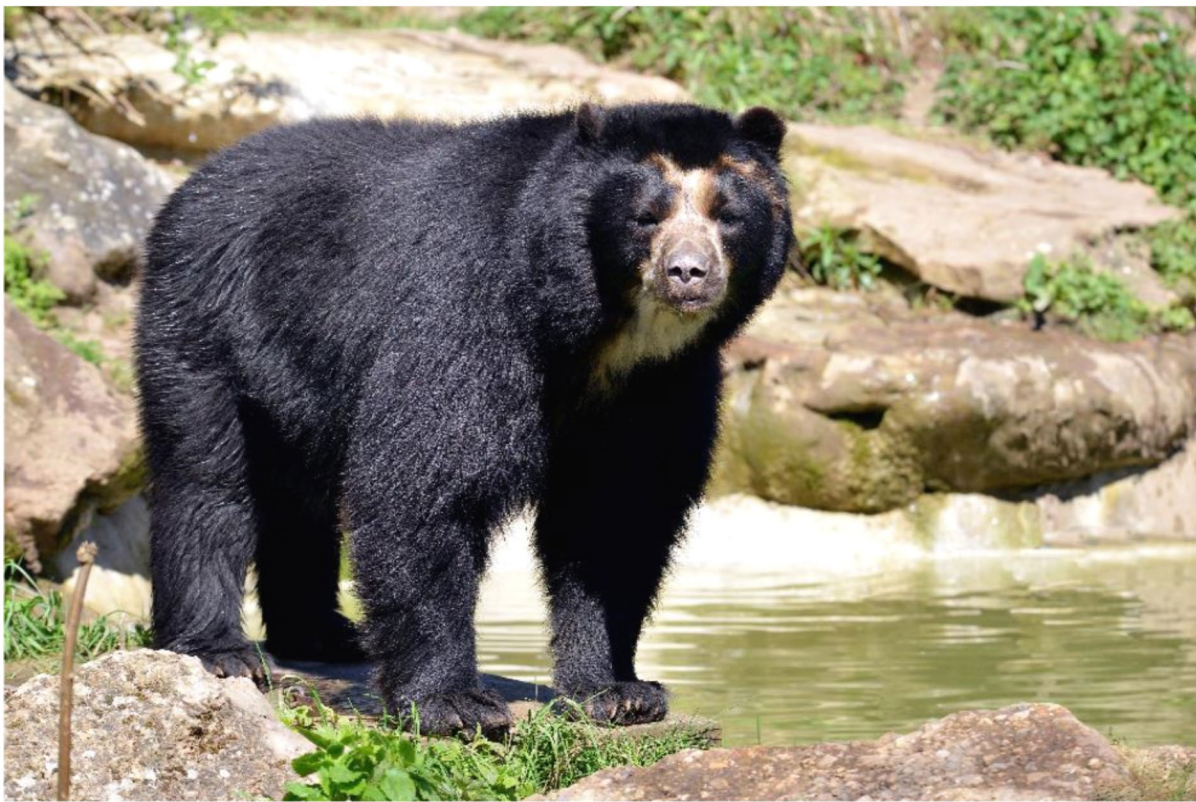
- 1 Accessioned 21-Oct-1998.
- 2 Record animal's body weight monthly (TARGET BW RANGE = kg).
- 3 Note any item refusals on daily report.
- 4

Nutritionist:

Commissary Manager:



Spectacled Bear





Smithsonian
National Zoological Park

DIET RECORD

Scientific Name *Tremarctos ornatus*

Common Name Spectacled Bear

Accession No.

House Name

Date of Birth 21-Dec-05

Sex

Location

STANDARD DIET FOR	1	ANIMAL	Date	D	A	Y
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Item	Food Type	Amount	Measure	Wgt	S	M	T	W	R	F	S
1	OMNIVORE DIET (Mazuri 5635)			220 g	S	M	T	W	R	F	S
2	PRIMATE BROWSE DIET (Mazuri 5MA4)			300 g	S	M	T	W	R	F	S
3	VEGETABLE, VARIABLE			1650 g	S	M	T	W	R	F	S
4	FRUIT, VARIABLE			420 g	S	M	T	W	R	F	S
5	GRAPES ON STEM			220 g	S	M	T	W	R	F	S
6	BONE, HALF FEMUR	1 half		# g	S					R	
7	CAPELIN			180 g	S				W		

Notes:

- 1 Record animal's body weight monthly.
- 2 WINTER TARGET BW RANGE = ## kg; SUMMER TARGET BW RANGE = ## kg
- 3 Note any item refusals on daily report.
- 4

Nutritionist:

Commissary Manager:

FEED AS INDICATED. DO NOT ALTER DIET.
IF CHANGE IS REQUIRED, PROVIDE DETAILS IN DIET CHANGE REQUEST VIA CURATOR.



Transvaal Lion





DIET RECORD

Scientific Name *Panthera leo krugeri*
Common Name Transvaal Lion
Accession No.

House Name
Date of Birth
Sex
Location

STANDARD DIET FOR		1	ANIMAL	Date	
Item	Food Type	Amount	Measure	Wgt	DAY
1	PREMIUM BEEF FELINE (Central Nebraska)			3550 g	S M T W R F S
2	BONE, KNUCKLE	1 whole			S R
3	RABBITS, LARGE	1 whole			M

Notes:

- Record animal's body weight frequency (TARGET BW RANGE = XX-XX kg).
- Note any item refusals on daily report.
-
-

Nutritionist:

Commissary Manager:



White-Nosed Coati





DIET RECORD

Scientific Name *Nasua narica*
Common Name White-nosed coati
Accession No.

House Name
Date of Birth
Sex
Location

STANDARD DIET FOR		2	ANIMALS	Date							
Item	Food Type	Amount		DAY							
		Measure	Wgt	S	M	T	W	R	F	S	
1	PREMIUM BEEF FELINE (Central Nebraska)		150 g	S	M	T	W	R	F	S	
2	DOG FOOD, LIGHT ADULT (Hills 7785)		70 g	S	M	T	W	R	F	S	
3	FRUIT, VARIABLE, NO ORANGE OR MANGO		200 g	S	M	T	W	R	F	S	
4	CRICKETS, ADULT		10 g	S	M	T	W	R	F	S	
5	MEALWORMS		10 g	S	M	T	W	R	F	S	
At keeper's discretion, earthworms may be substituted for other insects, for training.											
6	EGG, HARD-BOILED	2 whole	g		M			R			

Notes:

- Record animal's body weight frequency (TARGET BW RANGE = #-# kg).
- Note any item refusals on daily report.
-
-

Nutritionist:

Commissary Manager:

FEED AS INDICATED. DO NOT ALTER DIET.
IF CHANGE IS REQUIRED, PROVIDE DETAILS IN DIET CHANGE REQUEST VIA CURATOR.



Task 3-1 Creating Food Journals – Daily Bread Kid Food Journals

Anchal Sahani, 10, Chembur, Mumbai, India

Anchal lives in a tiny tin shack on a construction site in a suburb of Mumbai with her parents and two siblings. Her father makes less than \$5 a day, just enough for her mother to prepare okra & cauliflower curry, lentils and roti from scratch. Anchal would like to return to the farm where she was born in Bihar, go to school like other kids and eventually become a teacher, but she's kept busy with household chores and looking after her baby brother. When she has time, she dresses up and leaves the construction site to enjoy the fragrance of jasmine and lotus and to watch the neighborhood kids playing cricket and running free. While on her walks, Anchal collects brightly colored chocolate wrappers she finds along the road by the grocery store. Anchal wishes her mother would love her the way she loves her baby brother.



Photo: Gregg Segal, from *Daily Bread* published by Powerhouse Books, June 2019



**Anchal Sahani's Food Journal**

Date	Meal	Item	Amount	Brand	Notes
03.03.2017 Friday	Breakfast	Thick Chapati Mix vege of Potato, Egg plant & tomato fried in Garlic, onion and Curry leaves with green chillies	2 X 60 Gms x 100 Gms	Homemade	08:00 AM
	Lunch	Thick Chapati -Same Vege as breakfast-	1/2 X 30 Gms x 50 Gms	Homemade	15:45 PM
	Snacks	Colored sugar candies	1 x 50 Gms	Cadbury Gems	13:00 PM
	Dinner	Thick Chapati Jackfruit vege with spicy curry	2 X 60 Gms x 50 Gms	Homemade	22:00 PM
	Extra	Green Grapes chocolate	X 6 x 1 50 Gms	snickers	18:00 PM
04.03.2017 Saturday	Breakfast	Thick Chapati Bitter Gourd fried with onions & green chilly	2 X 60 Gms x 70 Gms	Homemade	09:00 AM
	Lunch	Thick Chapati Bitter Gourd fried with onions & green chilly	1 X 60 Gms x 30 Gms	Homemade	15:00 PM
	Snacks	Ice Tango Fried Rolls flour & red chilly, added coloring	1 x 15 ML 2 x 10 Gm	Street junk	13:00 PM
	Dinner	White Rice Lentils Gourd with Spice & potato curry	X 100 Gms X 50 Gms X 80 Gms	Home made	22:00 PM
	Extra	Lollipop	X 1	Street junk	22:30 PM





05.03.2017 Sunday	Breakfast	Choco Biscuit	X 4	Bourbon	09:00 AM
	Lunch	Thick Chapati Egg plant, Soya, Potato with curry leaves, garlic and onions	2 X 60 Gms x 100 Gms	Homemade	12:45 PM
	Snacks	Fried Rolls flour & red chilly, added coloring	2 x 10 Gm	Street junk	18:00 PM
	Dinner	White Rice Lentils Fried Salmon	X 100 Gms X 50 Gms 1 X 80 Gms	Home made	22:00 PM
	Extra				
06.03.2017 Monday	Breakfast	Milk Tea Biscuit	1 cup x 5	Homemade Marie	7:00 AM
	Lunch	Thick Chapati Jack fruit cooked with curry leaves, garlic and onions	2 X 60 Gms x 100 Gms	Homemade	09:45 AM
	Snacks	Thick Chapati	1 x 60 Gms	Homemade	13:00 PM
	Dinner	Thick Chapati Okra cooked with Potato in spices	2 X 60 Gms x 100 Gms	Homemade	22:00 PM
	Extra	Fried Rolls flour & red chilly, added coloring Lollipop	2 x 10 Gm x 1	Street junk Street junk	18:00 PM
07.03.2017 Tuesday	Breakfast	Milk Tea Biscuit	1 cup x 3	Homemade Marie	7:00 AM
	Lunch	Thick Chapati Egg Plant cooked with potato and spices	2 X 60 Gms x 100 Gms	Homemade	10:00 AM
	Snacks	Candy bar sugar & flour Green grapes	X 1 X 5	Street junk	12:00 PM
	Dinner	Thick Chapati	2 X 60 Gms	Homemade	22:00 PM





		Egg Plant cooked with potato and spices	x 100 Gms		
	Extra	Chocolate	x 1 25 gms	5Star	
08.03.2017 Wednesday	Breakfast	Biscuits	X 4	Marie vita	08:00 AM
	Lunch	Thick Chapati Spinach dry fried in spice	2 X 60 Gms x 100 Gm	Homemade	13:00 PM
	Snacks	Choco Biscuit	X 4	Bourbon	18:00 PM
	Dinner	White Rice Lentils Fish in Curry	X 150 Gms X 50 Gms	Homemade Mackerel	22:00 PM
	Extra	Chocolate Ice Cream	X 1 5 GMS X 1 25 Gms	Melody Amul cup Vanila	22:40 PM
09.03.2017	Breakfast	Tea & Milk White Bread Fruit Jam	X 1 cup X 3 Slices	Homemade Mapro	08:15 AM
Thursday	Lunch	Chapati Black Lentils In Spices	X 2 X 100 Gms	Homemade	12:00 PM
	Snacks	Tea & Milk White Bread Fruit Jam	X 1 cup X 2 Slices	Homemade Mapro	18:00 PM
	Dinner	White Rice Lentils Black Lentils In Spices	X 100 gms X 50 gms X 100 Gms	Homemade	21:20 PM
	Extra	Chocolate Ice Cream	X 4- 5 GMS X 1 25 Gms	Melody Amul cup Vanila	21:40 PM





Beryl Oh Jynn, 8, Kuala Lumpur, Malaysia.

Beryl lives in a quiet condominium with her parents and two brothers. She goes to S. J. K. Han Ming Puchong, a national Chinese school walking distance from home. Beryl's dad is an engineer and her mother runs a day care. Beryl's earliest memory of food is porridge and cake. Her favorite dish is spaghetti with carbonara sauce. Beryl grows bok choy and spinach in her balcony garden, it is not permitted to drink sodas and she refuses to eat ginger. She would like to be a cheerleader.



Photo: Gregg Segal, from *Daily Bread* published by Powerhouse Books, June 2019



Beryl Oh Jynn's Food Journal**Daily Bread Food Journal**

Date	Meal	Item	Amount	Brand	Notes
Monday 16/03/17	Breakfast	Cereal	160g	Honey Star	
		Hot Milo	240 ml	Milo	
		Banana	1 piece		
	Lunch	Rice	170g		
		Diced pumpkin &	4 table spoons		
		Chicken			
		water	240 ml		
	Snacks	Braised fish cake	170g		
		noodle			
		water	240ml		
	Dinner	Brown Rice	160g		
		Fish Stomach Soup	1 bowl		
		with minced pork			
		& carrot			
		Stir Fried Lettuce	1 table spoon		
	Extra	Water	240ml		
		Blue Berry Jam	2 slices	Massimo Bread	
		Sandwich		Vita Organic Jam	
Tuesday 17/03/17	Breakfast	Milo	240ml	MILO	
		Biscuits	3 pieces	HUP SENG	
	Lunch	Rice	160g		
		stir fried red bean	4 table spoons		
		with red onion in tomato sauce			
		water	240ml		
	Snacks	Mash Potato	100g		
		Chocolate Bun		Massimo	
	Dinner	Seaweed soup with	1 bowl		
		Fried bean Curd,			
		tomato & minced pork			
		Brown Rice	160g		
		Stir Fried Vege	1 table spoon		Beans & Carrot slice
	Extra	Stir fried chinese			
		sausages	few slices		
		water	240ml		





Daily Bread Food Journal

Date	Meal	Item	Amount	Brand	Notes
Wednesday 18/03/17	Breakfast	Apple	half apple		
		Hot Milo	240ml	MILO	
		Biscuits	3 pieces	HUP SENG	
	Lunch				
		Spaghetti with mushroom sauce	170g	Campbell Mushroom	Sauce
		water	240ml		
	Snacks	Fried Meehun	180g	Hawker Stall	
	Dinner	KFC Snack Plate	1 box	KFC	
		Iced lemon tea	240ml		
	Extra				
Thursday 19/03/17	Breakfast	hot milo	240 ml	MILO	
		Cheese Bun	1 piece	Local Bakery	
		Raisin Bun	1 piece	Local Bakery	
	Lunch	Fried Noodle	180g	Hawker Stall	
		Sliced Cucumbers	6 Slices		
		water	240ml		
	Snacks	Cheese bun	1 piece	Local Bakery	
		Barley Water	240ml		
	Dinner	Brown Rice	160g		
		Braised potato with pork & bean curd	4 table spoon		
		Red Dragon Fruit	1 piece		
		water	240ml		
	Extra				



**Daily Bread Food Journal**

Date	Meal	Item	Amount	Brand	Notes
Friday 20/03/17	Breakfast	Hot Milo	240ml	MILO	
		Cereals with milk	170g	Kellogg's	
	Lunch	Fried Rice	170g		
		water	240ml		
	Snacks	Cookies	3 pieces	Munchy's	
	Dinner	Bak Kut Teh	1 bowl	Local Restaurant	Herbal Soup with pork, bean curd
		Dough Fritters	few pieces		mushrooms
		Onion Rice	160g		
		Pineapple	2 slices		
		water	240 ml		
	Extra				
Saturday 21/03/17	Breakfast	Cereals with Milk	160g	KOKOCRUNCH	
				CORNFLAKES	
		Hot Milo	240ml		
	Lunch	Diced pumpkin Rice	1 bowl 170g		
		carrot & chicken			
		water	240ml		
	Snacks				
	Dinner	Herb Chicken Soup	1 bowl		
		Brown Rice	160g		
		water	240ml		
	Extra				





Daily Bread Food Journal

Date	Meal	Item	Amount	Brand	Notes
Sunday 22/03/17	Breakfast	Hot Milo	240ml	MILO	
		Biscuits	3 slices	HUP SENG	
	Lunch	Rice	160g		
		Fish Ball Soup			
		with broccoli, Onion &	1 bowl		
		Potato			
	Snacks	water	240ml		
		French Toast	1 slice	Massimo Bread	
	Dinner	Pan Mee	180g	Local Restaurant	Chinese noodle with anchovies & minced pork
		Sundae Ice Cream	1 cup	Mc Donald's	
	Extra				





Daria Joy Cullen, 6, Pasadena, California, United States of America

Daria loves bacon, pasta, popcorn slathered with butter, milk chocolate and other sweets, particularly mint chocolate chip ice-cream. She won't eat fruits and vegetables of any kind, even as a toddler, not even mashed bananas or apple sauce. Her doctor is concerned about Daria's low weight and limited diet and her parents are concerned she may have an overactive gag reflex. Daria's role model is her big sister, who can make friends and play the violin effortlessly. For fun, Daria entertains her friends, impersonating a monkey. When she grows up, Daria would like to be a dog trainer. If she had enough money, she'd buy a horse and a pug.



Photo: Gregg Segal, from *Daily Bread* published by Powerhouse Books, June 2019





Daria Cullen's Food Journal

Tuesday, 2/9/16

Breakfast

- 4 spinach raviolis (no sauce)



- 2 pieces of bacon



- 2 children's vitamins



Morning snack

- crackers



Lunch

- pasta with tomato sauce



Afternoon snack

- granola bar



Late afternoon snack

- Pirate's Booty
- Green Juice Popsicle



Dinner

- Joe's Os (no milk)



Dessert night:

- Vanilla ice cream
- 2 Girl Scout cookies (thin mint)





Wednesday, 2/10/16

Breakfast

- 2 pieces bacon
- 4 spinach raviolis
- 2 children's vitamins

Morning snack:

- granola bar

Lunch (believe me, we sent more – she just doesn't eat it!)

- 2 spinach raviolis

Afternoon snack:

- green juice popsicle

Dinner

- pasta with tomato sauce
- green juice (3 oz., with 3 oz. water)

Homework complete treat:

- 1 girl scout cookie (thin mint)

Thursday, 2/11/16

Breakfast:

- 2 pieces bacon
- 4 spinach raviolis
- 2 children's vitamins

Morning snack:

- granola bar

Lunch:

- 2 spinach raviolis

Dinner:

- 1 turkey hot dog
- green juice



Friday, 2/12/16

Breakfast (you guessed it!):

- 4 spinach raviolis
- 2 pieces bacon
- 2 children's vitamins

Snack

- granola bar

Lunch

- pasta with red sauce

Afternoon snack:

- Way too much assorted Valentine's Day candy

Late afternoon snack:

- Green juice popsicle

Dinner:

- Turkey hot dog

Movie night snack:

- Popcorn (Trader Joe's low fat microwave)

Saturday, 2/12/16

Breakfast:

- Cereal with no milk
- 2 pieces of bacon

Snack:

- green juice popsicle

Lunch:

- Pasta with red sauce

Dinner:

- Turkey hot dog





Sunday, 2/14/16

Breakfast:

- 2 pieces bacon
- 1 sugared donut

Lunch:

- cereal, no milk
- green juice popsicle

Dinner:

- Spanish rice from Los Tacos (yes, that's the only thing she will eat from our favorite Mexican place!)

Evening treat:

- Girl Scout Cookie (thin mint)

Monday, 2/15/16

Breakfast

- Green juice popsicle
- 2 pieces bacon
- 2 children's vitamins

Lunch

- turkey hot dog

Snack

- pasta with red sauce
- green juice popsicle

Dinner

- Pasta with red sauce





Frank Fadel Agbomenou, 8, Dakar, Senegal.

Frank lives with his older brother and father, a Human Resources Manager in an apartment in the city of Dakar. Frank would like to see his dad and mum together again but he doesn't think that wish will be fulfilled. Frank cried a couple weeks ago; his mum told him she would take him to the beach but then changed her mind. She's busy, working as a caterer for parties and fancy hotel events. There is almost nothing Frank doesn't like to eat. He eats lots of peanuts from the peanut tree on his terrace. He's especially fond of fish. Frank is an excellent dancer and has mastered summersaults though he prefers watching TV and playing games on his Play Station. The thing that makes him laugh the hardest is when his cousin Coco falls down. Frank dreams of buying a flashy sports car and traveling to Paris. When he grows up, he wants to be a gynecologist.



Photo: Gregg Segal, from *Daily Bread* published by Powerhouse Books, June 2019



**Frank Fadel Agbomenou's Food Journal**

Date	Meal	Item	Amount	Brand	Notes
21.08.2017	Breakfast	Corn flakes au fruits Lait Pain Chocolat Pomme Eau	Tresor Kellogs Bridel Boulangerie Nutella Mineral	1 bol	09:00 AM
	Lunch	Brochette de poisson Riz blanc Julienne de legumes Eau	Maison	1 assiette	12:30 PM
	Snacks	Pain thon mangue Eau	Maison Mineral	1 portion	17:00
	Dinner	Steack frites Salade tomate Yaourt Eau	Maison Cremor Mineral	1 assiette	20:00 PM
22.08.2017	Breakfast	Lait Nesquick Pain Chocolat Eau	Bridel Nutella Mineral	1 bol	10:30 AM
	Lunch	Filet de poisson Sauce concasse de tomate Riz blanc Jus Eau	Maison	1 assiette	13:00 PM
	Snacks	Chips Pringles Yaourt Eau	Pringles Cremor Mineral	1 portion	18:00





	Dinner	Viande hachee Farfalle Fromage Eau	Maison	1 assiette	20:00 PM
23.08.2017	Breakfast	Lait Corn flakes Cookies Jus raisin Eau	Bridel Kellogs Jockers Mineral	1 bol	10:00
	Lunch	Yassa poulet Riz blanc Yaourt Eau		1 assiette	13 :00
	Snack	Tarte passion Jus bissap	Maison	1 portion	17 :30
	Dinner	Cote Dagneau Petit poids Carotte Assiette De fruit Abricot Prune	Maison	1 assiette	20 :30
24.08.2017	Breakfast	Lait Corn flakes Chocolat Jus raisin Eau	Bridel Kellogs Nutella Jockers Mineral	1 bol	09 :30
	Lunch	Riz au poison rouge Melon Eau	Maison	1 assiette	13 :30
	Snacks	Pizza 3 fromage Jus ananas Eau	Galette Pressea Mineral	5 portion	18 :00
	Dinner	Poisson frites Legumes Glace chocolat Eau	Maison	1 assiette	21 :00





25.08.2017	Breakfast	Corn flakes Lait Pain choco		1 bol	10:00
	Lunch	Crevette Sautees Riz Jus bouye Eau	Maison	1 assiette	12 :00
	Snacks	Cake au fruits sec Pomme rouge Eau	Maison	1 portion	17:30
	Dinner	Pilon de poulet Salade mixte Fromage blanc crouton Eau	Maison	1 assiette	20 :30
	Extra				
26.08.2017	Breakfast	Lait Pain Oeuf sur le plat Ananas Eau	Maison Mineral	1 bol	9 :00
	lunch	Crème champignon Poulet Pomme Sautees Pasteque Eau	Maison	1 assiette	13 :00
	snack	Pain yaourt Epices Lemonade	Cremor	1 portion	17:30
	Dinner	Composition Charcuterie Porc Pomme noisette Eau	3 petit cochon Auchan mineral	1 assiette	20 :30



**Paolo Mendolaro, 9, Belpaso, Sicily, Italy**

Paolo and his family of four live in an apartment in Belpasso, a tiny medieval village on the east coast of Sicily founded in 1305. When he steps outside his apartment, Paolo sees the center square and Mother Church of Belpasso with its lava stone staircase and bell tower. Paolo's mom works full time for a cosmetics company, but makes time to prepare homemade meals for her family like Sicilian Cannolo and Pasta alla Norma. Once a week, they buy a roast chicken or go out for pizza, which Paolo loves most of all. Paolo has learned to make his own pizza and pasta as well as biscuits and big donuts. His grandfather had an overflowing garden and Paolo helped harvest eggplants, zucchini, bell peppers, olives, strawberries, peaches, tomatoes, peas and fava beans. During the week that Paolo kept his journal for Daily Bread, he'd been going to the beach with his family and didn't follow as healthy a diet as usual; they often ate fast food. Paolo keeps his parents in his prayers. For his mother, he wishes for a dryer machine and a new truck for his father, a carpenter. If he had enough money, Paolo would buy a Play Station 4, a giant Lego set and, at minimum, a one-week holiday for the whole family.





Paolo Mendolaro's Food Journal

Date	Meal	Item	Amount	Brand	Notes
Monday	Breakfast	Cold peach tea	1 big glass	San Benedetto	packaged
	Lunch	Norma Pasta	1 plate		Tomato sauce, eggplant, salt ricotta cheese.
		crisp stick Fish	4	Findus	Fried breaded cod
		Rosted bell pepper	1 plate		
	Snacks	Sandwich	half		Ham
	Dinner	Sandwich	1		
		Rosted bell pepper	1 plate		
		Yellow melon	1 slice		
	Extra				
Tuesday	Breakfast	Cold lemon tea	1 big glass	Coop	packaged
	Lunch	Mozzarella in carriage	3	MD	packed white bread soaked in egg and breadcrumbs, filled with mozzarella and fried in vegetal oil.
		Mixed salad	1		
	Snacks	Packaged ice cream cone	1	Algida	
	Dinner	Pig meat rolls	6		egg, breadcrumbs, ham, cheese
		Mixed salad	1		
	Extra	Cold lemon tea	1 big glass	Coop	packaged





Data	Pasto	Cosa	Quantità	Marca	Ingredienti
Wednesday	Breakfast	Cold lemon tea	1 big glass	Coop	packaged
	Lunch	Sandwiches	2		Milk bread, ham
	Snacks	Sandwich	1		Milk bread, ham
	Dinner	Cutlet	1 slice		Meat, egg, breadcrumbs, grana cheese, black pepper, parsley.
		Salad	1		Cherry tomato
	Extra	Cold peach tea	2 glasses	San Benedetto	packaged
Thursday	Breakfast	Almod milk	1 glass	MD	
	Lunch	Mc Donald's Menù:			
		Sandwich hamburger	1		
		Chips	1 medium		
		Coca cola	1 big glass		
	Snacks	Packaged ice cream cone	1	Algida	
	Dinner	White rice salad	1 plate		White rice with "condiriso", Tuna, corn.
					*Condiriso is an industrial preparation with mixed vegetables, sugar, vegetal oil
	Extra				





Date	Meal	Item	Amount	Brand	Notes
Friday	Breakfast	Almond milk	1 glass	MD	
	Lunch	White rice salad	1		Same as Thursday evening
		Meatballs with	2		Meat, eggs, breadcrumbs, salt,
		tomato souce			black pepper, tomato souce,
	Snacks	Packaged ice	1	Algida	
		cream cone			
	Dinner	Sandwich	1		ham, mozzarella chees, tomato,
					melted cheese.
	Extra	Ace juice	1	MD	
Saturday	Breakfast	Ace juice	1	MD	
	Lunch	Pasta	1	Divella	Brocken spaghetti, long zucchini
					Leaves, onion, cherry tomatoes,
		Meatballs with			olive oil.
	Snacks	tomato souce	2		Same as Friday
		Ace juice	1 glass	MD	
		Sandwich	half		with salami
	Dinner	Pizza	1		Tomato souce and mozzarella
	Extra				





Data	Pasto	Cosa	Quantità	Marca	Ingredienti
Sunday	Breakfast	Croissant	1		Milk custard
	Lunch	Sandwich	1		ham and melted cheese
	Snacks	Fruit juice	1 brik	MD	Pear
	Dinner	Spaghetti	1 plate	Divella	Clams, garlic, tomato, parsley, oil
	Extra	Cold peach tea	2 glasses	San Benedetto	packaged



**Task 3-1 Creating Food Journals – Blank Journal**

Name			Age			
Date & time	Meal	Item & ingredients	Amount	Brand	Notes	Food groups (Complete in Task 3-3)
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					





	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					



**Task 3-2. Collecting Food Journals—Blank Journal**

Name			Age			
Date & time	Meal	Item & ingredients	Amount	Brand	Notes	Food groups (Complete in Task 3-3)
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					





	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					
	Breakfast					
	Lunch					
	Snacks					
	Dinner					
	Extra					



**Task 3-3. Understanding and Analyzing Food Groups—Food Group Card Game**

1. Cut out the deck of cards.
2. Shuffle the cards and place them in a stack with the picture side down.
3. This game can be played with two or more players.

The Cards

The card pack includes 52 cards total. Forty of the cards are broken into the following food group categories, numbered with a value of one through eight.

- Fruits
- Vegetables
- Protein
- Dairy
- Grains

The remaining 12 cards are labeled Junk Food and have a value of 10. The number on the Junk Food cards is only for scoring purposes, not game play.

Object of the Game

The goal is to be the first player to get rid of all your cards.

The Deal

1. Deal five cards face down, one at a time, to each player, beginning with the player to the left of the dealer.
2. Place the remaining cards face down in the center of the table to form the stock.
3. The dealer turns over the top card from the stock stack and places it face up next to the stock. This is the starter pile. If a Junk Food card is turned, stick it back into the stock at a random location and turn up another card.

The Play

1. Starting to the dealer's left, each player must place one card face up on the starter pile. Each card played (other than a Junk Food card) must match either the food group (Fruits, Vegetables, Protein, Dairy, Grains) or the number on the card that was just played.

For example, if the card on the starter pile is Fruit (4), you can play either another Fruit card with any number on it, or you can play a card from another food group that has the number 4, such as Protein (4).

2. If any player unable to play a card from their hand, they draw a card from the top of the stock. If this card can be played on the starter pile, then it should be played and the turn is complete. If the drawn card cannot be played, the player keeps it and it's the next player's turn.
3. Junk Food cards are wild and can be played at any time. However, when a Junk Food card is played, the player must then draw two cards from the stock pile and keep them in their hand. Their turn is over. The next player then gets to choose any card they would like to play on top of the Junk Food card in the starter pile, and play continues.





4. If someone is unable to play and draws a Junk Food card from the top of the stock, they may immediately play it, but must then draw two additional cards from the stock and their turn is done. They can also choose to hold the Junk Food card in their hand, not play it, and their turn is complete.
5. Play continues until a player gets rid of all of their cards.
6. If the stock pile runs out before that happens, leave the top card from the starter pile on the table and reshuffle the rest of the starter pile to make a new stock pile. Continue play until one player uses all of their cards.
7. All players then score their hands, as described below. Use the score card to keep track of your scores.
8. Play another round.
9. After the desired number of rounds are played, add up the total score for each player. The player with the lowest total score is the winner.

Scoring

The player who is the first to get rid of all their cards ends the round and gets zero points for that round. The remaining players in that round count the total value of the cards remaining in their hand, using the number values (one through eight) on each card. All Junk Food cards have a value of 10 points.

Player	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8	Game total





Math Connection

Graph the score data.

- Create a line graph with round numbers on the X axis and points per round on the Y axis.
- Create a bar graph with players on the X axis and game total points on the Y axis. Develop a way to mark or color each bar to include the individual round scores for each person.
- Design your own graph to visualize the data.



1

DAIRY



Blue Cheese

2

DAIRY



Camel Milk

3

DAIRY



Cow Milk

4

DAIRY



Queso Fresco

5

DAIRY



Yogurt

6

DAIRY



Kefir

7

DAIRY



Swiss Cheese

8

DAIRY



Goat Milk

1

FRUITS



Apple

2

FRUITS



Aronia

3

FRUITS



Currant

4

FRUITS



Fig

5

FRUITS



Kiwi

6

FRUITS



Orange

7

FRUITS



Papaya

8

FRUITS



Pear

1

GRAINS



Amaranth

2

GRAINS



Barley

3

GRAINS



Black Rice

4

GRAINS



Brown Rice

5

GRAINS



Buckwheat

6

GRAINS



Oats

7

GRAINS



Spelt

8

GRAINS



Teff

1

PROTEIN



Beans

2

PROTEIN



Clam

3

PROTEIN



Crickets

4

PROTEIN



Hazelnuts

5

PROTEIN



Lentils

6

PROTEIN



Mealworms

7

PROTEIN



Sardines

8

PROTEIN



Tofu

1

VEGETABLES



Arugula

2

VEGETABLES



Beet

3

VEGETABLES



Broccoli

4

VEGETABLES



Carrot

5

VEGETABLES



Garlic

6

VEGETABLES



Green Beans

7

VEGETABLES



Lettuce

8

VEGETABLES



Onion

10

JUNK FOOD



Cheesy Puffs

10

JUNK FOOD



Donut

10

JUNK FOOD



Chocolate Cake

10

JUNK FOOD



Cookies

10

JUNK FOOD



French Fries

10

JUNK FOOD



Sugary Drink

10

JUNK FOOD



Cheesy Puffs

10

JUNK FOOD



Donut

10

JUNK FOOD



Chocolate Cake

10

JUNK FOOD



Cookies

10

JUNK FOOD



French Fries

10

JUNK FOOD



Sugary Drink

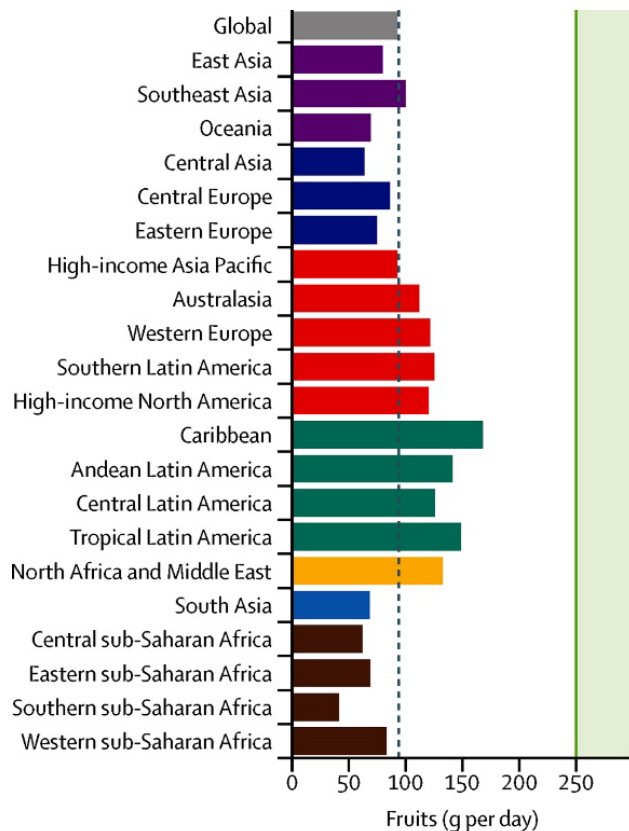
Task 3-3. Exploring and Analyzing Food Groups

Global Food Group Consumption Data

Source: Health Effects of Dietary Risks in 195 Countries, 1990–2017: A Systematic Analysis for the Global Burden of Disease Study 2017 *The Lancet*

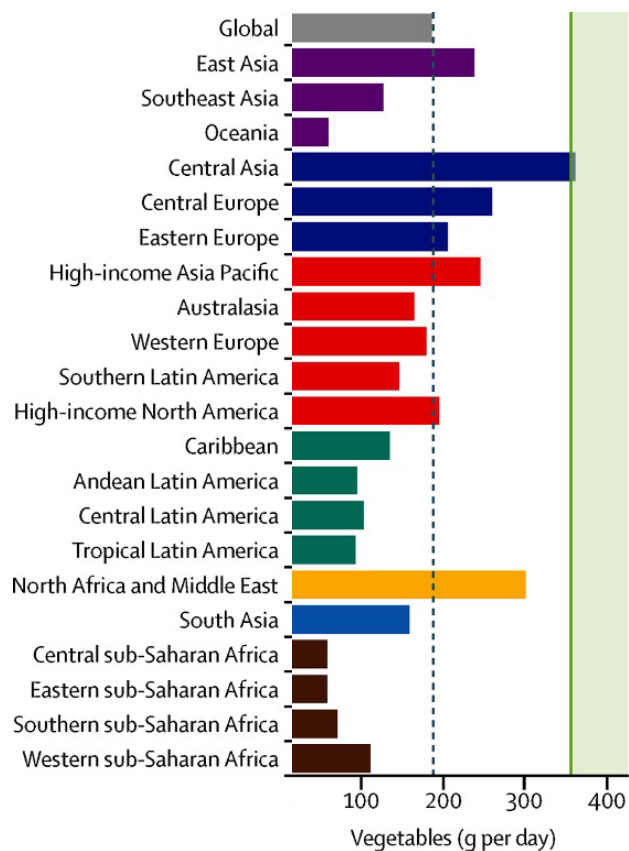
DOI: (10.1016/S0140-6736(19)30041-8)

Global Fruit Intake



1. What is the optimal level of fruit intake per day for good health?
2. What was the global fruit intake in 2017 per day?
3. Which regions have the highest fruit intake? Why do you think that might be?
4. Which regions have the lowest fruit intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for fruit intake?
6. Do any regions exceed the optimal level for fruit intake?
7. Are any regions below the optimal level for fruit intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

■ Global ■ Southeast Asia, east Asia, and Oceania ■ Central Europe, eastern Europe, and central Asia ■ High income ■ Latin America and the Caribbean
 ■ North Africa and the Middle East ■ South Asia ■ Sub-Saharan Africa ---- Global intake in 2017 ——— Optimal level of intake (according to the midpoint of the optimal range of intake)

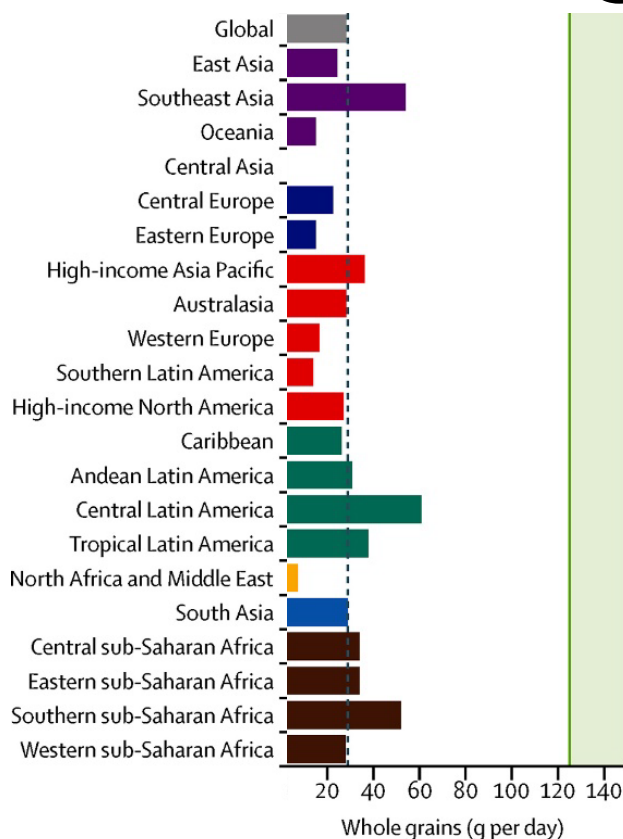


Global Vegetable Intake

1. What is the optimal level of vegetable intake per day for good health?
2. What was the global vegetable intake in 2017 per day?
3. Which regions have the highest vegetable intake? Why do you think that might be?
4. Which regions have the lowest vegetable intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for vegetable intake?
6. Do any regions exceed the optimal level for vegetable intake?
7. Are any regions below the optimal level for vegetable intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

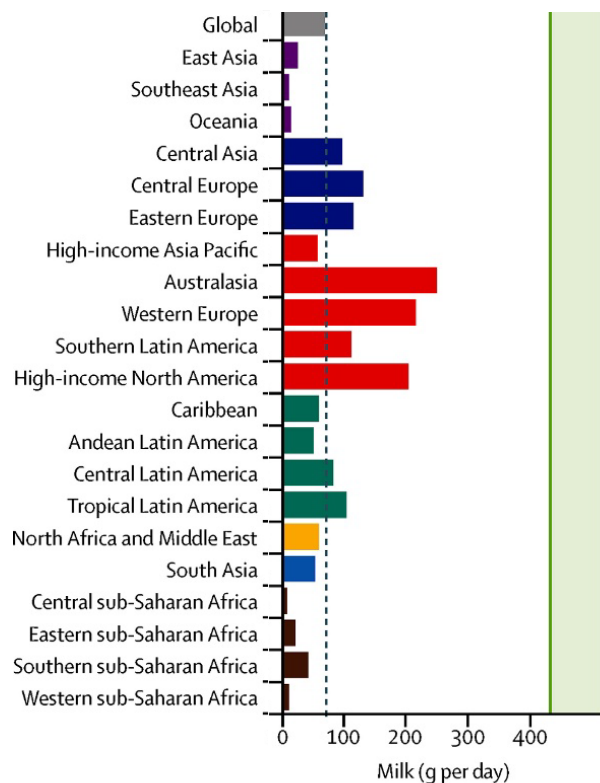
Global Southeast Asia, East Asia, and Oceania Central Europe, Eastern Europe, and Central Asia High income Latin America and the Caribbean
 North Africa and the Middle East South Asia Sub-Saharan Africa ---- Global intake in 2017 — Optimal level of intake (according to the midpoint of the optimal range of intake)

Global Whole Grains Intake



1. What is the optimal level of whole grains intake per day for good health?
2. What was the global whole grains intake in 2017 per day?
3. Which regions have the highest whole grain intake? Why do you think that might be?
4. Which regions have the lowest whole grain intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for whole grain intake?
6. Do any regions exceed the optimal level for whole grain intake?
7. Are any regions below the optimal level for whole grain intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

■ Global ■ Southeast Asia, East Asia, and Oceania ■ Central Europe, Eastern Europe, and Central Asia ■ High income ■ Latin America and the Caribbean
 ■ North Africa and the Middle East ■ South Asia ■ Sub-Saharan Africa --- Global intake in 2017 — Optimal level of intake (according to the midpoint of the optimal range of intake)

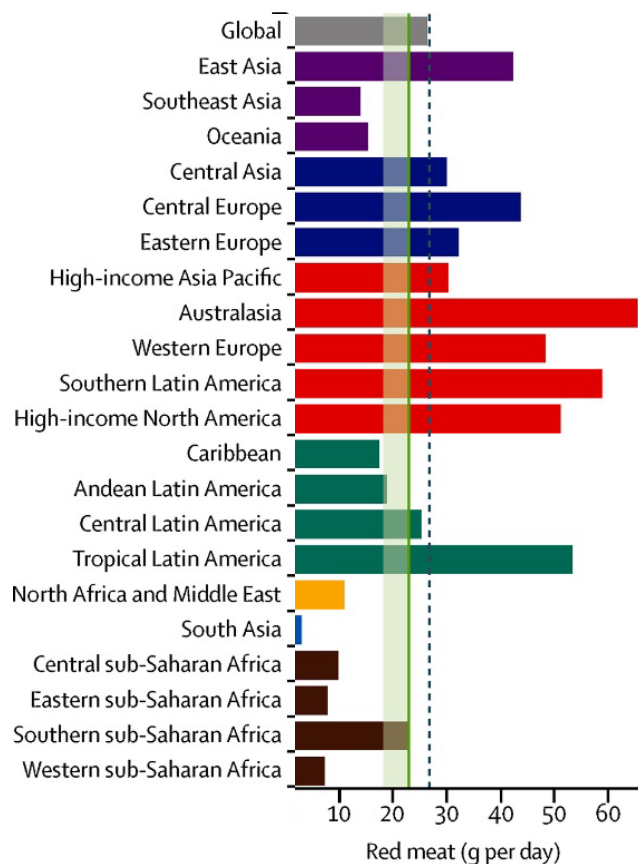


Global Dairy Milk Intake

1. What is the optimal level of milk intake per day for good health?
2. What was the global milk intake in 2017 per day?
3. Which regions have the highest milk intake? Why do you think that might be?
4. Which regions have the lowest milk intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for milk intake?
6. Do any regions exceed the optimal level for milk intake?
7. Are any regions below the optimal level for milk intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

Global Southeast Asia, East Asia, and Oceania Central Europe, Eastern Europe, and Central Asia High income Latin America and the Caribbean
 North Africa and the Middle East South Asia Sub-Saharan Africa ---- Global intake in 2017 — Optimal level of intake (according to the midpoint of the optimal range of intake)

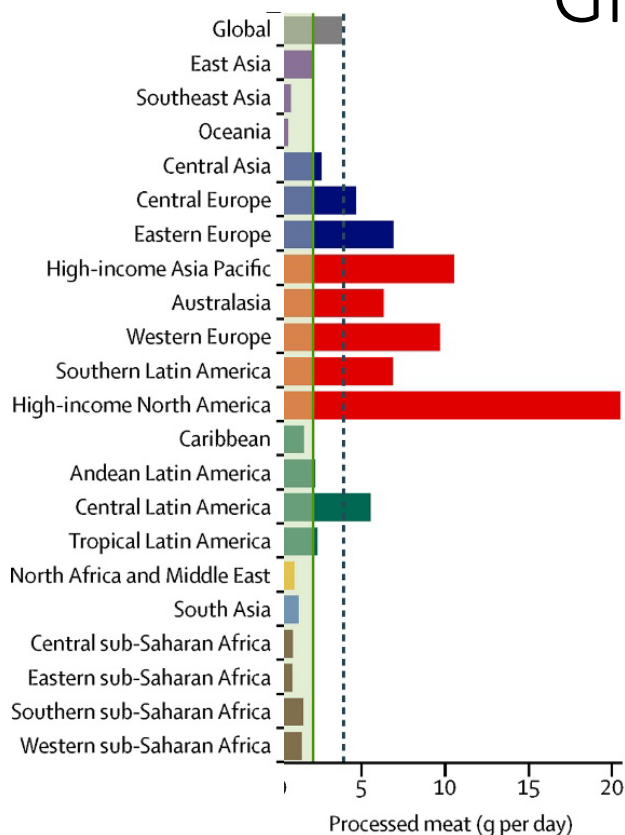
Global Red Meat Protein Intake



1. What is the optimal level of red meat intake per day for good health?
2. What was the global red meat intake in 2017 per day?
3. Which regions have the highest red meat intake? Why do you think that might be?
4. Which regions have the lowest red meat intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for red meat intake?
6. Do any regions exceed the optimal level for red meat intake?
7. Are any regions below the optimal level for red meat intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

Global Southeast Asia, east Asia, and Oceania Central Europe, eastern Europe, and central Asia High income Latin America and the Caribbean
 North Africa and the Middle East South Asia Sub-Saharan Africa ---- Global intake in 2017 — Optimal level of intake (according to the midpoint of the optimal range of intake)

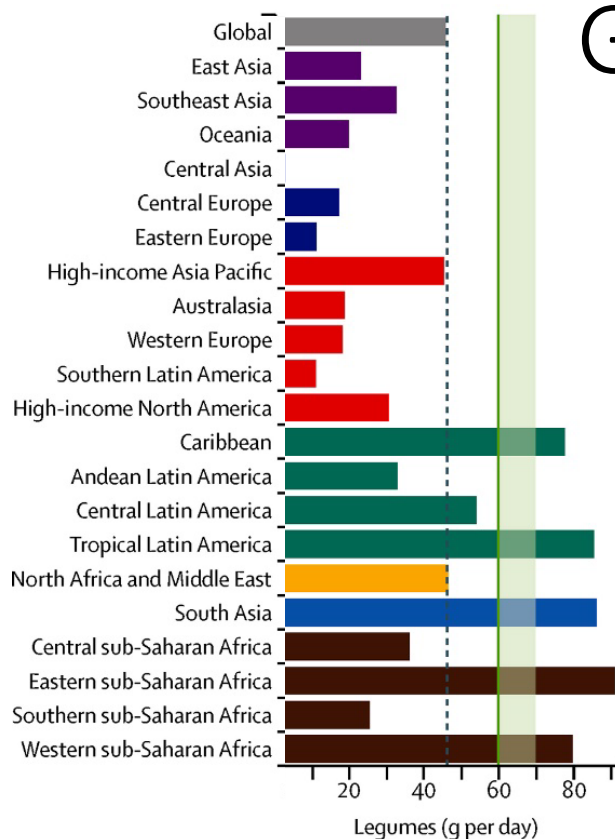
Global Processed Meat Protein Intake



1. What is the optimal level of processed meat intake per day for good health?
2. What was the global processed meat intake in 2017 per day?
3. Which regions have the highest processed meat intake? Why do you think that might be?
4. Which regions have the lowest processed meat intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for processed meat intake?
6. Do any regions exceed the optimal level for processed meat intake?
7. Are any regions below the optimal level for processed meat intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

■ Global ■ Southeast Asia, east Asia, and Oceania ■ Central Europe, eastern Europe, and central Asia ■ High income ■ Latin America and the Caribbean
 ■ North Africa and the Middle East ■ South Asia ■ Sub-Saharan Africa ---- Global intake in 2017 ——— Optimal level of intake (according to the midpoint of the optimal range of intake)

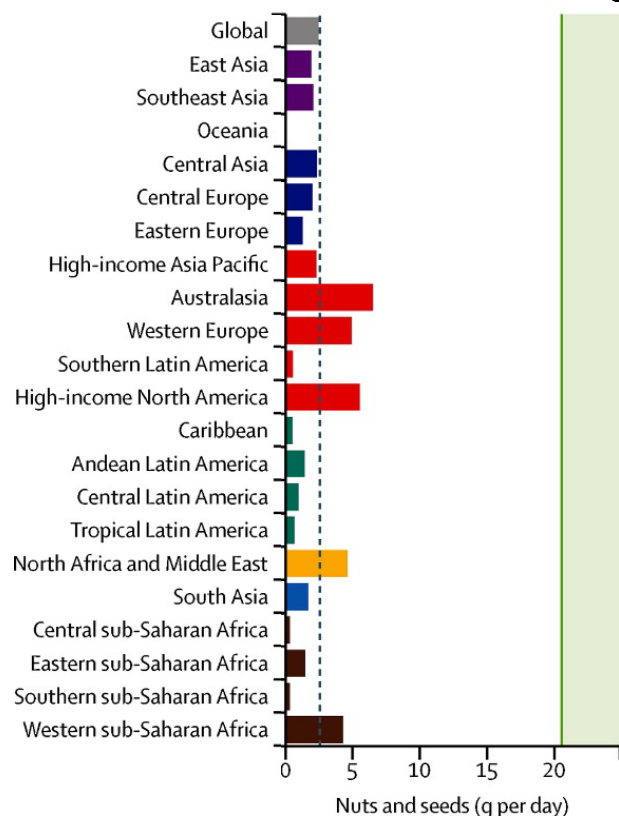
Global Legumes Protein Intake



1. What is the optimal level of legumes intake per day for good health?
2. What was the global legume intake in 2017 per day?
3. Which regions have the highest legume intake? Why do you think that might be?
4. Which regions have the lowest legume intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for legume intake?
6. Do any regions exceed the optimal level for legume intake?
7. Are any regions below the optimal level for legume intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

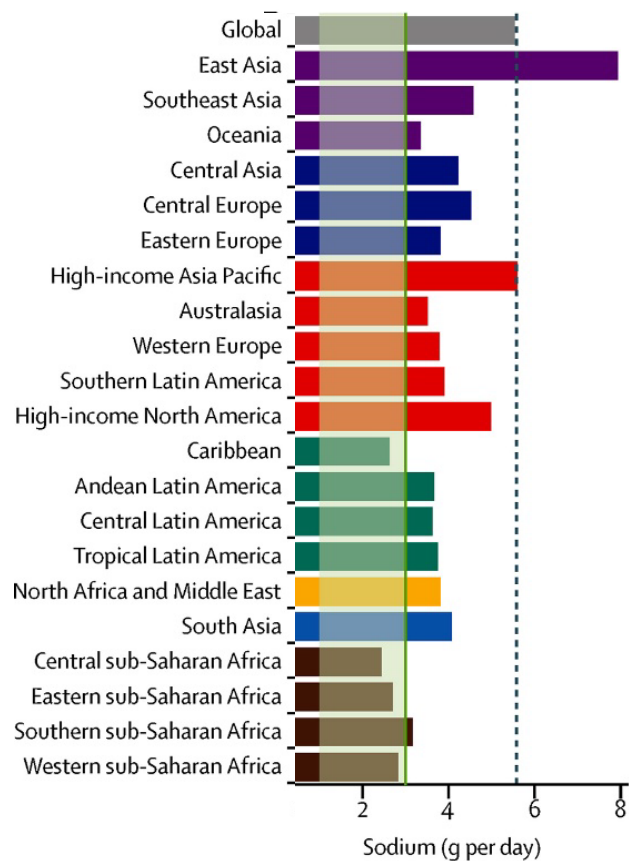
■ Global ■ Southeast Asia, east Asia, and Oceania ■ Central Europe, eastern Europe, and central Asia ■ High income ■ Latin America and the Caribbean
 ■ North Africa and the Middle East ■ South Asia ■ Sub-Saharan Africa ---- Global intake in 2017 ——— Optimal level of intake (according to the midpoint of the optimal range of intake)

Global Nuts and Seeds Protein Intake



1. What is the optimal level of nuts and seeds intake per day for good health?
2. What was the global nuts and seeds intake in 2017 per day?
3. Which regions have the highest nuts and seeds intake? Why do you think that might be?
4. Which regions have the lowest nuts and seeds intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for nuts and seeds intake?
6. Do any regions exceed the optimal level for nuts and seeds intake?
7. Are any regions below the optimal level for nuts and seeds intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

■ Global ■ Southeast Asia, east Asia, and Oceania ■ Central Europe, eastern Europe, and central Asia ■ High income ■ Latin America and the Caribbean
 ■ North Africa and the Middle East ■ South Asia ■ Sub-Saharan Africa --- Global intake in 2017 — Optimal level of intake (according to the midpoint of the optimal range of intake)

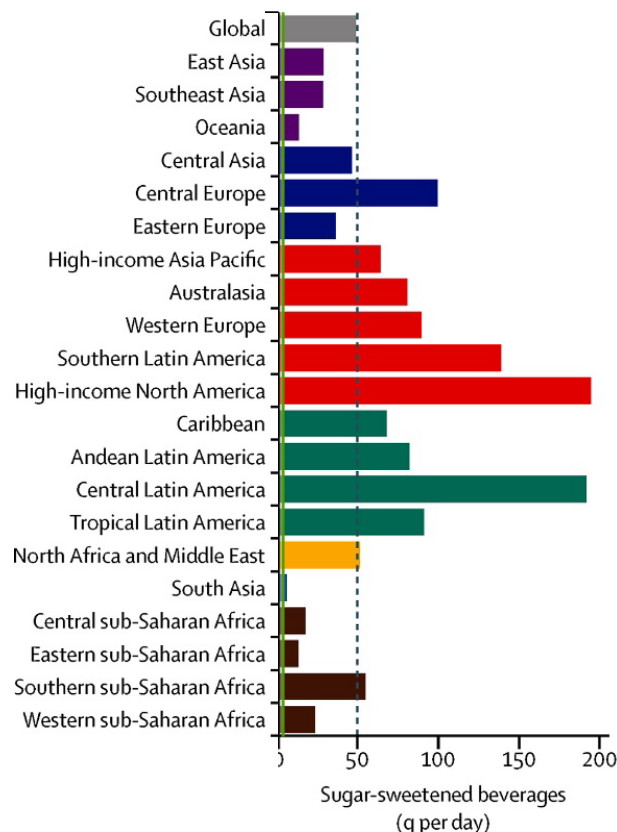


Global Sodium Intake

1. What is the optimal level of sodium intake per day for good health?
2. What was the global sodium intake in 2017 per day?
3. Which regions have the highest sodium intake? Why do you think that might be?
4. Which regions have the lowest sodium intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for sodium intake?
6. Do any regions exceed the optimal level for sodium intake?
7. Are any regions below the optimal level for sodium intake?
8. How could this information be helpful when thinking about the problem question:
How do we ensure good nutrition for all?

■ Global ■ Southeast Asia, East Asia, and Oceania ■ Central Europe, Eastern Europe, and Central Asia ■ High income ■ Latin America and the Caribbean
 ■ North Africa and the Middle East ■ South Asia ■ Sub-Saharan Africa --- Global intake in 2017 — Optimal level of intake (according to the midpoint of the optimal range of intake)

Global Sugar-Sweetened Beverage Intake



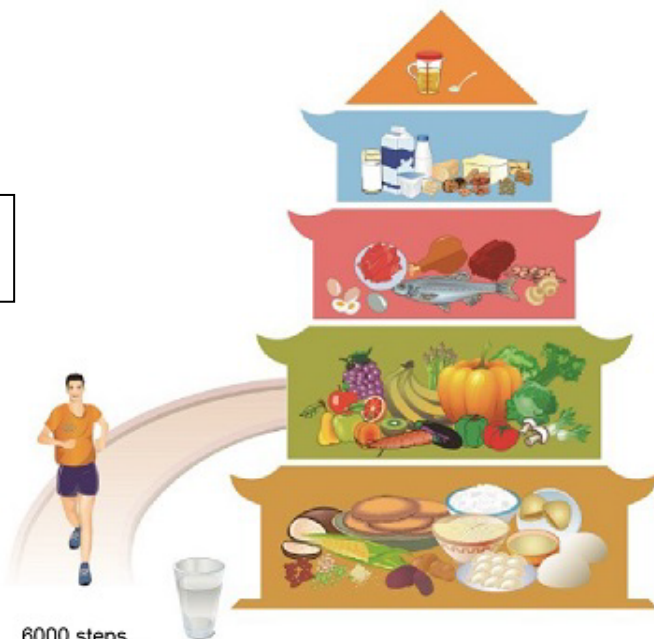
1. What is the optimal level of sugar-sweetened beverage intake per day for good health?
2. What was the global sugar-sweetened beverage intake in 2017 per day?
3. Which regions have the highest sugar-sweetened beverage intake? Why do you think that might be?
4. Which regions have the lowest sugar-sweetened beverage intake? Why do you think that might be?
5. Do any regions meet the daily optimal level for sugar-sweetened beverage intake?
6. Do any regions exceed the optimal level for sugar-sweetened beverage intake?
7. Are any regions below the optimal level for sugar-sweetened beverage intake?
8. How could this information be helpful when thinking about the problem question: *How do we ensure good nutrition for all?*

■ Global ■ Southeast Asia, east Asia, and Oceania ■ Central Europe, eastern Europe, and central Asia ■ High income ■ Latin America and the Caribbean
 ■ North Africa and the Middle East ■ South Asia ■ Sub-Saharan Africa ---- Global intake in 2017 — Optimal level of intake (according to the midpoint of the optimal range of intake)



Task 3-4. Assessing Food Guidelines

China



<http://www.cnsoc.org>

Salt <6 grams
Oil 25~30 grams

Milk and dairy products 300 grams
Legumes and nuts 25~35 grams

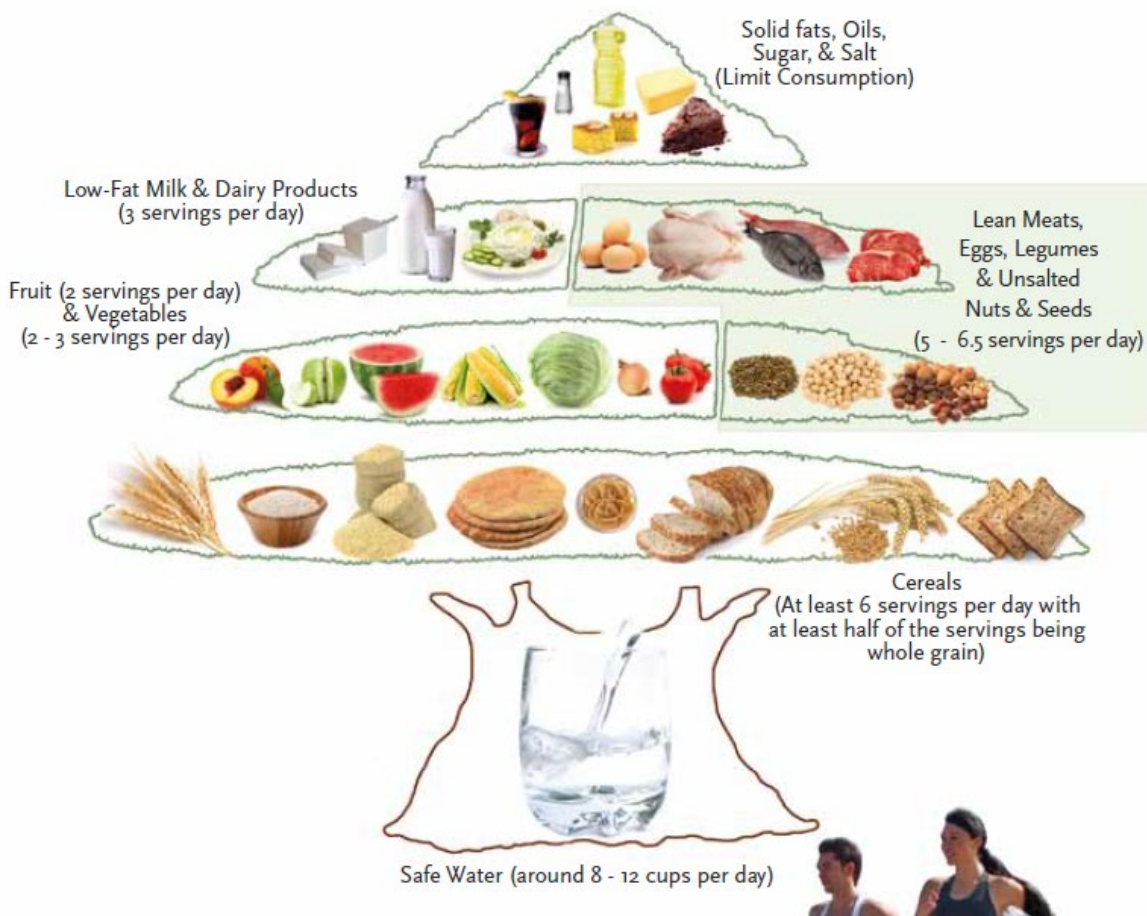
Meat and poultry 40~75 grams
Seafood 40~75 grams
Eggs 40~50 grams

Vegetables 300~500 grams
Fruit 200~350 grams

Cereals and tubers 250~400 grams
Wholemeal and multigrain 50~150 grams
Tubers 50~100 grams

Water 1500~1700 millilitres

Lebanon



Solid fats, Oils,
Sugar, & Salt
(Limit Consumption)

Low-Fat Milk & Dairy Products
(3 servings per day)

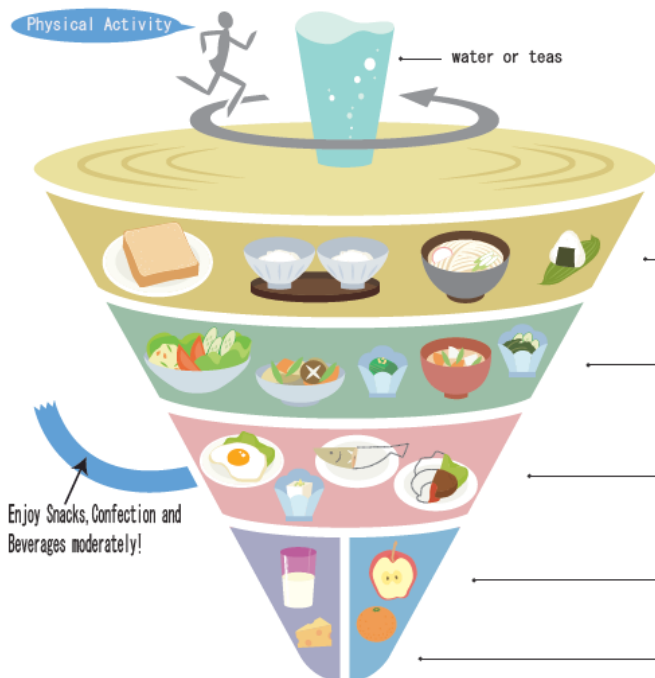
Fruit (2 servings per day)
& Vegetables
(2 - 3 servings per day)

Lean Meats,
Eggs, Legumes
& Unsalted
Nuts & Seeds
(5 - 6.5 servings per day)

Cereals
(At least 6 servings per day with
at least half of the servings being
whole grain)

Safe Water (around 8 - 12 cups per day)





Japanese Food Guide Spinning Top

Do you have a well-balanced diet?

for one day	Example of dishes or food
5-7 SV Grain dishes (Rice, Bread, Noodles, and Pasta)	1 SV = = = = =
5-6 SV Vegetable dishes	1.5 SV = 2 SV = = =
3-5 SV Fish and Meat dishes (Meat, Fish, Egg and Soy-bean dishes)	1 SV = = = 2 SV = = =
2 SV Milk (Milk and Milk products)	1 SV = = = = 2 SV =
2 SV Fruits	1 SV = = = = =

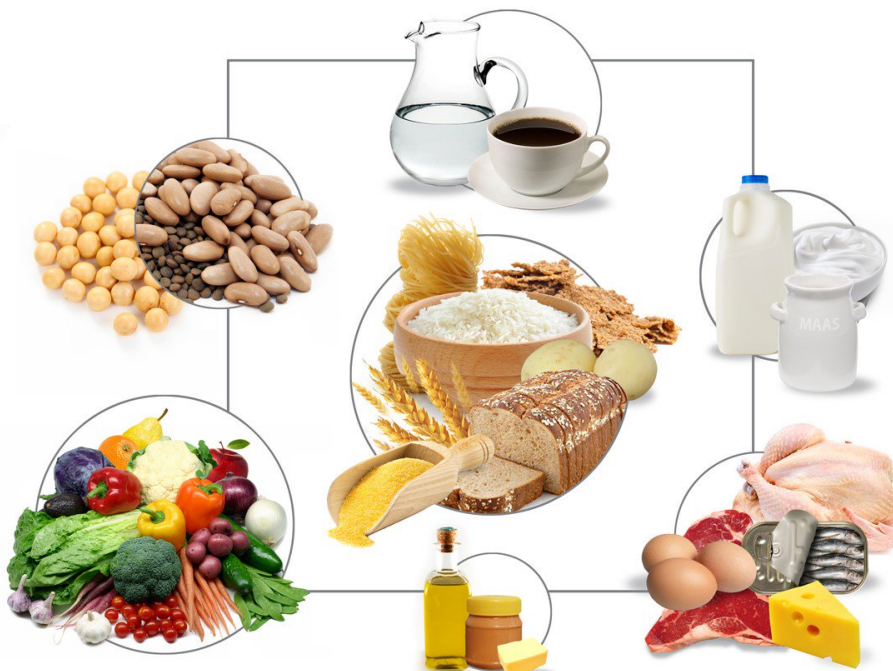
※ SV is an abbreviation of "Serving", which is a simply countable number describing the approximated amount of each dish or food served to one person

India





South
Africa



Enjoy a wide variety of nutritious foods
from these five food groups every day.
Drink plenty of water.

Australia

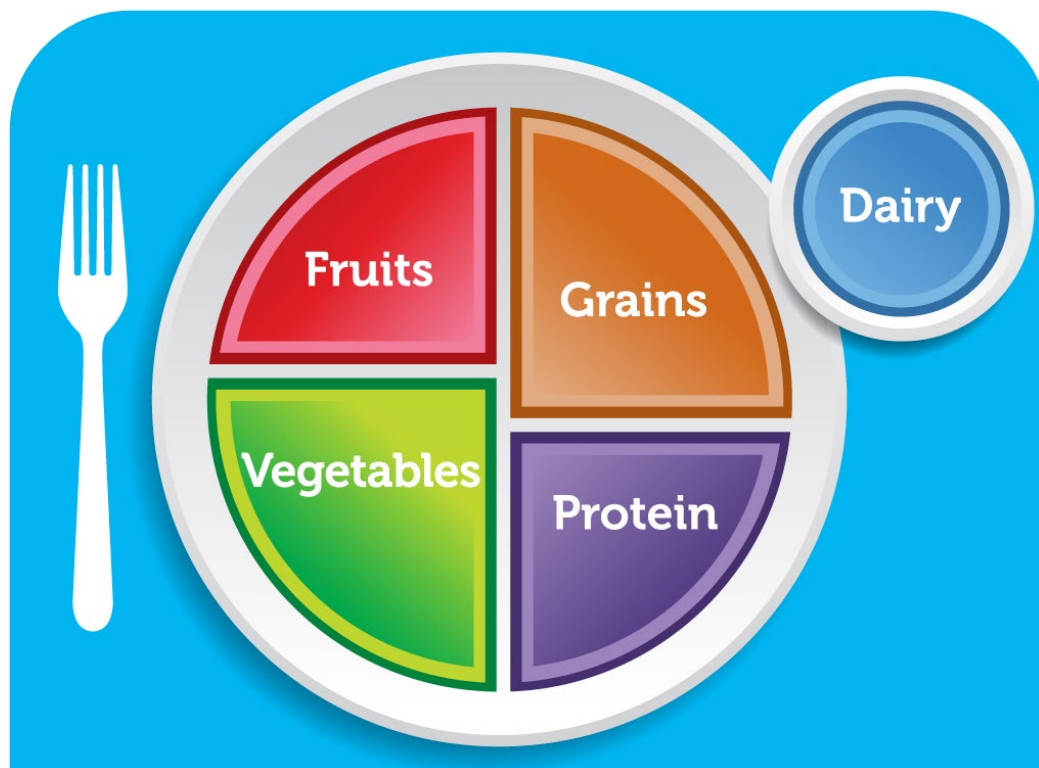




Argentina



USA

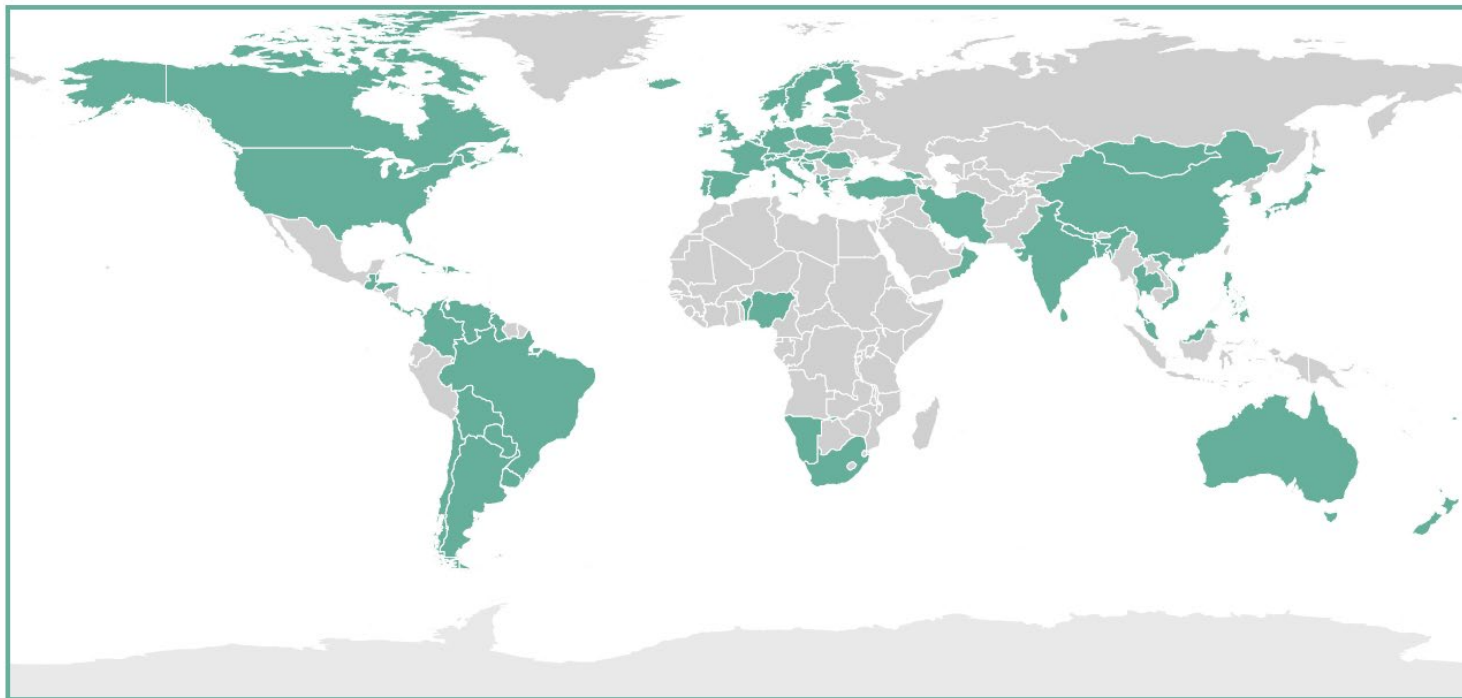




A helpful link to locate food guidelines from your country:

<http://www.fao.org/nutrition/education/food-dietary-guidelines/en/>

Figure 1: Map showing (in green) the 83 countries with dietary guidelines included in this analysis.



Green: Country has nutritional guidelines

Grey: Country does not have nutritional guidelines

Source: Plates, pyramids, planet: Developments in national healthy and sustainable dietary guidelines: a state of play assessment; Carlos Gonzalez Fisher & Tara Garnett; Food Climate Research Network, Food and Agriculture Organization of the United Nations (2016)



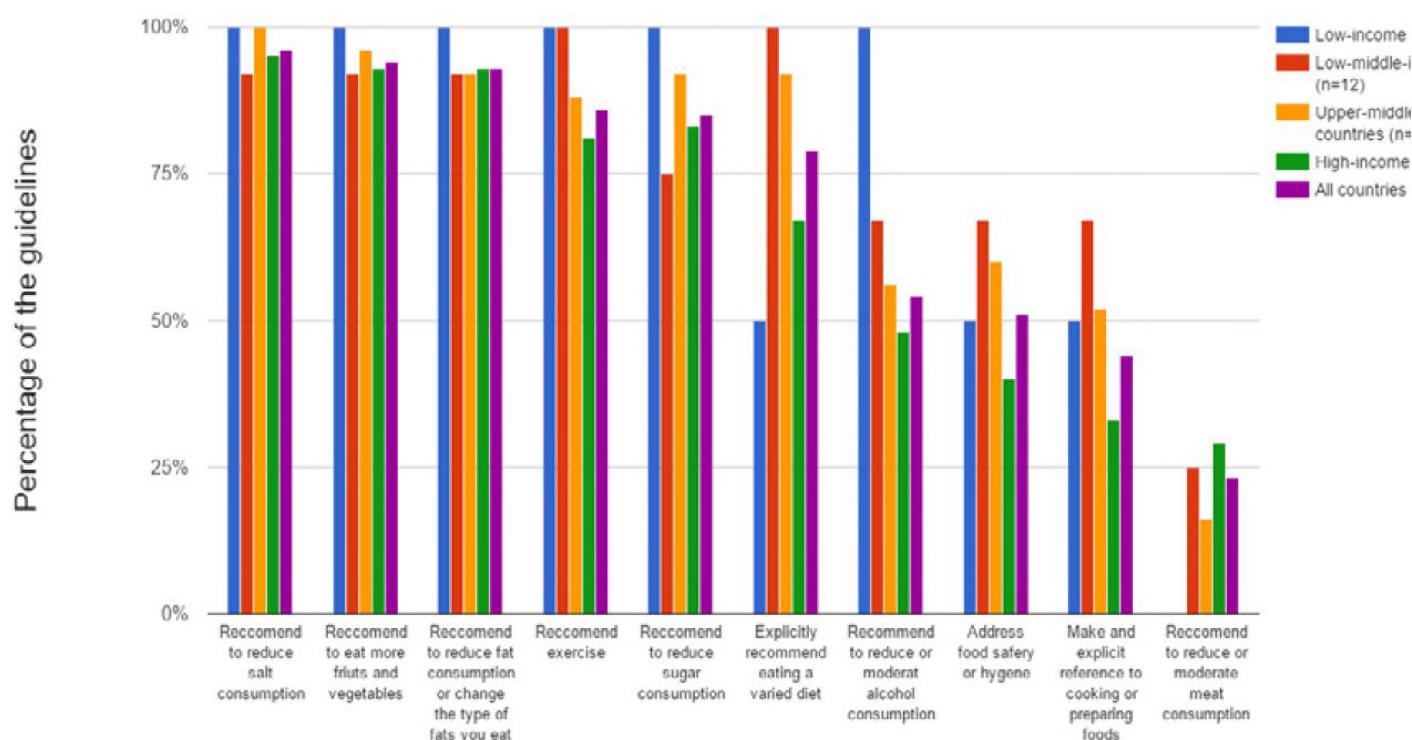


Table 2: Classification of the countries with and without dietary guidelines, according to their income level (following the classification by the World Bank).

	Total	With guidelines
Low-income countries	31	2 (6%)
Low-middle-income countries	51	12 (24%)
Upper-middle-income countries	53	26 (45%)
High-income countries	80	43 (53%)
All countries	215	83 (38%)

Source: Plates, pyramids, planet: Developments in national healthy and sustainable dietary guidelines: a state of play assessment; Carlos Gonzalez Fisher & Tara Garnett; Food Climate Research Network, Food and Agriculture Organization of the United Nations (2016)

Figure 2: Summary of the most common messages in the guidelines by income level.



Source: Plates, pyramids, planet: Developments in national healthy and sustainable dietary guidelines: a state of play assessment; Carlos Gonzalez Fisher & Tara Garnett; Food Climate Research Network, Food and Agriculture Organization of the United Nations (2016)







Task 3-5. Estimating Portion Size and Serving Size

Portions and Servings: What's the Difference?

A **portion** is the amount of food you choose to eat for a meal or snack. It can be big or small—you decide.

A **serving** is a measured amount of food or drink, such as one slice of bread or one cup (8 ounces) of milk.

Many foods that are packaged or sold as a single *portion* actually contain several *servings*. Packaged foods are required to a Nutrition Facts label that tells you the number of servings in the container. You'll find it on the back of a can or bag or the side of a box. Different kinds of products have different serving sizes. Serving sizes could be measured in many different units, such as cups, ounces, grams, pieces, slices, or numbers (such as three crackers).

Look at the Nutrition Facts label on a 20-ounce soda (usually consumed as one portion). It says the bottle has 2.5 servings in it. A 3-ounce bag of potato chips, which some would consider a single portion, contains three servings.

Depending on how much you choose to eat, your portion size may or may not match the serving size. Remember, portion size is how much food you choose to eat at one time—whether you are eating in a restaurant, from a packaged meal, or at home. A serving size is a measured amount of food with a known amount of nutritional value. Knowing the nutritional value in a serving size can help you decide how large or small of a portion is appropriate to each in a day. However, a serving size on a Nutrition Facts label may be more or less than the amount you should eat, depending on your age, weight, whether you are male or female, and how active you are.

In this activity, you will learn how to estimate the portion size of some foods and compare it to a suggested serving size. You will then calibrate a measuring tool, your hand, that you can use to make approximate portion and serving size measurements in your daily life.





Lebanon Food Guidelines—Serving Size Recommendations

Table 3.1	Recommended Intakes and Examples of Serving Sizes of Each of the Five Food Groups
Recommended Intakes of the Five Food Groups (based on a 2,000 calorie diet)	Examples of One Serving of Each of the Food Groups
Cereals and grains (at least 6 servings per day, with at least ½ being whole-grain)	<ul style="list-style-type: none"> • ¼ big loaf of Arabic whole-wheat pita bread • 1 slice of whole-wheat loaf (toast) bread • ½ cup cooked 'Burghul', whole wheat, brown rice, whole-wheat pasta or noodles • 1 cup ready-to-eat breakfast cereal (unsweetened)
Fruit (2 servings per day)	<ul style="list-style-type: none"> • 1 small apple • 1 large banana, orange, or peach • ½ cup dried fruit (dates, prunes, raisins, apricots) • 1 cup fresh fruit juice
Vegetables (2 - 3 servings per day)	<ul style="list-style-type: none"> • 1 cup raw vegetables • 2 cups raw green leafy vegetables • 1 cup cooked vegetables • 1 cup vegetable juice
Low-fat milk and dairy products (3 servings per day)	<ul style="list-style-type: none"> • 1 cup liquid milk or yogurt • 3 tablespoons powdered milk • 45 g white cheese • 1 cup milk-based pudding such as 'Mhalbiyeh', 'Sahlab' or 'Riz Bi Halib' • 8 tablespoons 'Labneh'
Protein-rich foods (5 - 6.5 servings per day)	<ul style="list-style-type: none"> • 30 g cooked lean red meat or white meat (poultry or fish) • 1 whole egg or 1.5 egg whites • ¼ cup legumes (beans, lentils, peas) • 15 g unsalted nuts or seeds





For this part of the activity, the team should use the Lebanon food guidelines as a reference.

1. Look at the number of total servings of each food group recommended to eat per day.
 - Cereals and grains
 - Fruit
 - Vegetables
 - Low-fat milk and dairy products
 - Protein-rich foods
2. Look over the examples of foods and amounts that equal one serving for each food group.
3. Calculate the total amount of each food you would need to eat to fulfill the daily requirements for that food group.

For example, if one slice of whole wheat loaf (toast) bread equals one serving, how many slices of bread would you need to eat in a day to meet your total daily recommended cereals and grains intake?

1 slice of whole wheat bread = 1 serving

Recommended daily intake for cereals and grains = 6 servings

$1 \text{ slice} \times 6 = 6 \text{ slices of bread}$

- How many apples would you need to eat to meet your daily recommended fruit needs?
- How many cups of yogurt would you need to eat to meet your daily recommended dairy needs?
- How many cups of green leafy vegetables would you need to eat to meet your daily recommended vegetable needs?
- How many cups of legumes would you need to eat to meet your daily recommended protein needs?





Estimating and Calibrating a Serving and Portion Measuring Tool

In this part of the activity the team members will estimate a portion of food that is equal to different serving sizes of various foods. Then you will use a measuring tool (cup, spoon, scale) to compare your estimate to the actual amount. Then each team member will calibrate their hand to be a measuring tool for each of these serving size measurements. Your hand can then be used whenever you need to approximate the number of servings in a portion of food you are eating.

Materials

- Food measuring spoons/cups/devices used for cooking
- Balance, scale, or other device to measure the weight of food items (if available)
- Plates, bowls, or cups to measure foods onto
- Suggested foods to measure out (but use whatever is available):
 - Uncooked or cooked rice
 - Uncooked or cooked beans
 - Nuts or seeds
 - Dried fruit
 - Raw vegetables or fruit, such as carrots or apples
 - Leafy greens, such as lettuce or spinach
 - Milk
 - Cheese

Procedure

This activity is best done as individuals or in small groups, depending on the amount of materials available.

1. **Estimate one portion.** Without using any measuring devices, fill a plate/bowl/cup with a portion of each food item provided that you think equals one serving size as indicated in the Lebanon food guidelines. For example, one serving is equal to:
 - 1 cup raw vegetables
 - 2 cups leafy greens





- ½ cup cooked rice
- ¼ cup uncooked rice
- ½ cup dried fruit
- ¼ uncooked beans
- ½ cooked beans
- 1 cup milk
- 15 grams nuts/seeds
- 45 grams cheese

2. **Measure your estimated portion.** Use the appropriate measuring device to measure your estimated portion for each item. Use the data table to document how close your estimated portion was to the actual serving size. For example, you could mark it as smaller, equal, or larger than a serving size. (So if you measure your estimated portion amount and find it was smaller than the actual serving size measurement, mark it as smaller. If you measure your estimated portion amount and find it was larger than the actual serving size measurement, mark it as larger.)

- Using the data you collected, how did your portion estimates compare to the actual serving size measured amounts?
- Does the data show that you are more likely to underestimate or overestimate serving sizes when taking a portion of food?

Food item	One serving size amount	Estimated measurement comparison





3. Calibrate your hand. Now you will calibrate your hand to be an approximate serving size measuring tool.

a. One food item at a time, measure out onto a plate one serving size of each of the foods you have available. For example, one serving is equal to:

- 1 cup raw vegetables
- 2 cups leafy greens
- $\frac{1}{2}$ cup cooked rice
- $\frac{1}{4}$ cup uncooked rice
- $\frac{1}{2}$ cup dried fruit
- $\frac{1}{4}$ uncooked beans
- $\frac{1}{2}$ cooked beans
- 1 cup milk
- 15 grams nuts/seeds
- 45 grams cheese

b. Take your fingers and/or entire hand and shape it into the approximate size of one serving of the food item. Determine how much or what part of your hand could represent one serving size of that food item.

- For example, your hand in a fist shape could be about the same size as one serving of milk. Or your pointer finger could be about the size of one serving of cheese.
- You can also use the surface area of your open or cupped hand. For example, one serving of rice or beans covers how much of your open or cupped hand?
- c. Use the data table and hand calibration icons to develop a hand calibration symbol and description for the different food item serving sizes.
- The hand calibration icons can be cut out, drawn on, or parts can be colored or circled to represent different amounts.
- If cut out, stick them to the data table.



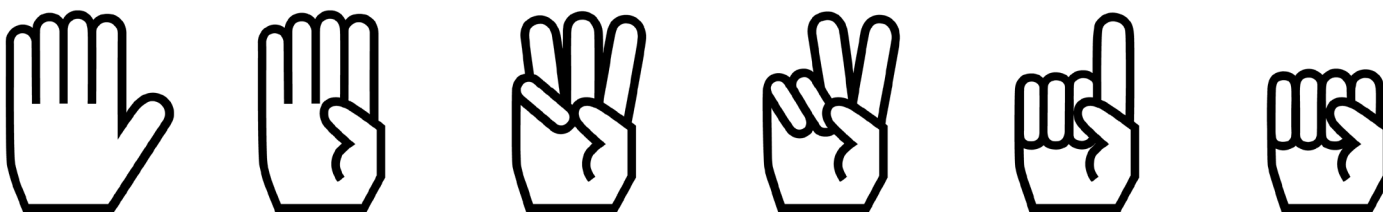
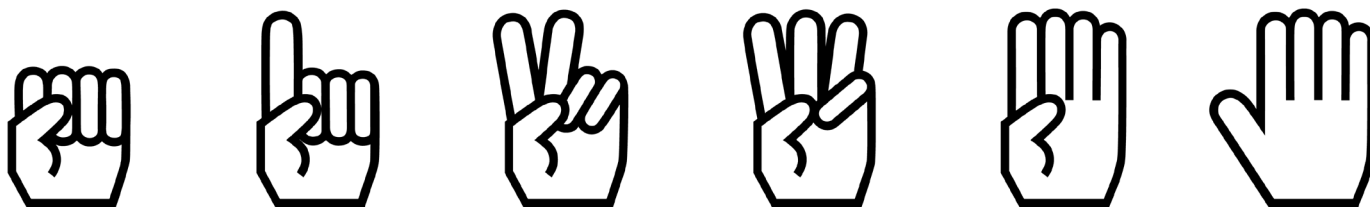
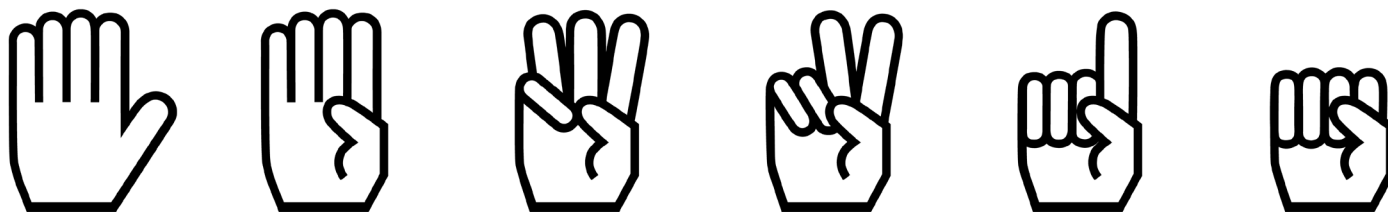
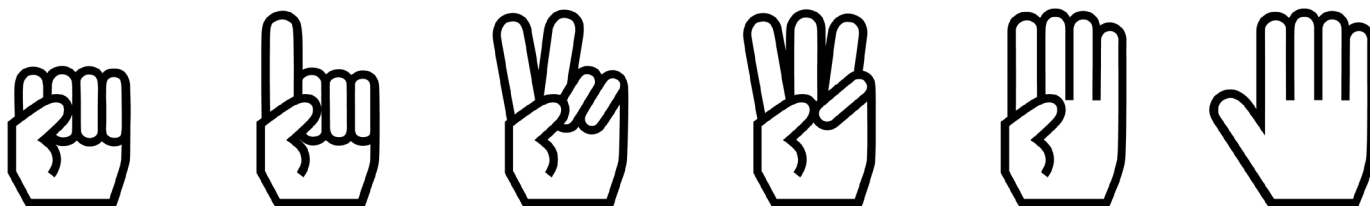


4. **Test your tool.** Team members will now test out their set of hand symbols and use the data to further calibrate their hand symbols.
 - a. Without the rest of the team seeing, have one team member measure out a known portion of various food items. This portion should be more or less than one serving. Do not share the exact portion size with the people testing their hand symbols.
 - b. Have the other team members use their data table and hand symbols to measure these portions of food. These team members are using their hand symbols to figure out the approximate number of servings in that portion.
 - c. Document this measurement on your data table.
 - d. After all food items have been measured with your hand symbols, have the person running the test reveal the exact measured amounts of each item.
 - e. Compare and contrast your hand serving size measurements with the actual measurements.
 - f. Based on the data, adjust or further calibrate your hand symbols to be more accurate.





Hand Calibration Icons





Hand Calibration Data Table

Name				
Food item	Food group	Serving size	Hand calibration symbol description	Hand calibration symbol drawing





Analyzing Nutrition Facts Labels

Many countries require food manufacturers to put Nutrition Facts labels on food items to inform consumers. Many packaged foods have this kind of label on the container. Here are two examples:

MILK

Cheese



These labels provide serving size information for the product. Determine the following for these two products.

	Cheese	Milk
Serving size unit		
Amount of one serving		
Number of servings in the whole container		
Calories in one serving		
Calories in the whole container		





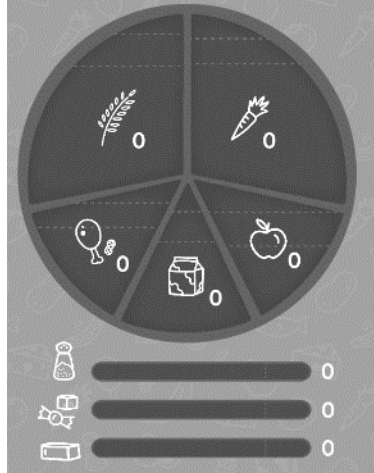
Locate a variety of products with Nutrition Facts labels in your home or community that you can analyze. Bring in the actual container to analyze.

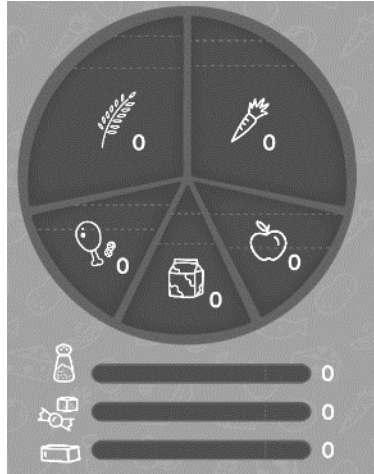
You will use the information on the labels to determine which hand symbol could be used to measure out a serving size of that product. Record your data below.

Name				
Food item	Food group	Amount of one serving size	Calories in one serving	Hand calibration icon for one serving

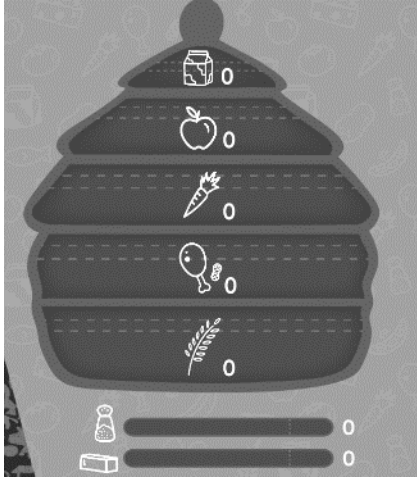


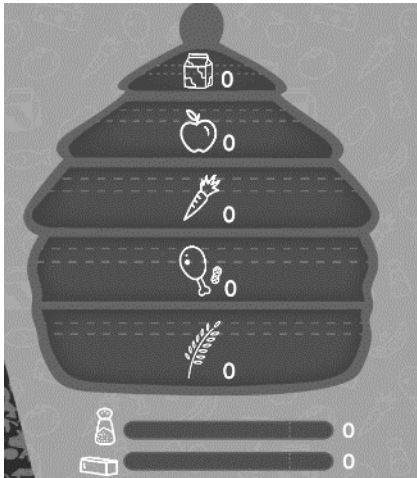
Task 3-6: Pick Your Plate! Data Table

Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
One	Australia	Morning			
		Midday			
		Evening			

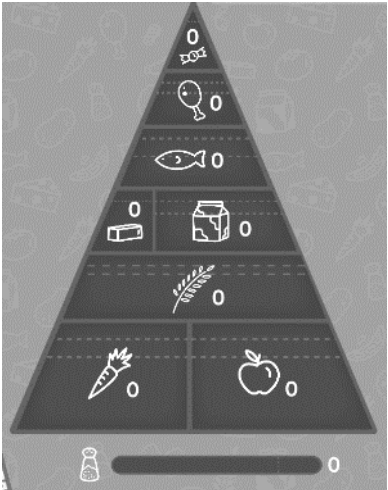
Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
Two	Australia	Morning			
		Midday			
		Evening			

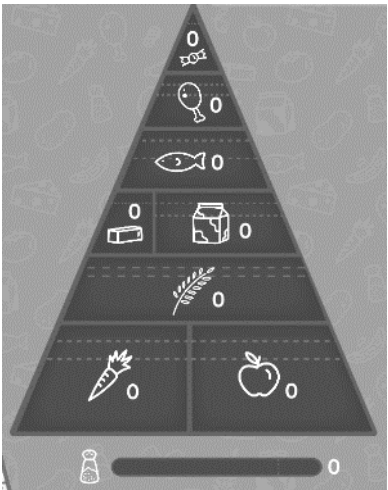


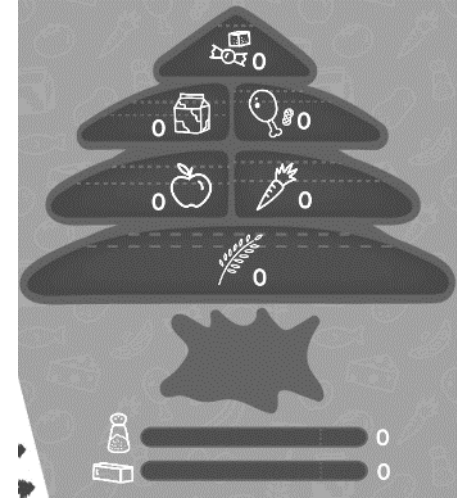
Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
One	Benin	Morning			
		Midday			
		Evening			

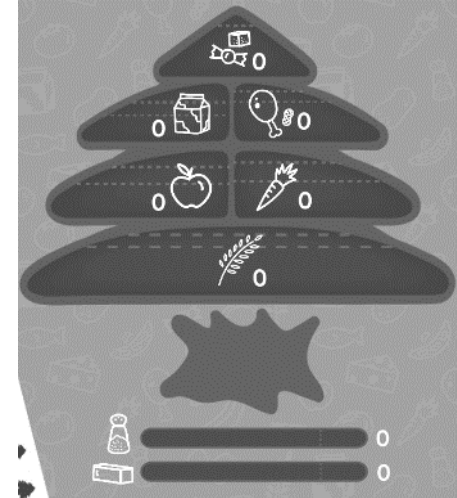
Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
Two	Benin	Morning			
		Midday			
		Evening			



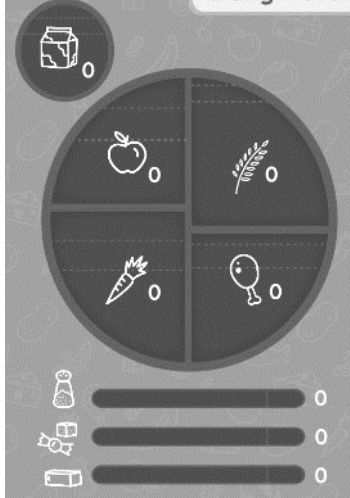
Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
One	Finland	Morning			
		Midday			
		Evening			

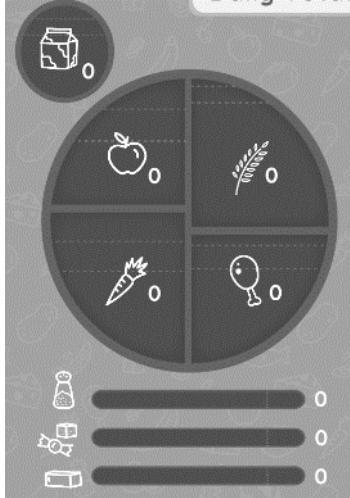
Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
Two	Finland	Morning			
		Midday			
		Evening			

Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
One	Lebanon	Morning			
		Midday			
		Evening			

Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
Two	Lebanon	Morning			
		Midday			
		Evening			



Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
One	United States of America	Morning			
		Midday			
		Evening			

Trial	Country	Meals	Total Meal Price	Daily Totals (Fill in)	Medal
One	United States of America	Morning			
		Midday			
		Evening			





Task 3-7. Collecting Building Blocks Oral Histories

Interview Questions

1. What types of foods or meals did you eat when you were a child?
2. Do you still eat the same foods you ate as a child? What has changed in your diet or eating patterns over time? What caused those changes?
3. What are your favorite foods from each of the food groups (grains, fruits, vegetables, protein, and dairy)?
4. Do you find it easy or difficult to regularly eat fresh foods from all the food groups? Why or why not?
5. Do you find the local or global food guidelines to be helpful for your daily life? Why or why not? If not, what advice could you offer to make them easier to use?

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 3-8. Analyzing the Building Blocks 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: Building Blocks. 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 3. Nutritional Building Blocks

How good is your knowledge about what makes up a healthy, well-balanced meal?

1. Excellent	2. Very good	3. Good	4. Fair	5. Poor	6. Unsure
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How often do you think about the nutritional value of food when deciding what to eat?

1. Often	2. Sometimes	3. Not at all	4. Unsure
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How familiar are you with your national or regional food guidelines for what to eat?

1. Excellent	2. Very well	3. Good	4. Fair	5. Poor	6. Unsure
--------------	--------------	---------	---------	---------	-----------

How well do you understand the following types of nutritional information?

A. Nutritional information leaflets/brochures

1. Not at all	2. Hardly	3. Somewhat	4. Well	5. Very well	6. Unsure
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B. Food label information

1. Not at all	2. Hardly	3. Somewhat	4. Well	5. Very well	6. Unsure
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C. TV/radio/Internet programs on food and nutrition

1. Not at all	2. Hardly	3. Somewhat	4. Well	5. Very well	6. Unsure
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D. Verbal recommendations regarding food and nutrition from professionals

1. Not at all	2. Hardly	3. Somewhat	4. Well	5. Very well	6. Unsure
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E. Food nutrition advice from family members or friends

1. Not at all	2. Hardly	3. Somewhat	4. Well	5. Very well	6. Unsure
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Based on how you eat regularly, what is your eating style? (check all that apply)

Fast eater	Erratic eater	Emotional eater (stressed, bored, sad, etc.)	Late night eater	Time-constrained eater
Dislike “healthy” food	Travel frequently	Do not plan meals/menus	Rely on convenience items	Family member(s) have different tastes
Love to eat	Eat too much	Eat because I have to	Negative relationship with food	Struggle with eating issues
Confused about food/nutrition	Frequently eat fast food	Poor snack choices	Do not have easy access to regular meals	Frequently eat alone





Task 3-9. Debriefing the Building Blocks 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 3.
3. Is there any data the team collected throughout Part 3 that could be added to this map? Locations of possible community partners? Locations of oral history interviews? Locations of food advertisements? 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 3? 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?
 - a. Make a plan as a team to contact and communicate with these partners.
 - b. Create a list of questions you would like to ask the partners.
 - c. E-mail, phone, or write to each partner with your questions.
 - d. 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: Every country should require food to be labeled with nutritional information.





Ethical: It is okay for food companies not to provide nutritional information about their products.

Move to a whole team discussion. Remember, team members must back up their 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 3: Building Blocks?
2. What evidence did you collect during Part 3 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 address 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 3 that would be useful when thinking about the problem question: *How do we ensure good nutrition for all?*

