FFA Blue 365: Lesson 3

Feeding the World-Part 1

Created: 01/2019 by the National FFA Organization

The FFA Blue 365 lesson series is intended to bring innovative technology, science, research and entrepreneurship to the classroom. These lessons are designed to highlight the innovations and technologies transforming agriculture.

STUDENT LEARNING OBJECTIVES:

After completing these activities, students will …

1. Define the following concepts: feeding the world and food insecurity.
2. Illustrate the concept of feeding the world.
3. Examine four key elements to food insecurity and food consumption.
4. Investigate the impact of food insecurity and food consumption at the global, national and local levels.
5. Compare and contrast food insecurity issues in global, state and local regions.

TIME REQUIRED: 90 minutes

RESOURCES:

1. Video: "Feeding the World," (Alltech, 2011), https://www.youtube.com/watch?v=VDqHlYHIVkY
2. Website: "State of Food Security and Nutrition Around the World," (Food and Agriculture Organization, 2018), http://www.fao.org/state-of-food-security-nutrition/en/
3. Website: "Hunger in America," (Feeding America, 2018), https://www.feedingamerica.org/hunger-in-america?s_src=WXXX1MTMG&_ga=2.142209842.185763605.1546865895-1598350509.1546577041
4. Website: "Food Insecurity in the United States," (Feeding America, 2018), http://map.feedingamerica.org
5. Website: "Agriscience Fair," (National FFA Organization, 2018), https://www.ffa.org/participate/awards/agriscience-fair/
6. Website: "Farm Journal Foundation," (Farm Journal Foundation, 2025), https://www.farmjournalfoundation.org/global-food-security
7. Website: AgExplorer (AgExplorer, 2018), AgExplorer.ffa.org

EQUIPMENT AND SUPPLIES NEEDED:

1. Internet access to play the videos in real time or embed them in a PowerPoint
2. A copy of the "Fundamentals of Feeding the World" worksheet for each student
3. A copy of the "Feeding Insecurity Basics" worksheet for each student
4. A copy of the "Feeding the World Globally" worksheet for each student
5. A copy of the "Feeding the World Nationally" worksheet for each student
6. A copy of the "Feeding the World Locally" worksheet for each student
7. A copy of the "Feeding the World Superheroes" worksheet for each student
8. Colored pens/markers
9. Blank paper

THIS QUICK LESSON PLAN WOULD WORK WELL AS AN:

1. Companion lesson for agriculture issues or world hunger.
2. Introduction to food security.
3. Introduction to critical issues in agriculture.
4. Introduction to innovations in agriculture.
5. Introduction to technology in agriculture.

STUDENT ACTIVITY SHEETS

https://ffa.box.com/s/ah3s46iep4lovkzyjaq8527v38w5dk5s (Word)
https://ffa.box.com/s/w236ui3r42o34nc3lyhdjg3bz29ue4nh (PDF)

THESE ACTIVITIES ARE ALIGNED TO THE FOLLOWING STANDARDS:

AFNR Performance Element

- CS.01. Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster
- CS.02. Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role of agriculture, food and natural resources (AFNR) in society and the economy.
- CS.05. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources career pathways.
- CS.06. Analyze the interaction among AFNR systems in the production, processing and management of food, fiber and fuel and the sustainable use of natural resources.

FFA Precept

- FFA.PL-A.Action: Assume responsibility and take the necessary steps to achieve the desired results, no matter what the goal or task at hand.
- FFA.PL-C.Vision: Visualize the future and how to get there.
- FFA.CS-M.Communication. Effectively interact with others in personal and professional settings.
- FFA.CS-N.Decision Making. Analyze a situation and execute an appropriate course of action.

Common Career Technical Core

- AG1. Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster.
- AG2. Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role of agriculture, food, and natural resources (AFNR) in society and the economy.
- AG5. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources Career Pathways.
- AG6. Analyze the interaction among AFNR systems in the production, processing, and management of food, fiber, and fuel and the sustainable use of natural resources.

NASDCTEc

- AGC09.02. Select, research and examine critical aspects of career opportunities in one or more AFNR career pathways in order to gain an understanding of the breadth of occupations within this cluster.
- AGC10.03. Compare and contrast issues affecting the AFNR industry including biotechnology, employment, safety, environmental and animal welfare to demonstrate an understanding of the trends and issues important to careers in this industry.

Common Core – Reading: Informational Text

- CCSS.ELA-Literacy.RI.9-10.1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- CCSS.ELA-Literacy.RI.9-10.2. Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
- CCSS.ELA-Literacy.RI.9-10.3. Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.

Common Core – Writing

- CCSS.ELA-Literacy.W.9-10.2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

Common Core – Speaking and Listening

- CCSS.ELA-Literacy.SL.9-10.2. Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
- CCSS.ELA-Literacy.SL.9-10.4. Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

Common Core – Science & Technical Subjects

- CCSS.ELA-Literacy.RST.9.10.7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

- CCSS.ELA-Literacy.RST.9.10.8. Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

Common Core – Literacy in Science & Technical Subjects: Writing

- CCSS.ELA-Literacy.WHST.9.10.6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Next Generation Science

- HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

Green/Sustainability Knowledge and Skill Statements

- AFNR Career Cluster, Statement 2. Analyze community practice or policy development related to sustainability in AFNR.

AFNR Career Ready Practices

- CRP.04. Communicate clearly, effectively, and with reason. Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written, verbal and/or visual methods.
- CRP.05. Consider the environmental, social, and economic impact of decisions. Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organizations and the environment.
- CRP.06. Demonstrate creativity and innovation. Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization.
- CRP.07. Employ valid and reliable research strategies. Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies.
- CRP.08. Utilize critical thinking to make sense of problems and persevere in solving them. Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem.

Partnership for 21st Century Skills

- Communication
- Critical Thinking and Problem Solving
- Global Awareness
- Information, Communications, and Technology Literacy
- Think Creatively

LESSON PLAN:

1. *Bell Ringer:* One of the biggest challenges facing the future is *if/how/when* individuals involved in the food, fiber and natural resources industries can *feed the world*. *Feeding the world* is often considered vital to addressing the global hunger and food challenge, but the phrase itself can often elicit a different interpretation from different individuals. To help address critical challenges such as global hunger, we should understand our personal perspective of what *feeding the world* means.
    a. Using the "Fundamentals of Feeding the World" worksheet, define and illustrate what feeding the world means to you. Get creative. Think bigger than just food production and farming.
        i. *Consider these questions*: What can agriculturists do differently to help increase food production in an innovative and sustainable way? What can consumers and individual households do to help feed the world? How can policymakers be involved with the feeding the world initiative? What could be done differently to conserve natural resources while increasing food production?
        ii. Share definitions and illustrations with the class and/or display them in the classroom.
    b. Think about challenges facing global hunger, and discuss how feeding the world more efficiently or sustainably can impact the agriculture industry.

2. *Introduction:* A primary element of successfully, efficiently and sustainably feeding the world is an understanding of food insecurity.
    a. Food insecurity should not be confused with hunger or famine.
    b. According to the Food and Agriculture Organization (FAO, 2018), food insecurity is defined as "limited access to food, at the level of individuals or households, due to lack of money or other resources" (p. 142).

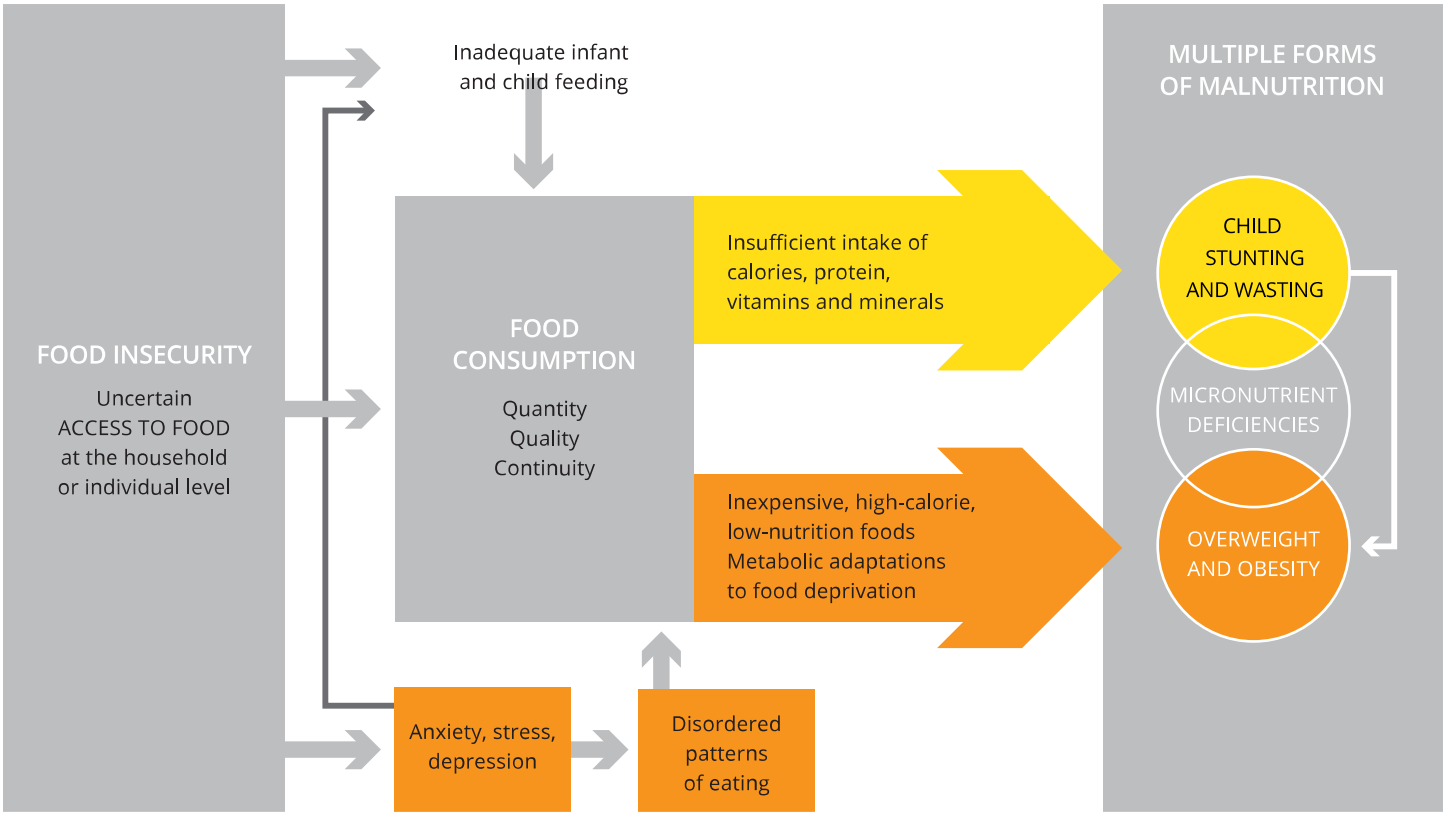


Figure 1. Reprinted from FAO's (2018, para. 15) "State of Food Security and Nutrition Around the World" website. The website can be accessed at http://www.fao.org/state-of-food-security-nutrition/en/.

i. Divide students into pairs.
ii. Think critically about the components in Figure 1. Multiple descriptions exist for each food insecurity and food consumption element (see left and center-left side of Figure 1). However, using context clues from Figure 1 and FAO's (2018) "State of Food Security and Nutrition Around the World" as resources, discuss and complete the "Food Insecurity Basics" worksheet. (The full report can be downloaded from http://www.fao.org/state-of-food-security-nutrition/en/; pages 26 through 35 may be particularly helpful.)
    1. Questions included in the worksheet:
        a. Define the basic elements of food insecurity and food consumption (access to food, quantity, quality, continuity).
        b. How can unbalanced food consumption (quantity, quality or continuity) influence intake of calories, protein, vitamins and minerals? What would happen if the elements of food consumption (quantity, quality or continuity) are too low? What would happen if these elements were too high?
        c. Define malnutrition. What are some possible causes of malnutrition? What are some possible consequences of malnutrition?
        d. Describe (in detail) three concerns you have as a young agriculturist, scientist, natural resource advocate, etc. regarding food insecurity and food consumption across the globe.
        e. Why are these concerns? What can be done to address these concerns?
        f. What efforts (if any) currently exist to help address these needs?

c. Food insecurity addresses the availability of food, and hunger and famine address the non-availability, or lack, of food supplies and resources. Therefore, to feed the world, we need to investigate the impact of food insecurity at the global, national and local levels.

3. *Part 1 — Feeding the World Globally*

a. Analyzing the full extent of food insecurity starts at the global level.
b. FAO (2018) estimated the number of undernourished people in the world, i.e., those facing chronic food deprivation, increased from approximately 804 million in 2016 to nearly 821 million in 2017. The data in 2017 was the third year in row that showed an increase in the number of undernourished people in the world.

i. Watch the video "Feeding the World" (Alltech, 2011), available at https://www.youtube.com/watch?v=VDqHlYHIVkY.
    1. *Optional:* If watching YouTube is not an option, have students go directly to FAO's (2018) "State of Food Security and Nutrition Around the World" website, available at http://www.fao.org/state-of-food-security-nutrition/en/.
ii. Visit FAO's (2018) "State of Food Security and Nutrition Around the World" website, available at http://www.fao.org/state-of-food-security-nutrition/en/.
iii. Review the chart "Prevalence of Undernourishment in the World, 2005–2017" in Paragraph 4 on the website.
    1. If you download the "State of Food Security and Nutrition Around the World" report from the website—http://www.fao.org/state-of-food-security-nutrition/en/—the "Prevalence of Undernourishment in the World, 2005–2017" chart is listed on Page 4.
iv. Have students select a region of the world that interests them and research food insecurity issues in that region.
v. Students should complete and discuss the "Feeding the World Globally" worksheet.

4. *Part 2 — Feeding the World Nationally*
a. Hunger is not just a global problem. It is a national problem. Food insecurity is more prevalent in the United States than it has been in previous years.
    i. Have students visit the Feeding America (2018) "Hunger in America" website, available at https://www.feedingamerica.org/hunger-in-america?s_src=WXXX1MTMG&_ga=2.142209842.185763605.1546865895-1598350509.1546577041.
    ii. Visit Feeding America's (2018) "Food Insecurity in the United States" website, available at http://map.feedingamerica.org.
    iii. Have students review the statistics for food insecurity in the United States.
    iv. With a partner, complete and discuss the "Feeding the World Nationally" worksheet.

5. *Part 3 — Feeding the World Locally*
a. Regardless of the extent of food insecurity in individual communities, alleviating hunger and raising awareness for food challenges lies within the local level.
    i. Students should use Feeding America's (2018) "Food Insecurity in The United States" website to find their local area and review the statistics in their selected county. The URL is http://map.feedingamerica.org.
    ii. Using information the students discover about their selected county, they should complete and discuss the "Feeding the World Locally" worksheet.

6. *Follow-up:* Have students compare and contrast their three selected regions (global, state and local) in a brief three- to five-minute oral presentation delivered to the class. Students should make clear connections between each region and answer the following questions: What are the similarities and differences of each region? What are each location's biggest challenges? Using what we know about these three regions, what can be done to help feed the world in the future?
a. If time permits, encourage students to use visual aids and/or technology to share their findings.

7. *Leveling Up:*
a. Agriscience fair project:
    i. Read the overview and rules for the National FFA Organization's (2018) Agriscience Fair at https://www.ffa.org/participate/awards/agriscience-fair/.
    ii. Identify a need within one of the six agriscience fair categories: animal systems; environmental service/natural resource systems; food products and processing systems; plant systems; power, structural and technical systems; and social science.
    iii. Using the key elements of food security as a framework, the National FFA Agriscience Fair handbook and online resources, prepare an agriscience fair project to investigate the identified need.
b. "Global, national and local" infographic:
    i. Using the information they researched about food insecurity at the global, national and local levels, have students create an infographic using two to three statistics about food insecurity at each level.
        1. Students can use blank paper with colored pens/markers for their infographics or they can use an online infographic generator:
            a. Piktochart — https://piktochart.com/formats/infographics/
            b. Canva — https://www.canva.com
c. "School or community service project":
    i. Identify a need on the school campus or in the community regarding food insecurity.
    ii. Organize a community or school food drive to donate to the local food pantry, senior citizen center or youth facility.
d. "State of Food Security Around the World" illustration:

i. Break students into teams of three or four.
ii. Recreate the FAO's (2018) "State of Food Security Around the World" diagram (Figure 1) using paper and markers (if available, have students recreate the diagrams using additional materials, including flipchart pads, white boards, playdough, pipe cleaners, etc.).
    1. See above for *Figure 1*. Reprinted from FAO's (2018, para. 15) "State of Food Security and Nutrition Around the World" website. The URL is http://www.fao.org/state-of-food-security-nutrition/en/.
iii. Select different components of the figure to distribute among student groups.
iv. Encourage students to dive deeper into the meaning of their assigned section and explain to the class what each component means in the context of food security.
    1. For example, distribute the different types of malnutrition (child stunting and wasting, micronutrient deficiencies, and overweight and obesity) to different student groups and have them research enough content to give a four- to six-minute presentation on the assigned topic to the class.

e. "Ted Talk on hunger awareness":
i. Watch the "Blue 365" (2018) video from Sara Steinlage, available at https://vimeo.com/307344189/cdabf5f2cd.
ii. Watch the "Blue 365" (2018) video from Devry Boughner from Cargill, available at https://vimeo.com/307347412/88b6174045.
iii. Using techniques and points from Steinlage and Boughner, develop a 12- to 15-minute Ted Talk-style oral presentation to deliver to the class about an issue regarding food security/insecurity or innovations to increase food production.
    1. If possible, set your classroom up around a center stage to allow students to speak as if they were giving an real Ted Talk.

f. "Written report":
i. Watch the "Blue 365" (2018) video from Sara Steinlage, available at https://vimeo.com/307344189/cdabf5f2cd.
ii. Watch the "Blue 365" (2018) video from Devry Boughner from Cargill, available at https://vimeo.com/307347412/88b6174045.
iii. Using techniques and points from Steinlage and Boughner, have students prepare an eight- to 10-page written report analyzing opportunities to increase how we feed the world in the future. Students should be sure to highlight the following:
    1. What is feeding the world?
    2. How are we currently feeding the world?
    3. What can be done to increase sustainable food production in the future?

8. *Exit Ticket:* Link food security/insecurity and efforts to help feed the world to potential careers.

Critical challenges, such as feeding the world, require a full team of "superheroes" who can address the needs of hunger and food insecurity. Many careers in these fields must consider the environmental, social and economic impact of decisions and can include a team of scientists, engineers, computer programmers, mathematicians, artists, communicators, educators and numerous others. Feeding the world requires many "superheroes."

Visit AgExplorer (AgExplorer.ffa.org) and review the career focus areas. Consider the environmental, social and economic impact of feeding the world and then identify a team of at least four superheroes (types of careers) you would hire to help feed the world.

Complete the "Feeding the World Superheroes" worksheet.

NAME: _____

Aligned to the following standards:
CS.01; CS.02; CS.05; CS.06; FFA.PL-A; FFA.PL-C; FFA.CS.M; FFA.CS-N; AG1; AG2; AG5; AG6; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; CCSS.ELA. RST. 9-10.7; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08

Fundamentals of Feeding the World

DIRECTIONS:

One of the biggest challenges facing the future is *if/how/when* individuals involved with the food, fiber and natural resources industries can feed the world. Feeding the world is the first step in addressing the global hunger and food challenge. To analyze how to address global hunger, we must first understand our own perspective of what feeding the world means.

Define and illustrate below what *feeding the world* means to you. Think bigger than just food production and farming. Get creative. To help you define and illustrate what *feeding the world* means to you, it might be helpful to think about the following:

- What do agriculturists currently do to feed the world?
- What ways can agriculturists increase food production in an innovative and sustainable way?
- What can consumers and individual households do to help feed the world?
- How can policymakers be involved with the feeding the world initiative?
- How can we conserve natural resources while also increasing food production?

Define what *feeding the world* means to you: _____

_____

_____

_____

_____

Illustrate what *feeding the world* means to you:

List 2 to 3 examples of how agriculturists, consumers and policymakers can make a difference feeding the world.

Agriculturists:

Example: Agriculturists can install drip irrigation systems in row crop farms to help reduce water consumption.

Example 1:

Example 2:

Example 3:

Consumers:

Example: Consumers can find ways to get involved with the food movement by planting backyard gardens or windowsill vegetables.

Example 1:

Example 2:

Example 3:

Policymakers

Example: Policymakers can write bills to support research efforts that are focused on conservation programs to help farmers make changes on properties.

Example 1:

Example 2:

Example 3:

NAME: _____

Aligned to the following standards:
CS.01; CS.02; CS.05; CS.06; FFA.PL-A; FFA.PL-C; FFA.CS.M; FFA.CS-N; AG1; AG2; AG5; AG6; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; CCSS.ELA. RST. 9-10.7; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08

Food Insecurity Basics

DIRECTIONS:

Food insecurity should not be confused with hunger or famine. The Food and Agriculture Organization (FAO, 2018) defines food insecurity as "limited access to food, at the level of individuals or households, due to lack of money or other resources" (p. 142).

Review Figure 1 and use FAO's (2018) "State of Food Security and Nutrition Around the World" website (http://www.fao.org/state-of-food-security-nutrition/en/) to answer the following questions.

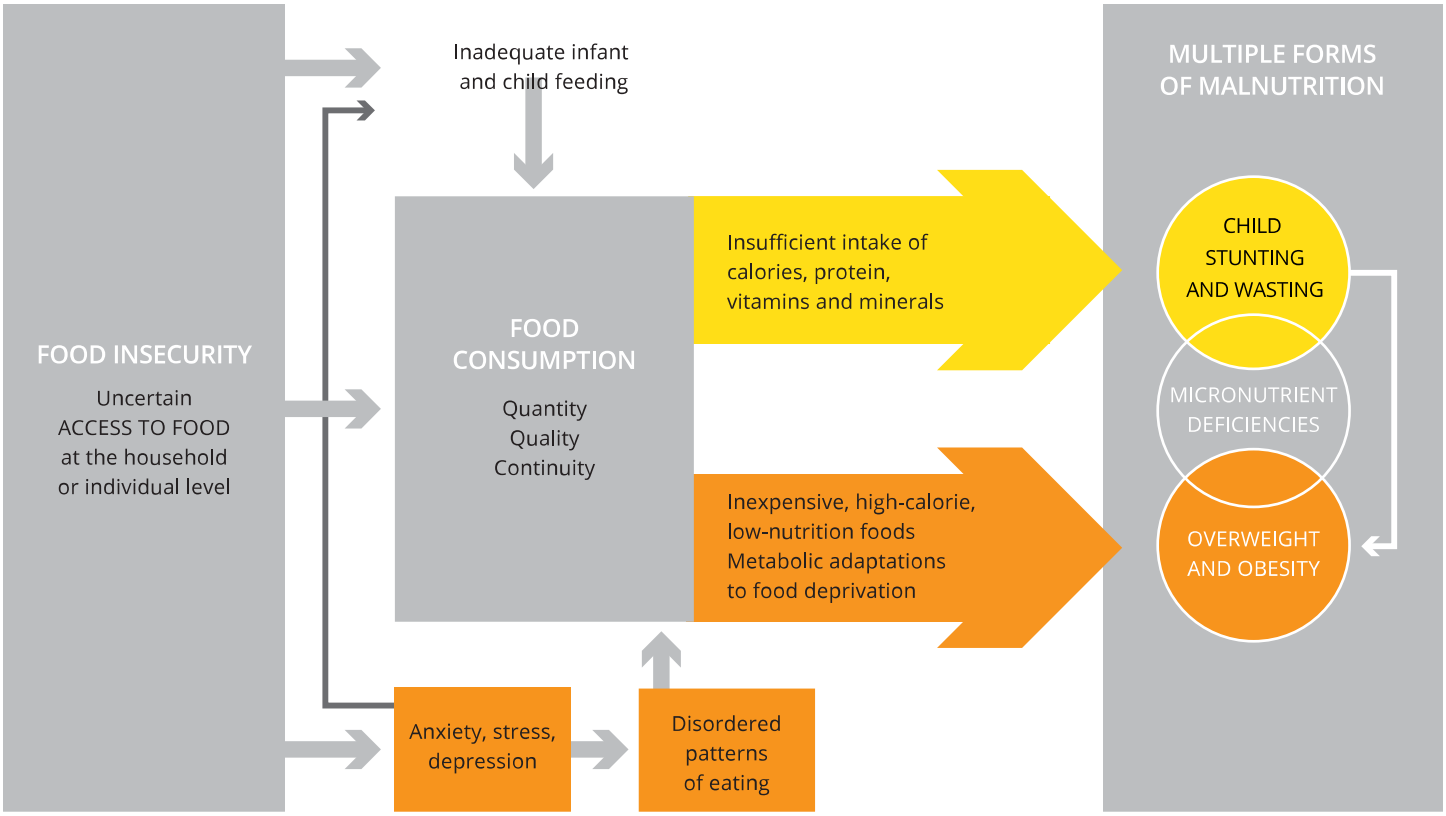


Figure 1. Reprinted from FAO's (2018, para. 15) "State of Food Security and Nutrition Around the World" website, available at http://www.fao.org/state-of-food-security-nutrition/en/.

1) Think critically about the components in Figure 1. Multiple descriptions exist for each food insecurity and food consumption element (see left and center-left side of Figure 1). However, using context clues from Figure 1 and FAO's (2018) "State of Food Security and Nutrition Around the World" as resources, write your personal definitions of the basic elements of food insecurity and food consumption. (The full report can be downloaded from http://www.fao.org/state-of-food-security-nutrition/en/; pages 26 through 35 may be particularly helpful.)

   a. Access to food:

   b. Quantity of food consumption:

   c. Quality of food consumption:

d. Continuity of food consumption:

2) How can unbalanced food consumption (quantity, quality or continuity) influence intake of calories, protein, vitamins and minerals?
   - What would happen if the elements of food consumption (quantity, quality or continuity) are too low?
   - What would happen if these elements were too high?

3) Define malnutrition. What are some possible causes of malnutrition? What are some possible consequences of malnutrition?

4) Describe (in detail) three concerns you have as a young agriculturist, scientist, natural resource advocate, etc. regarding food insecurity and food consumption across the globe. (Use the "State of Food Security and Nutrition Around the World" website, http://www.fao.org/state-of-food-security-nutrition/en/, as a reference):

a. Why are these concerns? What can be done to address these concerns?

b. What efforts (if any) currently exist to help address these needs?

NAME: _____

Aligned to the following standards:
CS.01; CS.02; CS.05; CS.06; FFA.PL-A; FFA.PL-C; FFA.CS.M; FFA.CS-N; AG1; AG2; AG5; AG6; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; CCSS.ELA. RST. 9-10.7; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08

Feeding the World Globally

DIRECTIONS:

Analyzing the extent of food insecurity starts at the global level. FAO (2018) estimated the number of undernourished people in the world, i.e., those facing chronic food deprivation, increased from approximate 804 million in 2016 to nearly 821 million in 2017. Review FAO's (2018) "State of Food Security and Nutrition Around the World" website, available at http://www.fao.org/state-of-food-security-nutrition/en/.

Complete the following:

- Review the chart "Prevalence of Undernourishment in the World, 2005–2017" in Paragraph 4 on the website.
    a. If you download the "State of Food Security and Nutrition Around the World" report from the website (http://www.fao.org/state-of-food-security-nutrition/en/) the needed chart is listed on Page 4.
- Highlight and label a region of the world.
- Research food insecurity issues in the selected region using the internet and available external resources.

1. Name of country or region: _____.

2. What were the percentages of undernourishment in the selected region during each of the years listed below?

    a. 2005: _____.
    b. 2010: _____.
    c. 2012: _____.
    d. 2014: _____.
    e. 2016: _____.

3. Analyze the challenges in your selected region using the four key elements of food insecurity and food consumption. What challenges or barriers might your region face in the following food insecurity categories?

Access to Food:	***Quantity:***	***Quality:***	***Continuity:***

NAME: _____

Aligned to the following standards:
CS.01; CS.02; CS.05; CS.06; FFA.PL-A; FFA.PL-C; FFA.CS.M; FFA.CS-N; AG1; AG2; AG5; AG6; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; CCSS.ELA. RST. 9-10.7; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08

Feeding the World Nationally

DIRECTIONS:

Hunger is not just a global problem. It is a national problem. Food insecurity is more prevalent in the United States than it has been in previous years.

Complete the following:

- Visit the Feeding America (2018) "Hunger in America" website, available at https://www.feedingamerica.org/hunger-in-america?s_src=WXXX1MTMG&_ga=2.142209842.185763605.1546865895-1598350509.1546577041.
- Visit Feeding America's (2018) "Food Insecurity in The United States" website (http://map.feedingamerica.org).
    - Answer trends in the full country before clicking on an individual state. Scroll to the middle of the website's homepage to find the most recent national statistics within the United States.
- Review the statistics for food insecurity in the United States and complete the following questions.

1. How many food insecure people are in the United States? _____

2. What is the food insecurity rate in the United States? _____

   Draw a pie chart to illustrate this percentage of food insecurity in the United States.

3. What are the estimated percentages of program eligibility among food insecure people in the United States?

_____ **%**	% Above Other Nutrition Programs—Threshold of 185% Poverty
_____ **%**	% Between 130% and 185% Poverty
_____ **%**	% Below SNAP Threshold—130% Poverty

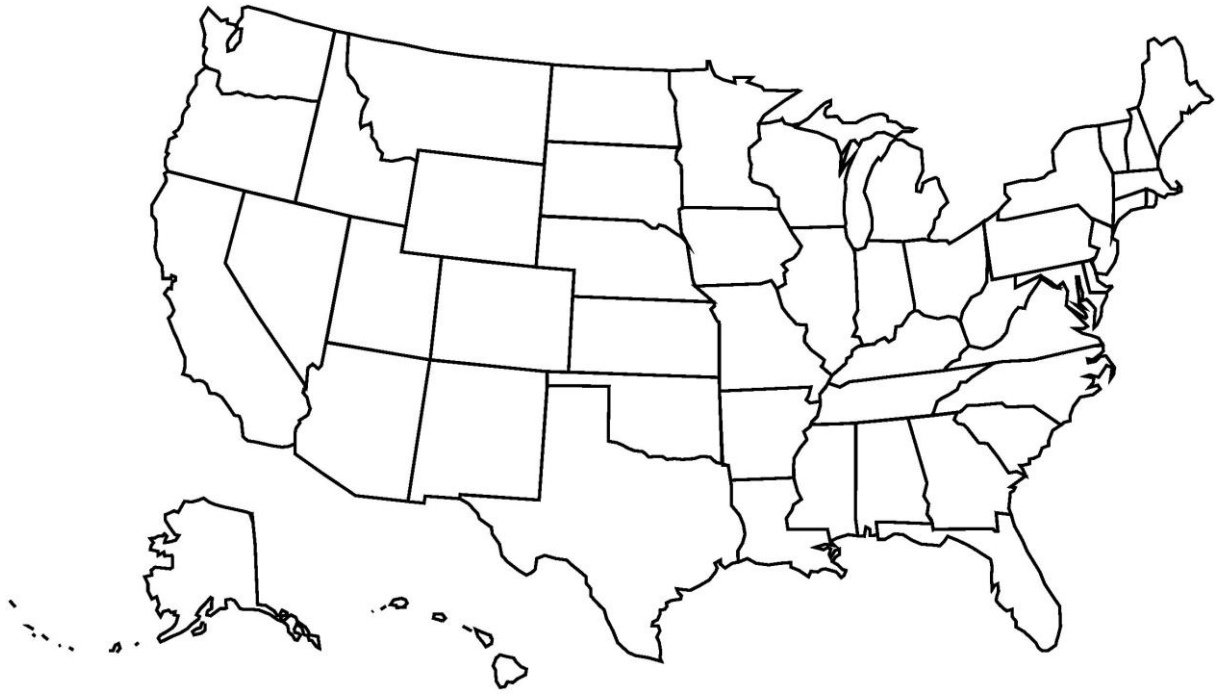
4. What is the average meal cost? _____

5. What is the annual food budget shortfall? _____

6. Of these statistics, what is the most surprising or alarming to you? Why?

NAME: _____

7. Using Feeding America's (2018) "Food Insecurity in The United States" website (http://map.feedingamerica.org), select a state to investigate trends and statistics for food insecurity. Highlight and label the selected state.



Name of selected state: _____

8. When you click on a selected state, each state should have a statistical printout that looks similar to this:

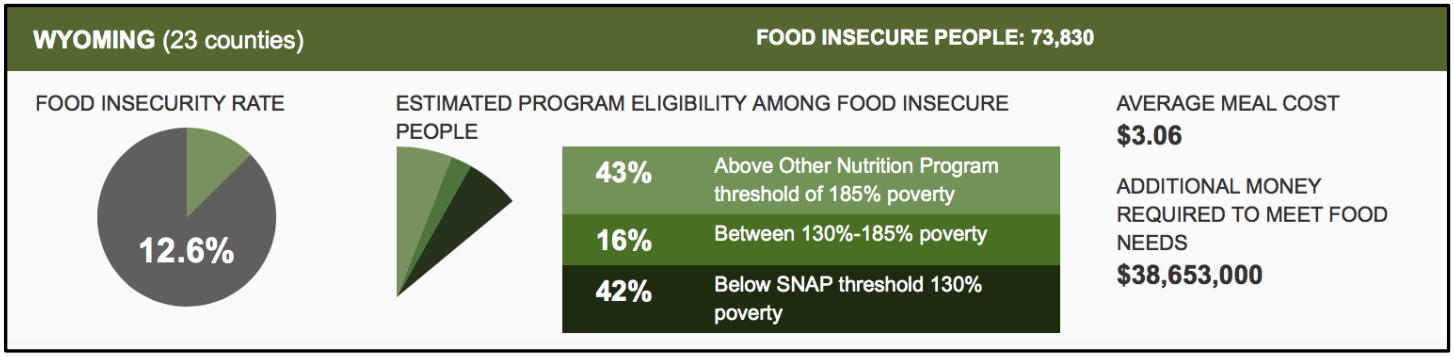


Figure 2. Example state printout.

Using your selected state, complete the following information:

1. Number of food insecure people: _____.
2. Food insecurity rate: _____.
3. What are the estimated percentages of program eligibility among food insecure people in your selected state?

_____ %	% Above Other Nutrition Programs—Threshold of 185% Poverty
_____ %	% Between 130% and 185% Poverty
_____ %	% Below SNAP Threshold—130% Poverty

4. What is the average meal cost? _____

Additional money required to meet food needs: _____

NAME: _____

Aligned to the following standards:
CS.01; CS.02; CS.05; CS.06; FFA.PL-A; FFA.PL-C; FFA.CS.M; FFA.CS-N; AG1; AG2; AG5; AG6; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; CCSS.ELA. RST. 9-10.7; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08

Feeding the World Locally

DIRECTIONS:

Regardless of the extent of food insecurity in individual communities, alleviating hunger and raising awareness for food challenges lies within the local level.

Complete the following:

- Use Feeding America's (2018) "Food Insecurity in The United States" website to click on your local area to review the statistics in your selected county. The URL is http://map.feedingamerica.org.
- Using information you discover about your selected county, complete the following questions.

When you click on a selected county, each county should have a statistical printout that looks similar to this:

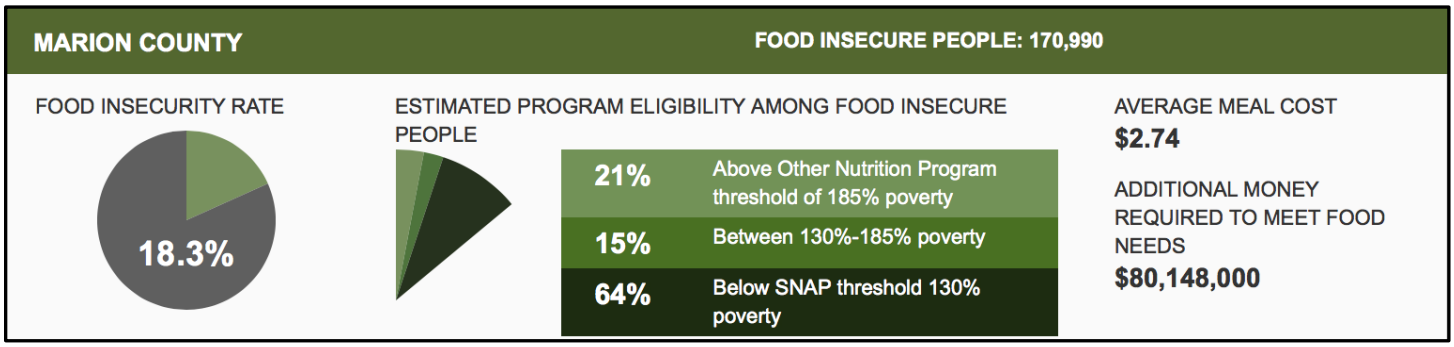


Figure 3. Example county printout.

Using your selected county, provide the following information:

1. Number of food insecure people: _____.
2. Food insecurity rate: _____.
3. What are the estimated percentages of program eligibility among food insecure people in your selected state?

_____ %	% Above Other Nutrition Programs— Threshold of 185% Poverty
_____ %	% Between 130% and 185% Poverty
_____ %	% Below SNAP Threshold— 130% Poverty

4. What is the average meal cost?
   _____
5. Additional money required to meet food needs:
   _____
6. Think critically about the statistics for your selected county. What are some ideas to help reduce local food insecurity? What businesses or individuals could help spread the mission?
7. In what ways can your agricultural education class or FFA chapter promote hunger awareness in your community or school?

NAME: ________________________

Aligned to the following standards:
CS.01; CS.02; CS.05; CS.06; FFA.PL-A; FFA.PL-C; FFA.CS.M; FFA.CS-N; AG1; AG2; AG5; AG6; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; CCSS.ELA. RST. 9-10.7; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08

Feeding the World Superheroes

DIRECTIONS:

Critical challenges, such as feeding the world, require a full team of "superheroes" who can address the needs of hunger and food insecurity. Many careers in these fields must consider the environmental, social and economic impact of decisions and can include a team of scientists, engineers, computer programmers, mathematicians, artists, communicators, educators and numerous others. Feeding the world requires many "superheroes."

Visit AgExplorer (AgExplorer.ffa.org) and review the career focus areas. Consider the environmental, social and economic impact of feeding the world and then identify a team of at least four superheroes (types of careers) you would hire to help feed the world.

Superhero (Job) Title:

Which career focus areas could help prepare you for this type of career?
Refer to AgExplorer (AgExplorer.ffa.org) for a list.

What are their specific "superpowers"? How could they contribute to helping feed the world?

Superhero (Job) Title:

Which career focus areas could help prepare you for this type of career?
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CS.01; CS.02; CS.05; CS.06; FFA.PL-A; FFA.PL-C; FFA.CS.M; FFA.CS-N; AG1; AG2; AG5; AG6; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; CCSS.ELA. RST. 9-10.7; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08

KEY — Food Insecurity Basics

DIRECTIONS:

Food insecurity should not be confused with hunger or famine. The Food and Agriculture Organization (FAO, 2018) defines food insecurity as "limited access to food, at the level of individuals or households, due to lack of money or other resources" (p. 142).

Review Figure 1 and use FAO's (2018) "State of Food Security and Nutrition Around the World" website (http://www.fao.org/state-of-food-security-nutrition/en/) to answer the following questions.

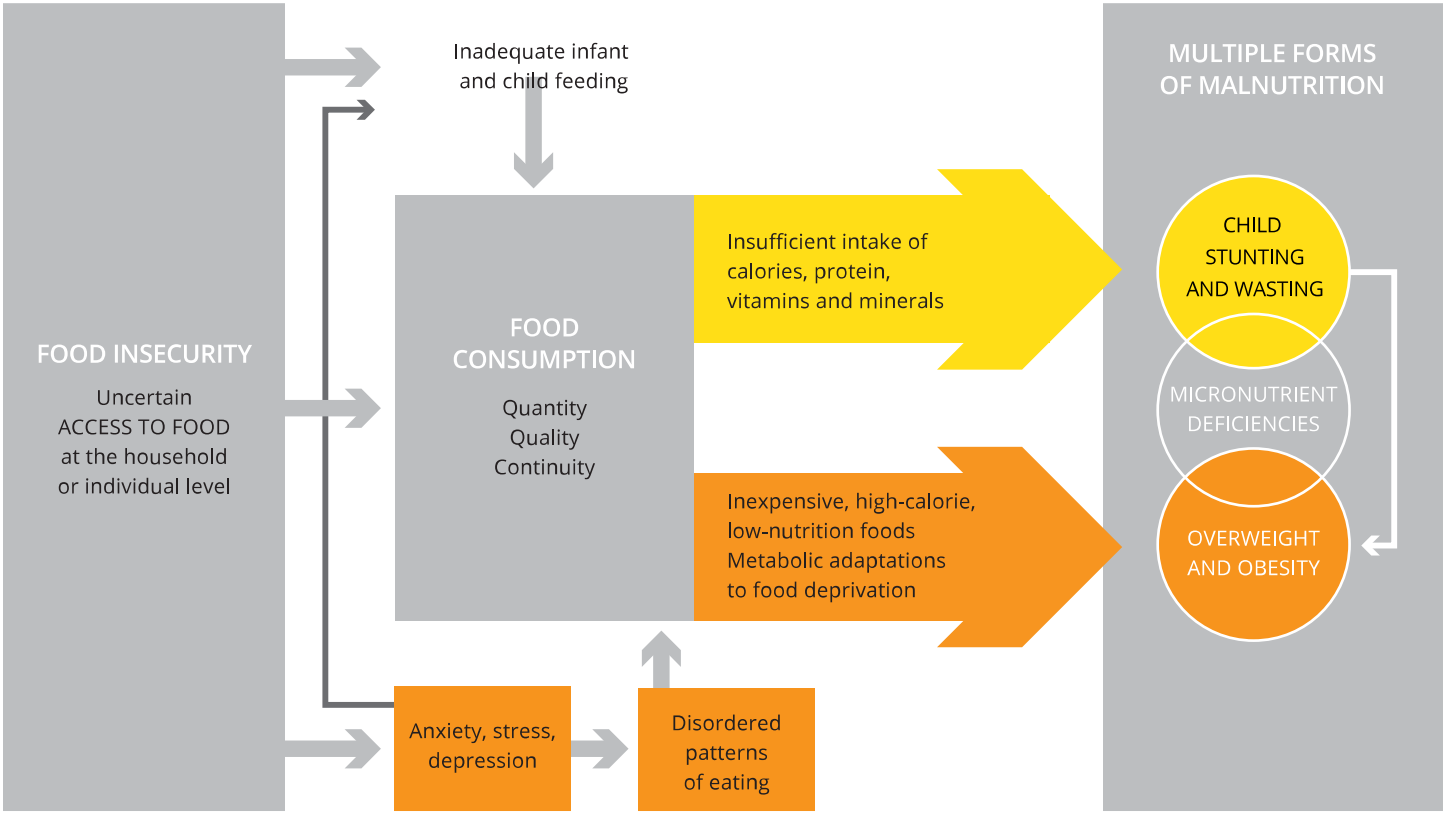

Figure 1. Reprinted from FAO's (2018, para. 15) "State of Food Security and Nutrition Around the World" website, available at http://www.fao.org/state-of-food-security-nutrition/en/.

5) Think critically about the components in Figure 1. Multiple descriptions exist for each food insecurity and food consumption element (see left and center-left side of Figure 1). However, using context clues from Figure 1 and FAO's (2018) "State of Food Security and Nutrition Around the World" as resources, write your personal definitions of the basic elements of food insecurity and food consumption. (The full report can be downloaded from http://www.fao.org/state-of-food-security-nutrition/en/; pages 26 through 35 may be particularly helpful.)

   a. Access to food: Not having regular access to nutritious food.

   b. Quantity of food consumption: An individual not taking in enough calories, proteins, vitamins, or minerals.

c. Quality of food consumption: An individual not taking in healthful foods that are low in cost and high in calories.

d. Continuity of food consumption: Consistent lacking of quality foods over time.

6) How can unbalanced food consumption (quantity, quality or continuity) influence intake of calories, protein, vitamins and minerals?
   - What would happen if the elements of food consumption (quantity, quality or continuity) are too low?
   - What would happen if these elements were too high?

   Too low: child stunting and wasting, micronutrient deficiencies.
   Too high: overweight and obesity

7) Define malnutrition. What are some possible causes of malnutrition? What are some possible consequences of malnutrition?
   Malnutrition is having a lack in proper nutrition, does not have enough healthy food options, or does not know how to use the food they have. Wasting and stunting can be caused by malnutrition.

8) Describe (in detail) three concerns you have as a young agriculturist, scientist, natural resource advocate, etc. regarding food insecurity and food consumption across the globe. (Use the "State of Food Security and Nutrition Around the World" website, http://www.fao.org/state-of-food-security-nutrition/en/, as a reference):
   Answers will vary.

a. Why are these concerns? What can be done to address these concerns?
   Answers will vary.

b. What efforts (if any) currently exist to help address these needs?
   Answers will vary.

Aligned to the following standards:
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KEY — Feeding the World Nationally

DIRECTIONS:

Hunger is not just a global problem. It is a national problem. Food insecurity is more prevalent in the United States than it has been in previous years.

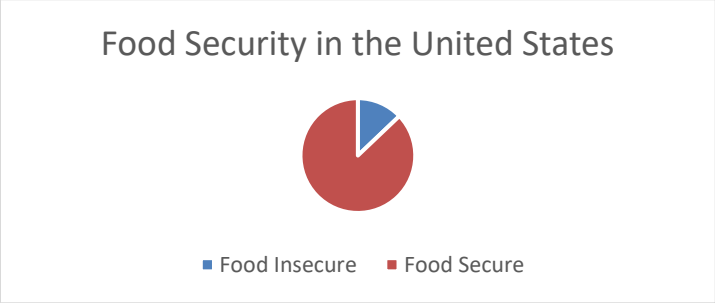
Complete the following:

- Visit the Feeding America (2018) "Hunger in America" website, available at https://www.feedingamerica.org/hunger-in-america?s_src=WXXX1MTMG&_ga=2.142209842.185763605.1546865895-1598350509.1546577041.
- Visit Feeding America's (2018) "Food Insecurity in The United States" website (http://map.feedingamerica.org).
    - Answer trends in the full country before clicking on an individual state. Scroll to the middle of the website's homepage to find the most recent national statistics within the United States.
- Review the statistics for food insecurity in the United States and complete the following questions.

9. How many food insecure people are in the United States? 41,204,000 people

10. What is the food insecurity rate in the United States? 12.9%

    Draw a pie chart to illustrate this percentage of food insecurity in the United States.



11. What are the estimated percentages of program eligibility among food insecure people in the United States?

27%	% Above Other Nutrition Programs—Threshold of 185% Poverty
20%	% Between 130% and 185% Poverty
53%	% Below SNAP Threshold—130% Poverty

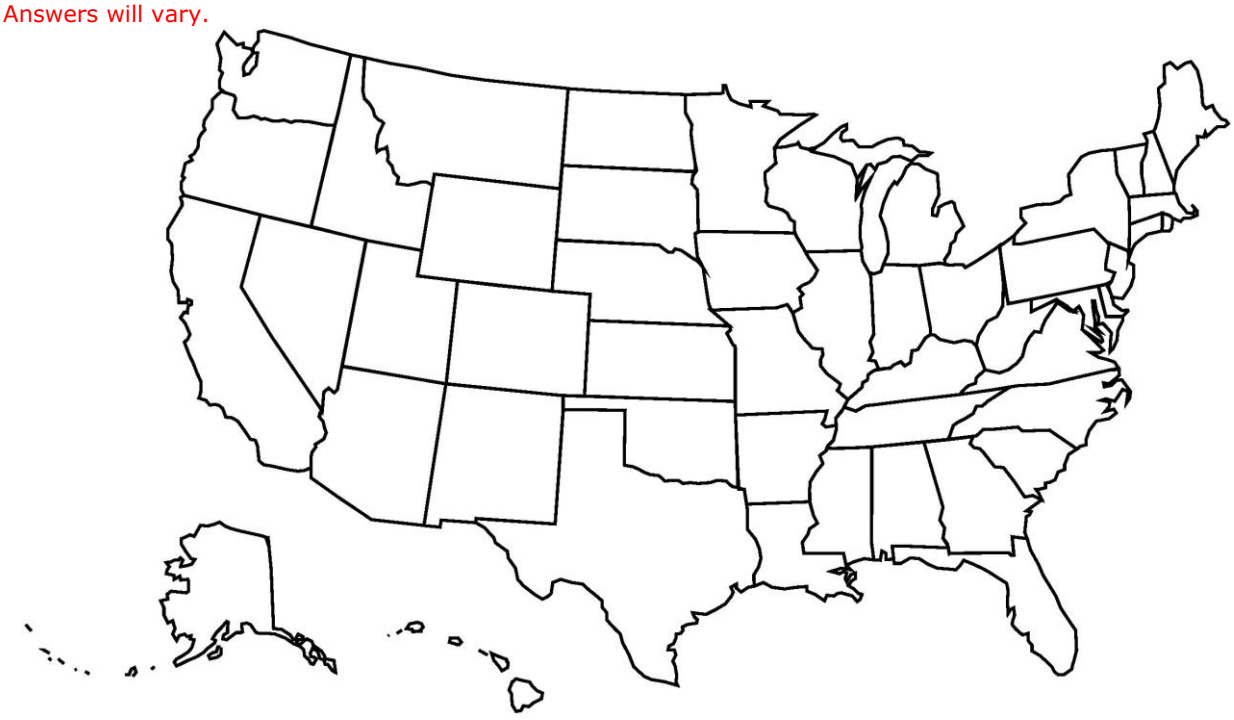
12. What is the average meal cost? $3.00/meal

13. What is the annual food budget shortfall? $21,122,544,000

14. Of these statistics, what is the most surprising or alarming to you? Why? Answers will vary.

NAME: _____

15. Using Feeding America's (2018) "Food Insecurity in The United States" website (http://map.feedingamerica.org), select a state to investigate trends and statistics for food insecurity. Highlight and label the selected state. Answers will vary.



Name of selected state: _____

16. When you click on a selected state, each state should have a statistical printout that looks similar to this:

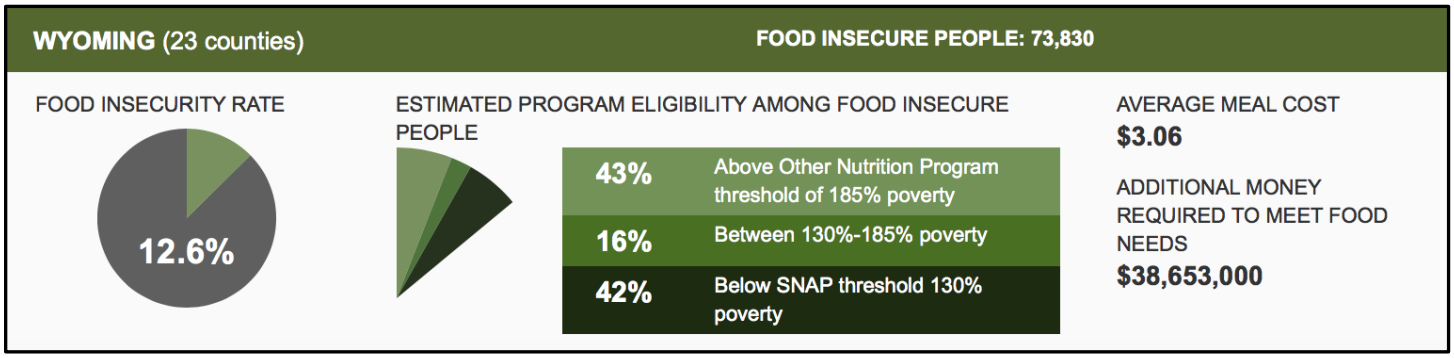


Figure 2. Example state printout. Answers will vary.

Using your selected state, complete the following information:

5. Number of food insecure people: _____.
6. Food insecurity rate: _____.
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8. What is the average meal cost? _____

Additional money required to meet food needs: _____

NAME: ________________________

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