



STUDENT HANDOUTS



Food Up!
An Urban Agriculture Curriculum

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WINNING US OVER: FOOD MARKETING AND FOOD CHOICE



Module 1 Student Handouts

Instructions: It is easiest to print this document **double-sided**. Print 1 copy for every 2 students in your class. Individually cut out the Brand Recognition Images from pages 2-5 into card decks. Each student group should get 1 deck (including images A-T).





ACTIVITY #1: BRAND RECOGNITION IMAGE CARDS



Logos A-H

A



B



C



D



E



F



G



H





J



K



L



M



N



O



P



Q



R

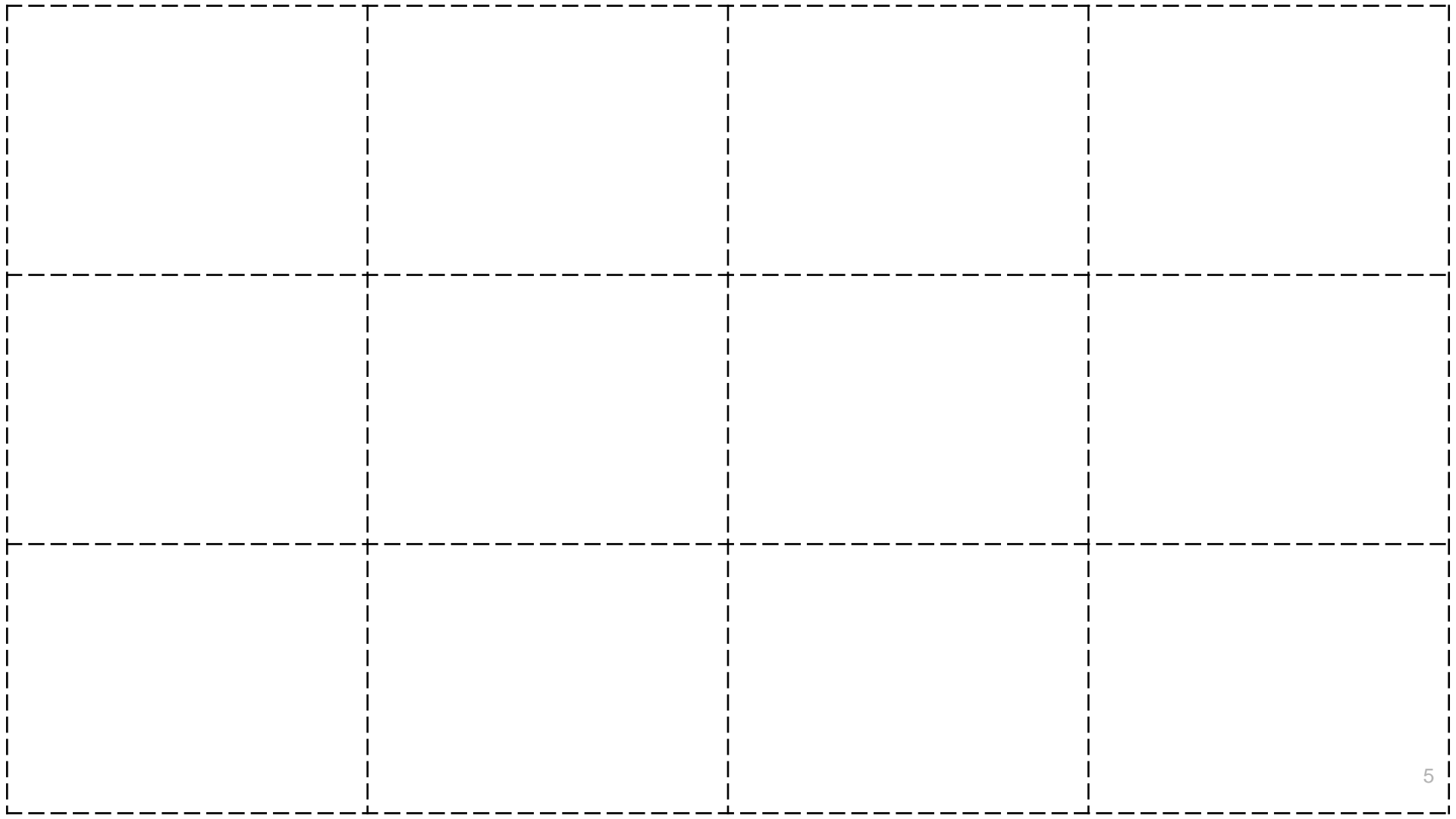


S



T



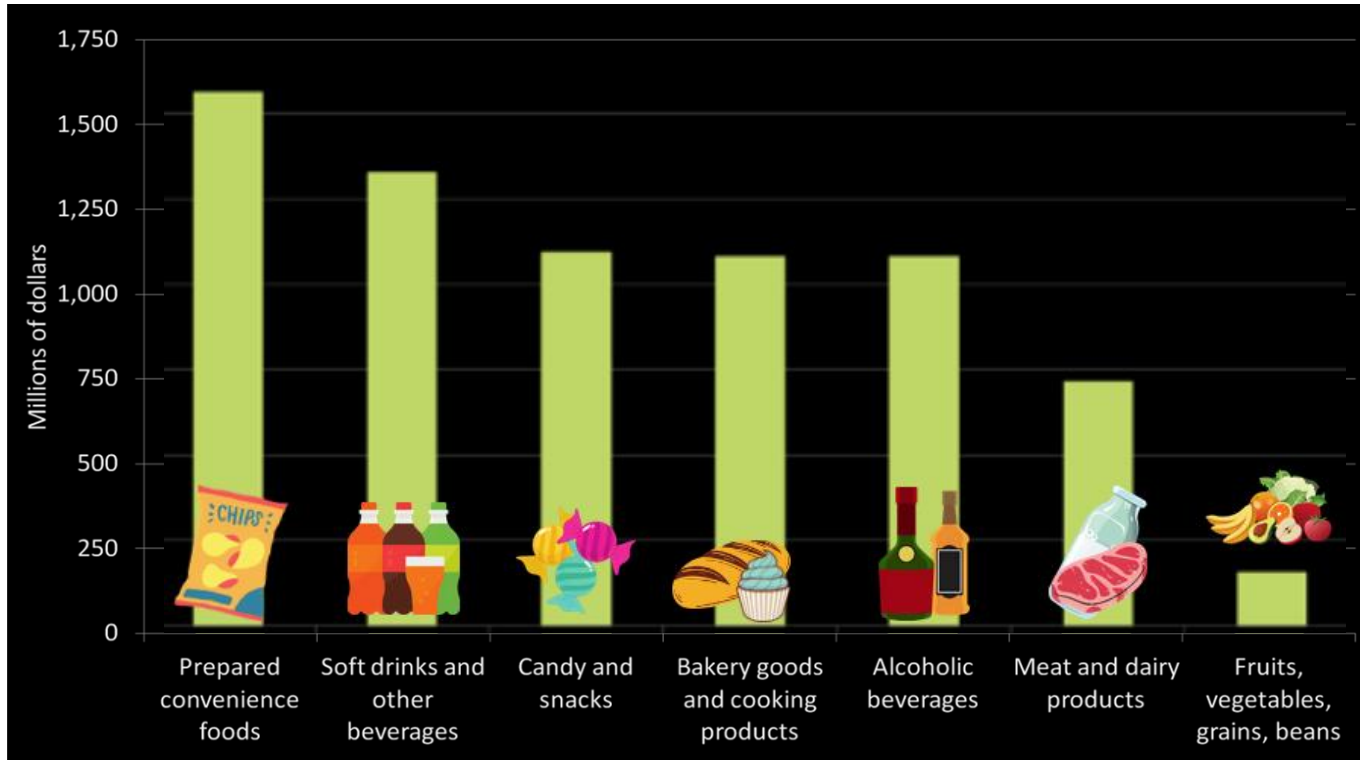


ACTIVITY #2: INVESTIGATING THE AD DOLLAR

View the following graphics as you work through this activity.

1. US Food Advertising Spending
2. Fast Food Advertising Graphic
3. Hours of Fast-Food Ads Per Year Watched by Children

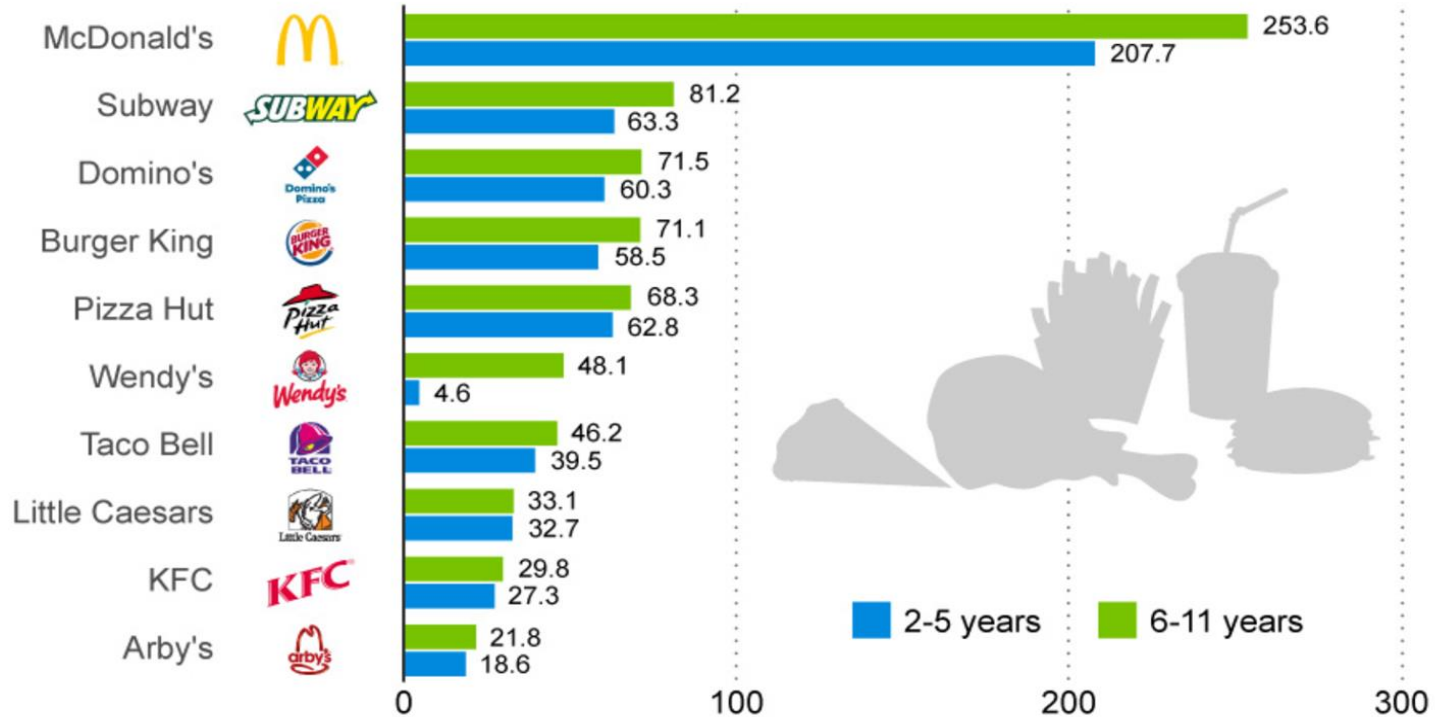
US FOOD ADVERTISING SPENDING



Annual spending by U.S. food and beverage manufacturers on advertising in 1997 (the last year industry-wide data were openly available); Source: Gallo A. Food Advertising in the United States. In: America's Eating Habits Changes and Consequences. USDA Economic Research Service; 1999:173-180. Image Adapted from Foodspan.

U.S. Kids Watch Hundreds of Fast Food Ads Per Year

Fast food brands most advertised to U.S. children aged 2-11 (average # of ads viewed in 2012)



Source: Nielsen, Yale Rudd Center for Food Policy, as shown in *The Media Does Not Have My Mind* by Soul Fire Farm

ACTIVITY #3: STRATEGY SLEUTHS

Discussion Questions:

- Who is this ad intended for?
- What strategies are the advertisers using to appeal to their audience?
- How effective do you think the ad is in selling the product?

OUR FOOD SYSTEM: FROM FARM TO TABLE



Module 2 Student Handouts

Instructions: It is easiest to print this document **double-sided, on the short-edge**. Print 1 copy for every 3 students in your class. Individually cut out the Fair Share cards from pages 2-5 into card decks.





ACTIVITY #1: FAIR SHARE CARD SORT: FRONT (ONE DECK PER 3 STUDENTS)

Bacon



Steak



Bread



Carrots



Cereal



Tomatoes



Eggs



Organic Stone Ground
Flour



Ham



Lettuce



Milk



Bagel



Potatoes



Soda



ACTIVITY #1: FAIR SHARE CARD SORT: BACK



Retail
Percent of Retail for
Farmer
Farm Share

Retail
Percent of Retail for
Farmer
Farm Share



ACTIVITY #2: FOOD CHAIN INFOGRAPHIC

The Food Production Chain

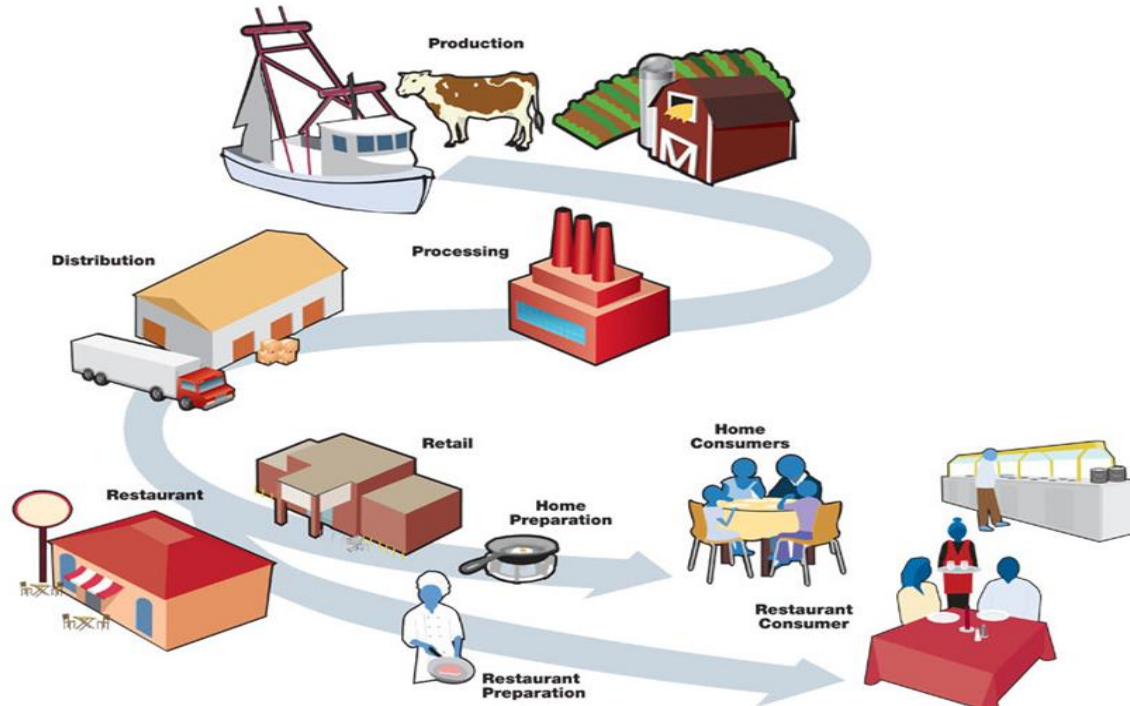


Image Source: Centers for Disease Control and Prevention, 2013 (https://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/figure_food_production.html).

ACTIVITY #3: THE JOURNEY – CHEESE



ACTIVITY #3: THE JOURNEY – CHEESE

<p>Cheese is graded by the USDA.</p>	<p>Cheese is retailed in the grocery store.</p>	<p>Macaroni and cheese is enjoyed on your dinner table.</p>	<p>Manure is spread on fields.</p>
<p>Milk is pasteurized to kill bacteria</p>	<p>Milk truck comes to transport milk to the cheese plant</p>	<p>Cultures are added to the milk, and whey is squeezed out of the milk</p>	<p>Cheese is packed in wax or plastic.</p>
<p>Corn and soy are harvested from the field for feed.</p>	<p>Calves are born. Cows do not produce milk until a baby calf is born.</p>	<p>Cows are milked.</p>	<p>Milking equipment, including pumps and tanks, are manufactured.</p>

ACTIVITY #3: THE JOURNEY – SODA



ACTIVITY #3: THE JOURNEY – SODA (BACK)

Soda cans are made from recycled aluminum	Corn, cane, or beets are planted	Corn, cane, or beets are harvested	Corn, cane, or beets are washed, packed, and transported to syrup factory
Sugar syrup is manufactured	Flavor development and testing is done in the lab	Water is filtered	Water and syrup are combined and sent through a carbonator
Soda is canned or bottled	Marketers design labels, magazine ads, and television ads	Soda is distributed to grocery stores, restaurants, event venues, and vending machines	Glass bottles or cans are recycled or sent to the landfill

ACTIVITY #3: THE JOURNEY – CARROTS



ACTIVITY #3: THE JOURNEY – CARROTS (BACK)

Carrots are bred for seeds that have good harvests, are resistant to disease, and have great flavor.

Potash is mined to make potassium rich fertilizer.

Tractor plants carrot seeds in rows.

Carrots are sold at the farmers market.

Carrots are harvested by a tractor or by hand.

Carrots are washed and graded.

Carrots are transported from the farm to their destination.

Plastic bags are manufactured for frozen carrot packaging.

Carrots are chopped and flash frozen in a factory.

Carrots are canned in a factory.

Carrots are shipped to a distributor.

Grocery stores order carrots from distributor.

ACTIVITY #4: FOOD DOLLAR INFOGRAPHIC

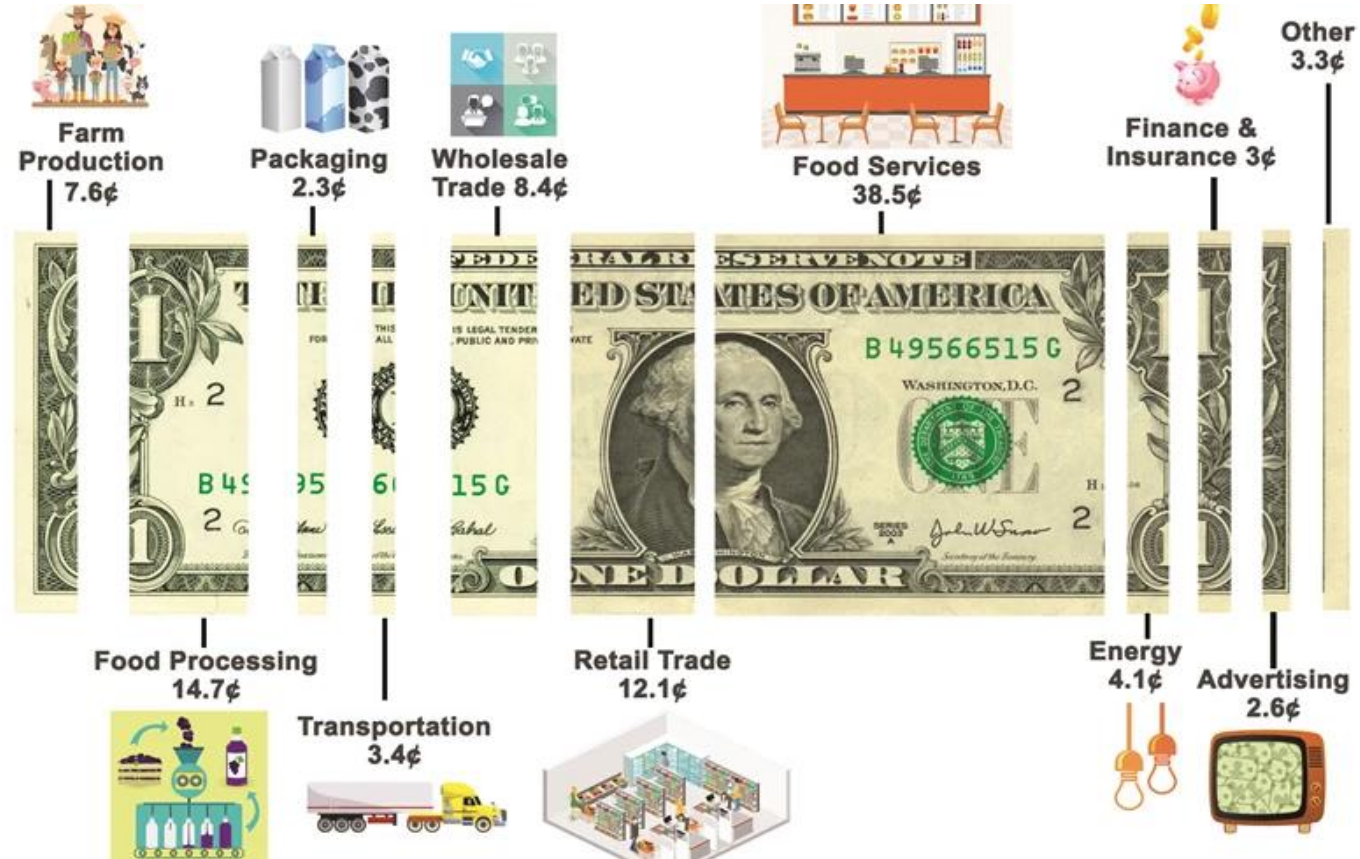
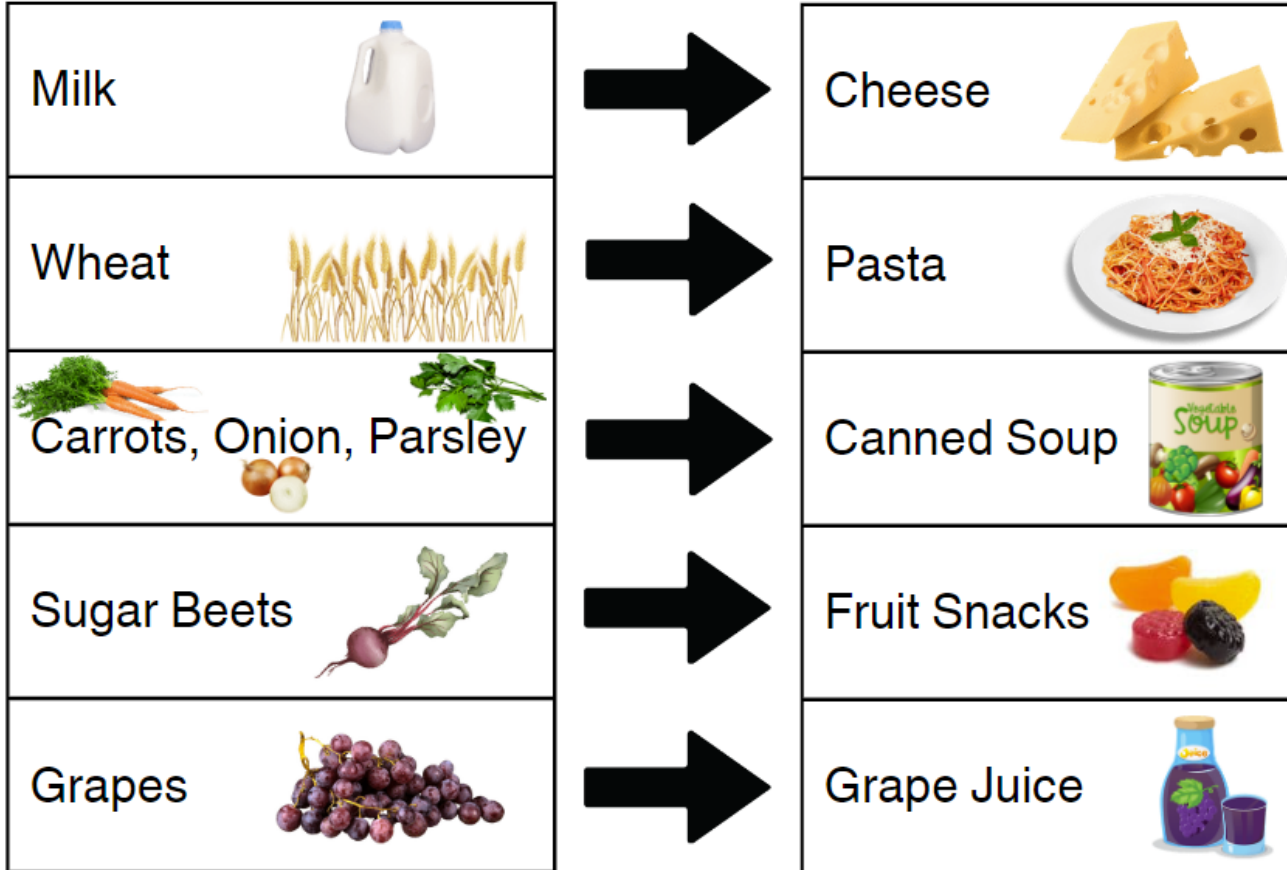


Image illustrates how much of the average dollar spent on food in the United States goes to each part of the food supply chain. Notice that farmers and ranchers only get 7.6 cents of the average food dollar. Source: US Department of Agriculture 2019

ACTIVITY #4: VALUE ADDED PRODUCT EXAMPLES



ACTIVITY #5: THE FOOD WEB CARDS #1



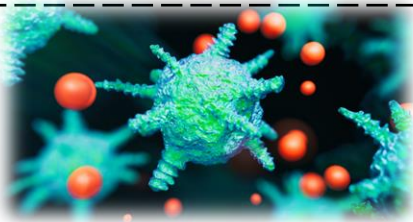
Cow



Climate



Compost



Pathogen



Chicken



Soil



Fish



Crop



Water

ACTIVITY #5: THE FOOD WEB CARDS (BACK)

Compost

Needs: Air, plant material for decomposing

Provides: Soil and plant nutrition

Climate

(Weather patterns over long period of time)

Needs: Sunlight, water, limited greenhouse gas pollution

Provides: Rain and temperatures necessary for crops. Crops provide food for humans and animals.

Cow

Needs: Food, water, humane living conditions

Provides: Dairy, meat, manure as plant fertilizer

Soil

Needs: Nutrition, microorganisms, plant roots to prevent erosion

Provides: Access to nutrition for plants

Chicken

Needs: Food, water, humane living conditions

Provides: Eggs, meat, manure as plant fertilizer

Pathogen

Needs: Often need water, heat, and food

Provides: Causes disease in humans, plants, and animals

Fish

Need: Safe water environment

Provide: Food for humans, Support of marine environments

Crop

Needs: Sunlight, carbon dioxide, water, soil, nutrients

Provides: Food, Soil nutrition, oxygen

Water

Needs: Safety from pollution from animal waste and fertilizers

Provides: Hydration for animals and plants, environment for marine life. Helps to stabilize temperatures in ecosystems.

ACTIVITY #5: THE FOOD WEB CARDS (#2)



ACTIVITY #5: THE FOOD WEB CARDS (BACK)

<p>Supermarket Needs: Customer base, building, energy, workers</p> <p>Provides: Market for farms and other food industries, access to healthy food</p>	<p>Government Needs: Citizen engagement, money</p> <p>Provides: Food safety regulations, money for farms during hard times, food security assistance</p>	<p>Food Citizen Needs: Access to healthy food</p> <p>Provides: Advocacy for healthy food, money for food</p>
<p>Truck Driver Needs: Fuel, truck, well maintained roads, wages</p> <p>Provides: Access to a variety of foods year round from many locations</p>	<p>Food Service Worker Needs: Safe working conditions, good wages</p> <p>Provides: Easy access to food for customers</p>	<p>Corner Store Needs: Customer base, money, building, energy, workers</p> <p>Provides: Often convenient access to food</p>
<p>Pesticide Needs: Manufacturer, equipment to apply the pesticide</p> <p>Provides: Protection to plants from harmful weeds of insects. Also often causes pollution to the air, soil, and waterways</p>	<p>Chemical Fertilizer Needs: Manufacturer, equipment for application, raw materials</p> <p>Provides: Nutrition for soil and plants, can contaminate waterways</p>	<p>Farm Worker Needs: Safe work environment, fair wages</p> <p>Provides: Labor to grow food for people and agricultural animals</p>

HOW TO FEED A PLANT: WHAT A PLANT NEEDS TO GROW



Module 3 Student Handouts

Instructions: It is easiest to print this document **double-sided, on short-edge**. Print 1 copy for every 2 students in your class.





ACTIVITY #1: PLANT ELEMENTS

NUTRIENTS & SOIL



WATER



SUNLIGHT

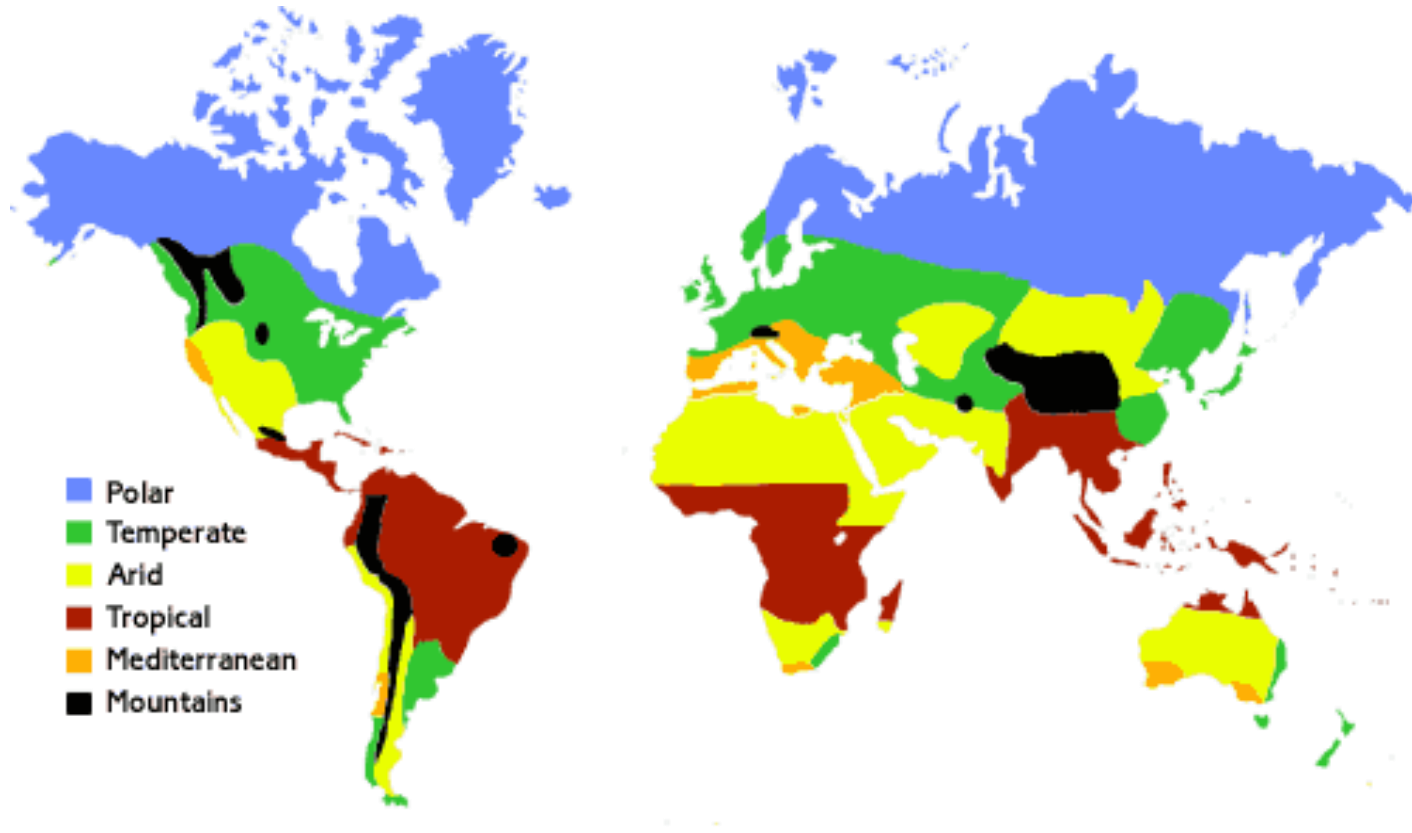




























AIR





ACTIVITY #1: CLIMATE MAP



Polar	Summer	Winter	Summer	Winter
<p>Polar climates are found near the North and South Poles. They also occur on high mountains at lower latitudes. The summers are very cool, and the winters are frigid. Precipitation is very low because it's so cold.</p>				
<p>Temperate</p>				
<p>Temperate climates have moderate temperatures. They vary in how much rain they get and when the rain falls. Rainfall can be sporadic.</p>				
<p>Arid</p>				
<p>Arid climates are dry and receive very little rainfall. They also have high rates of evaporation. This makes them even drier. Most, but not all, arid climates are near the Equator and have hot weather.</p>				
<p>Tropical</p>				
<p>Tropical climates are found around the equator. As you'd expect, these climates have warm temperatures year round. Tropical wet climates occur at or very near the equator. They have high rainfall year round. Tropical rainforests grow in this type of climate.</p>				
<p>Mediterranean</p>				
<p>Mediterranean climates are found on the western coasts of continents (ex: California). Temps are mild and rainfall is moderate. Most of the rain falls in the winter, and summers are dry. To make it through the dry summers, short woody plants are common.</p>				
<p>KEY:</p>				
<p>Frigid</p>	<p>Temperature</p>	<p>Hot</p>	<p>Heavy</p>	<p>Rainfall</p>
				
				<p>Dry</p>

ACTIVITY #1: CLIMATE PLANT CARDS: FRONT



ACTIVITY #1: PLANT CLIMATE CARDS: BACK

Corn

Corn needs well distributed rainfall in sunny, moderately warm weather. It takes from 60 to 100 days to grow from seed to harvest.

Wheat

Wheat needs moderately warm weather with rain from time to time. It takes about 4 months to grow from seed to harvest.

Pineapple

Pineapple plants live for 2-3 years, but die if temperatures dip below 28degrees Fahrenheit. They require lots of water, humidity, and heat.

Bananas

Bananas grow on trees that live for about six years. They require consistent heat and heavy rainfall.

Watermelon

Watermelon can withstand long droughts and extreme heat.

Dates

Dates can withstand long droughts and extreme heat.

Kale

Kale requires low to moderate rains and is frost tolerant.

Highbush Cranberries

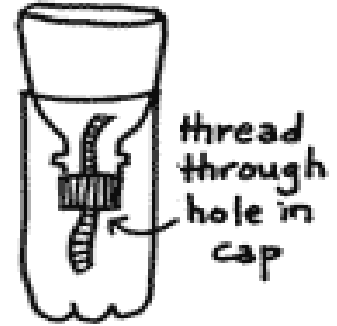
Highbush cranberries are sweetest picked right after a frost.

Grapes

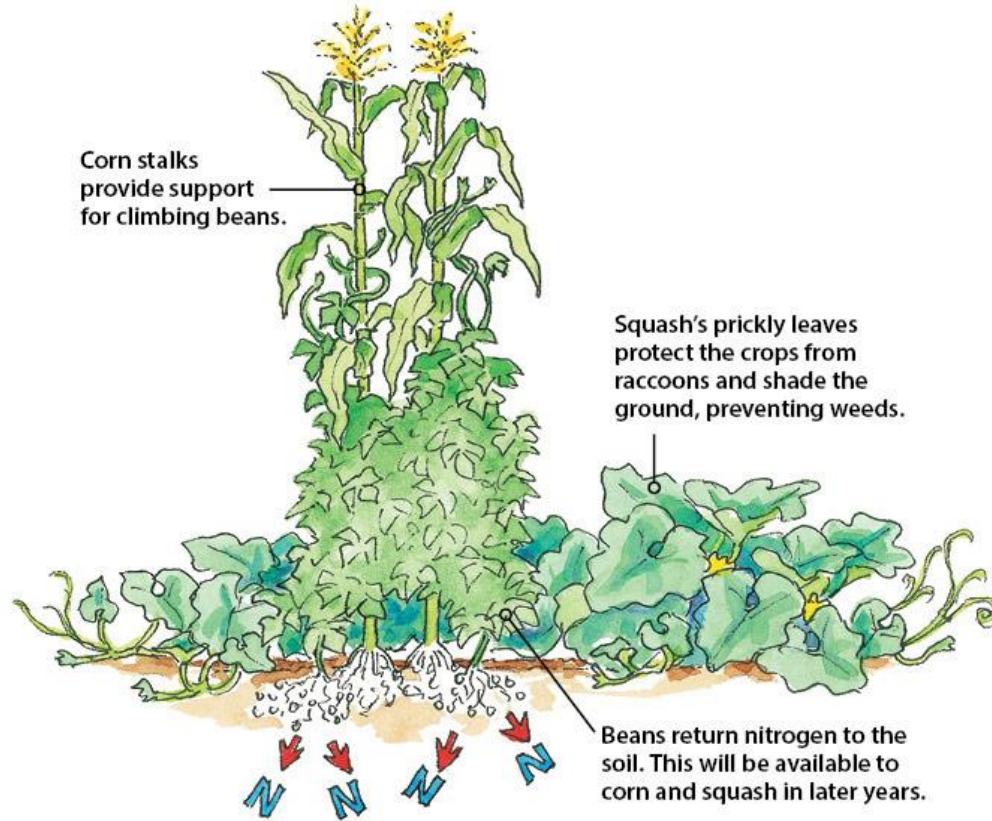
Grape vines have woody stems to help them survive a season of drought, but require moderate rainfall and heat during the summer when grapes are fruiting.

ACTIVITY #2: HYDROPONIC GROWING

1. Remove the label from the bottle
2. Cut around the circumference of the bottle at the mark
3. Saturate the wick by dipping it in the water bowl
4. Thread the wick through the cap (about halfway)
5. Fill the bottom of the bottle with about 2" of water.
6. Flip the top of the bottle over and rest it inside of the bottom part of the bottle.
7. Hold the cotton strip straight up while scooping potting soil into the top of the bottle (this ensures that the water will wick from the bottom of the bottle into the soil at the top)
8. Plant the plant in the soil so that the root is completely covered in soil.
9. Lightly water the plant



ACTIVITY #4: THREE SISTERS GRAPHIC



ACTIVITY #4: LEGEND OF THE THREE SISTERS 1

There once was a family of a mother, father and three sisters. The parents worked hard at providing for the family, but constantly had to beg the daughters for help. They also had to continually stop them from arguing and fighting. The three sisters were different from each others and also unique in their own way. The eldest was tall and slender with long, silky, shiny hair, the youngest was small but muscular and attractive, and the middle sister was average in height and looks but was beautiful in her giving nature. For whatever reason, although they loved one another as sisters, they would disagree on any little thing and be distracted from doing any work because of these quarrels. The parents tried and tried to get the sisters to help in the garden and help with the chores. When working together they would always fight and when they were apart they would complain about the eachother. The work wasn't getting done and the parents were worried that if it kept up, they wouldn't make it through another winter. When it came planting, work had to be done, but the sisters continued to fight instead work. The parents needed help, and it was given to them, but not as they imagined. As the sisters argued in the field, they were transformed into three plants. The first a long, tall plant with silk tassel-like hair, the second a broad-leafed plant low to the ground, and the third a medium-height plant with gentle vines. The plants—or the three sisters—were corn, squash, and beans.

ACTIVITY #4: LEGEND OF THE THREE SISTERS 2

This is the Iroquois Legend of the Three Sisters. It was said that the Earth began when “Sky Woman,” who lived in the upper world, peered through a hole in the sky and fell through to an endless sea. The animals saw her coming, so they took the soil from the bottom of the sea and spread it onto the back of a giant turtle to provide a safe place for her to land. This “Turtle Island” is now what we call North America.

Sky woman had become pregnant before she fell. When she landed, she gave birth to a daughter. When the daughter grew into a young woman, she also became pregnant. She died while giving birth to twin boys. Sky Woman buried her daughter in the “new Earth.” From her grave grew three sacred plants—corn, beans, and squash. These plants provided food for her sons, and later, for all of humanity. These special gifts ensured the survival of the Iroquois people.

FOOD DESERT TO FOOD OASIS: FOOD SECURITY AND URBAN FARMING



Module 4 Student Handouts

Instructions: It is easiest to print this document **double-sided**. Print 1 copy for every 2 students in your class.



ACTIVITY #2

HEALTHY EATING PLATE

Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.



The more veggies – and the greater the variety – the better. Potatoes and French fries don't count.

Eat plenty of fruits of all colors.



STAY ACTIVE!

© Harvard University



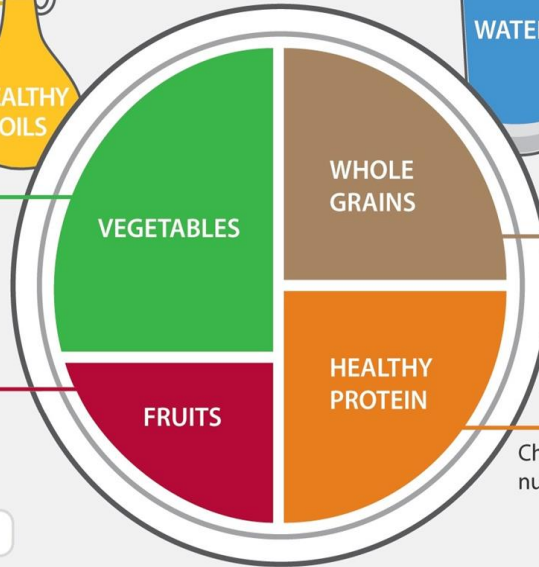
Harvard T.H. Chan School of Public Health
The Nutrition Source
www.hsph.harvard.edu/nutritionsource



Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.



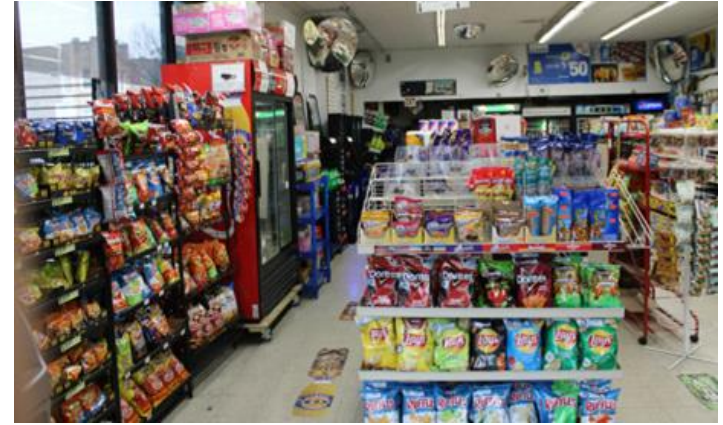
Harvard Medical School
Harvard Health Publications
www.health.harvard.edu



ACTIVITY #2

JADYN

Jadyn passes by a convenience store on her way to and from school. She goes with her friends to the convenience store a couple times a week to get a snack before yearbook club. A small farmer's market is hosted in her neighborhood on Wednesdays from 2-5 pm during the summer and fall. The nearest grocery store is 1.5 miles away. Her family does not own a car, but Jadyn has a free student bus pass. Jaden's mom grows a container garden on their apartment's porch every year. Jaden's family receives SNAP (formerly known as food stamp) benefits. Jadyn's school has a backpack food program, and Jadyn is able to take a pre-packed backpack full of healthy food home for free once every two weeks. Jadyn's mom works two jobs, and Jadyn is very involved with extra curriculars at school, so their time available to cook is limited.



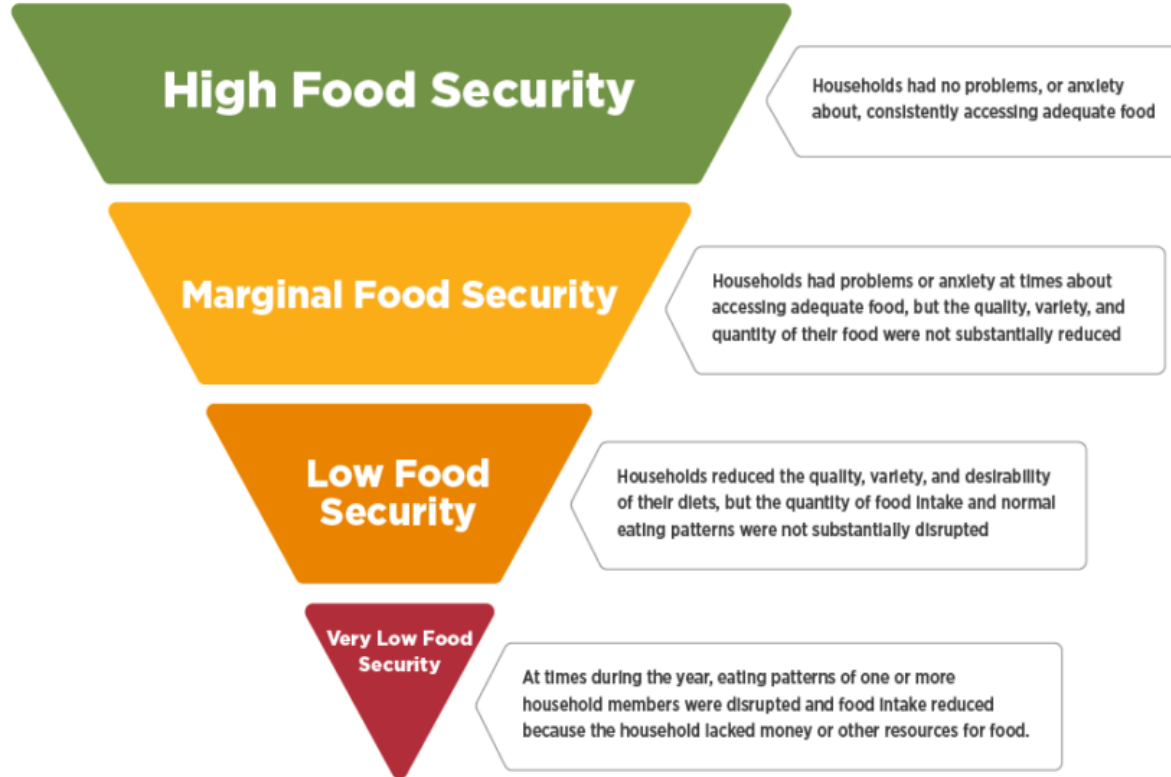
ACTIVITY #2

AMARI

Amari lives in the suburbs, so his nearest grocery store is 3 miles away. His access to public transportation is very limited. Amari, his mom, and his dad all have their own cars. Amari helps his dad grow a garden every year in their backyard. Amari's family is in the middle class, so they are able to afford most fresh produce and healthy food at the grocery store when they'd like it. Amari grew up with a family friend who regularly taught him to cook healthy food. Amari gets together with his neighbors once per month for a potluck.



ACTIVITY #2: FOOD SECURITY PYRAMID



Source: Adapted from the USDA Economic Research Service.

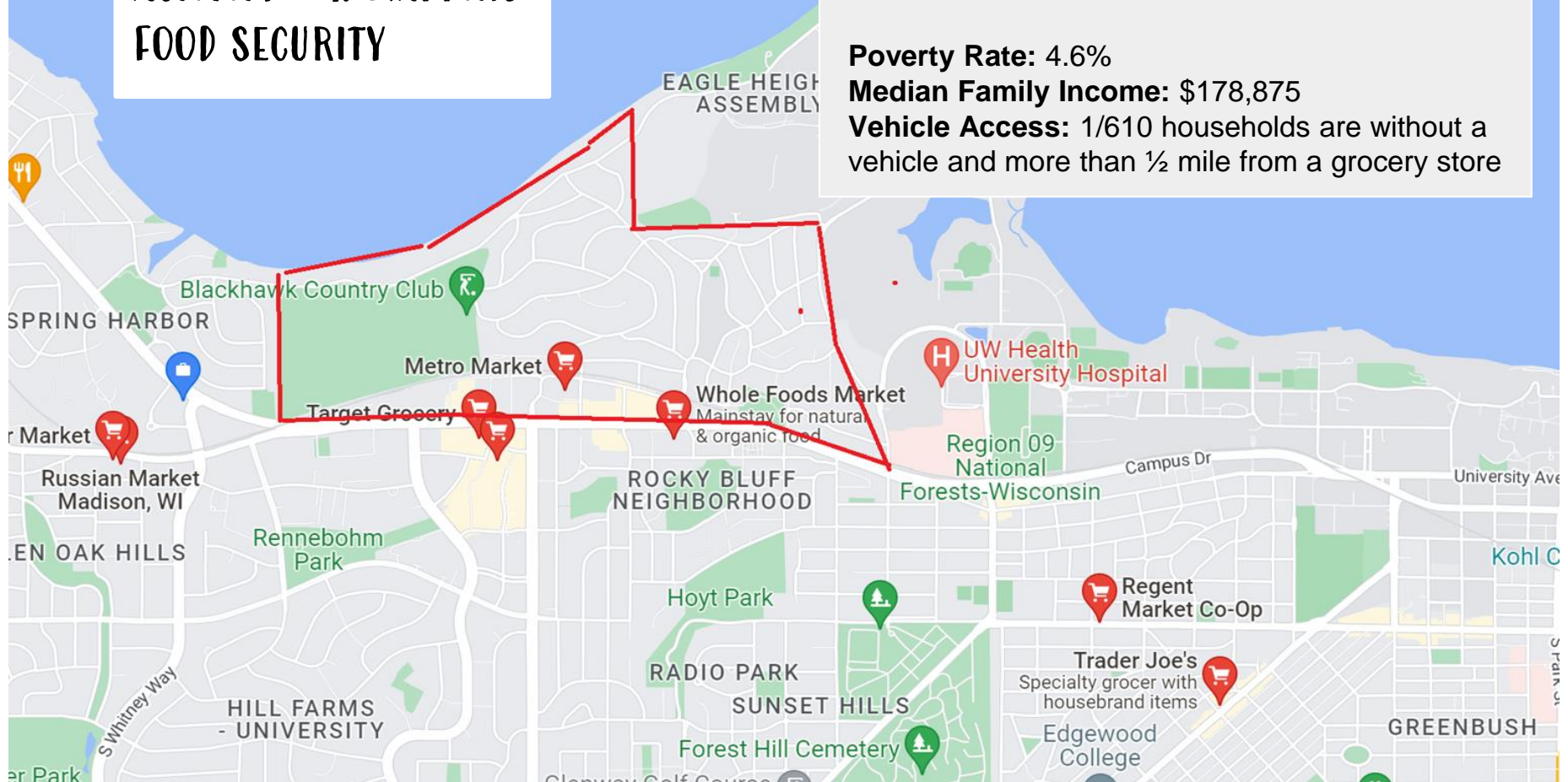
ACTIVITY #4: MAPPING FOOD SECURITY

Shorewood Hills, Madison, Wisconsin

Poverty Rate: 4.6%

Median Family Income: \$178,875

Vehicle Access: 1/610 households are without a vehicle and more than ½ mile from a grocery store



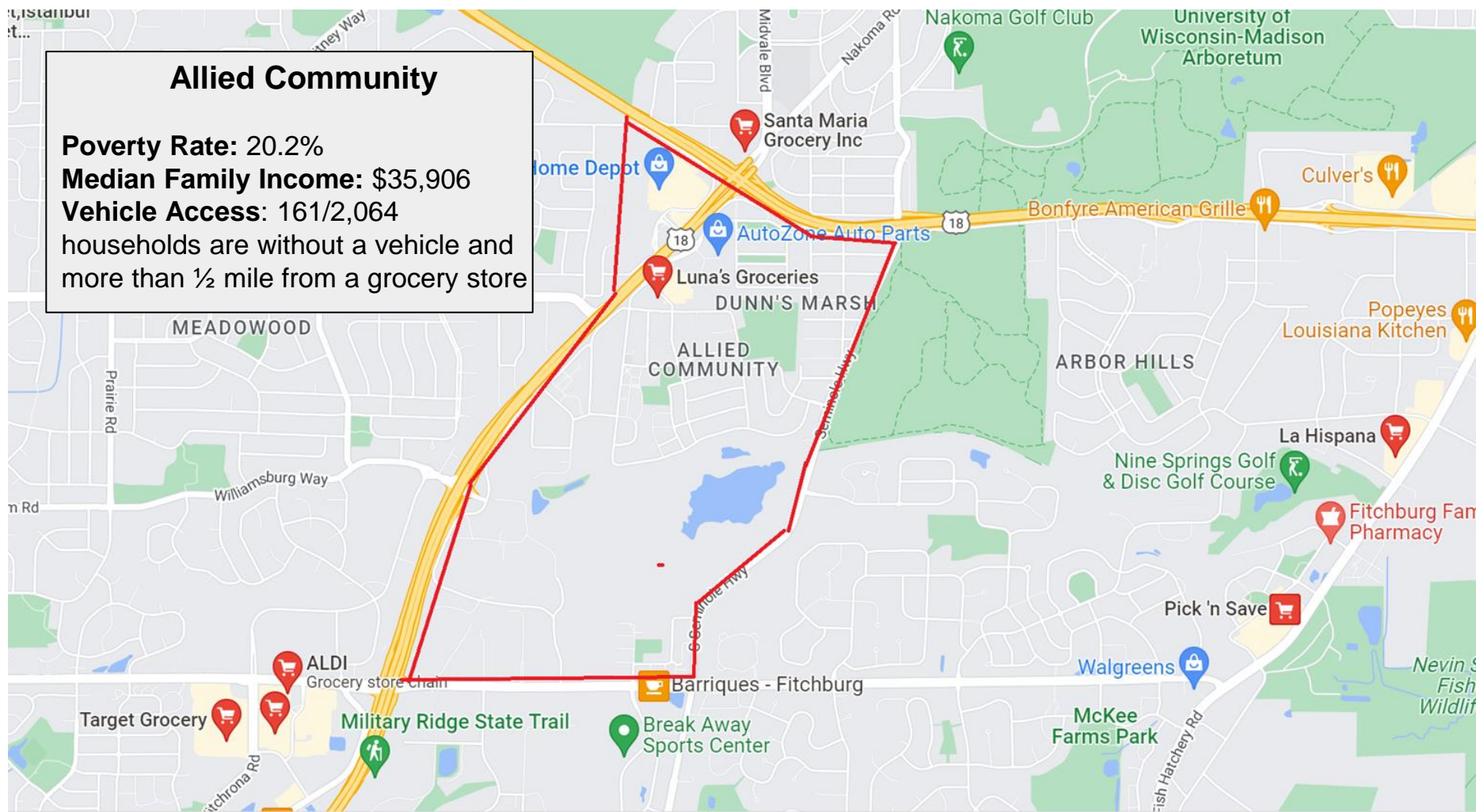
Allied Community

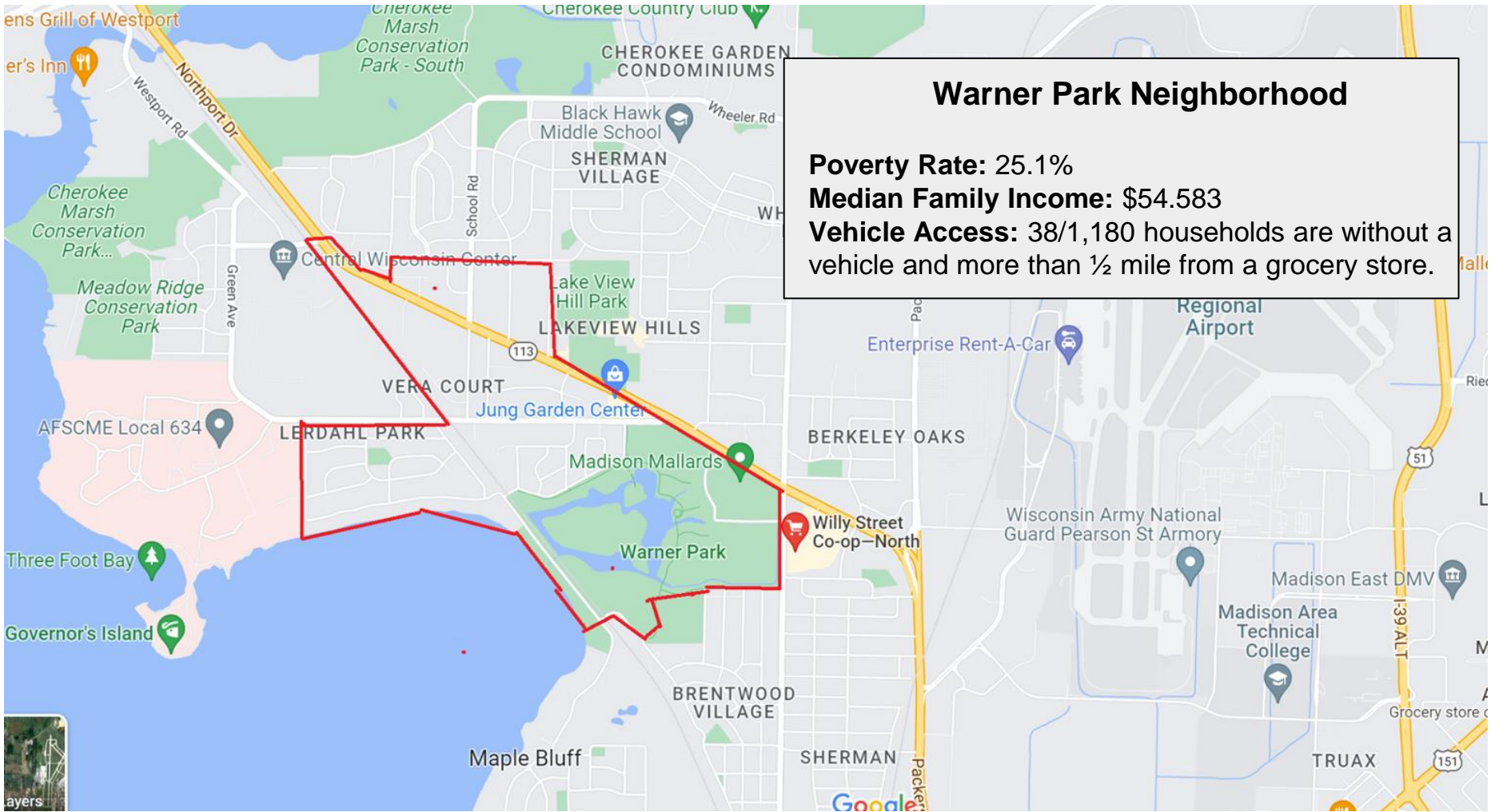
Poverty Rate: 20.2%

Median Family Income: \$35,906

Vehicle Access: 161/2,064

households are without a vehicle and more than ½ mile from a grocery store





Warner Park Neighborhood

Poverty Rate: 25.1%

Median Family Income: \$54,583

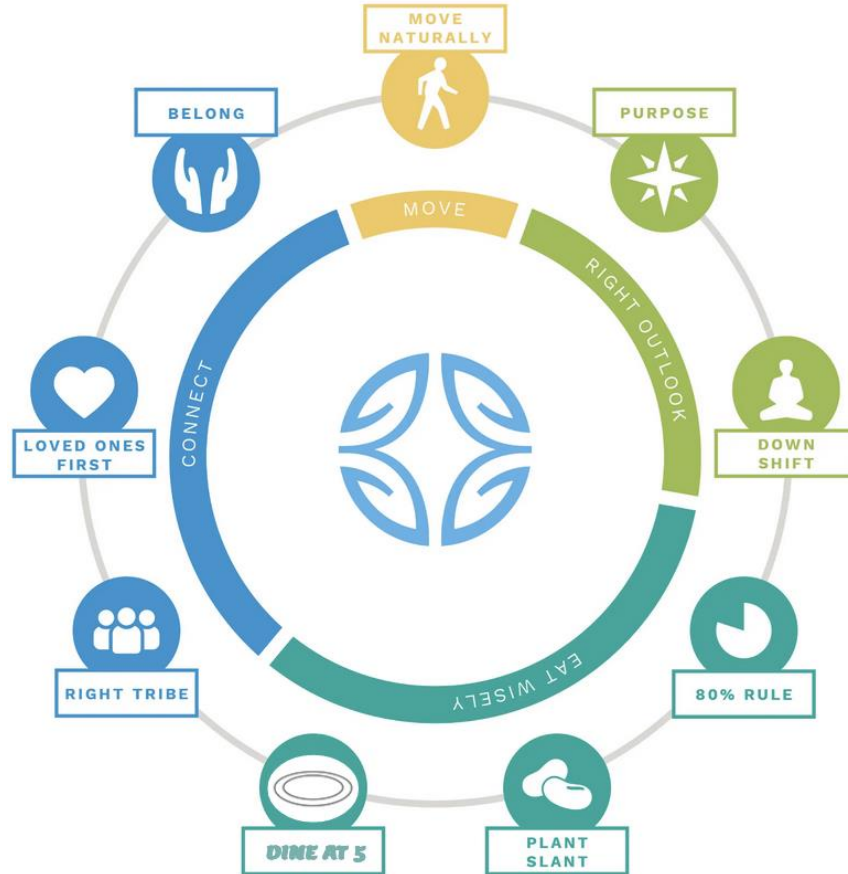
Vehicle Access: 38/1,180 households are without a vehicle and more than ½ mile from a grocery store.



ACTIVITY #3: FOOD MAP QUESTIONS

- *For each neighborhood, where do you think most residents get their food from? Do you think this differs among people who have access to a car and those who don't?*
- *In which neighborhood do you think residents eat the healthiest food? Why?*
- *In which neighborhood do you think you would have the hardest time finding good food at an affordable price? Why?*
- *What are ways we could improve food security, and hence healthy eating, in all neighborhoods?*

ACTIVITY #4: BLUE ZONES PRINCIPLES



Make it Last: Sustainable Agriculture and Agroecology



Module 5 Student Handouts

Instructions: It is easiest to print this document **double-sided, on the short-edge**. Print 1 copy for every 2 students in your class. Individually cut out the Brand Recognition Images from pages 2-5 into card decks. Each student group should get 1 deck (including images A-T).

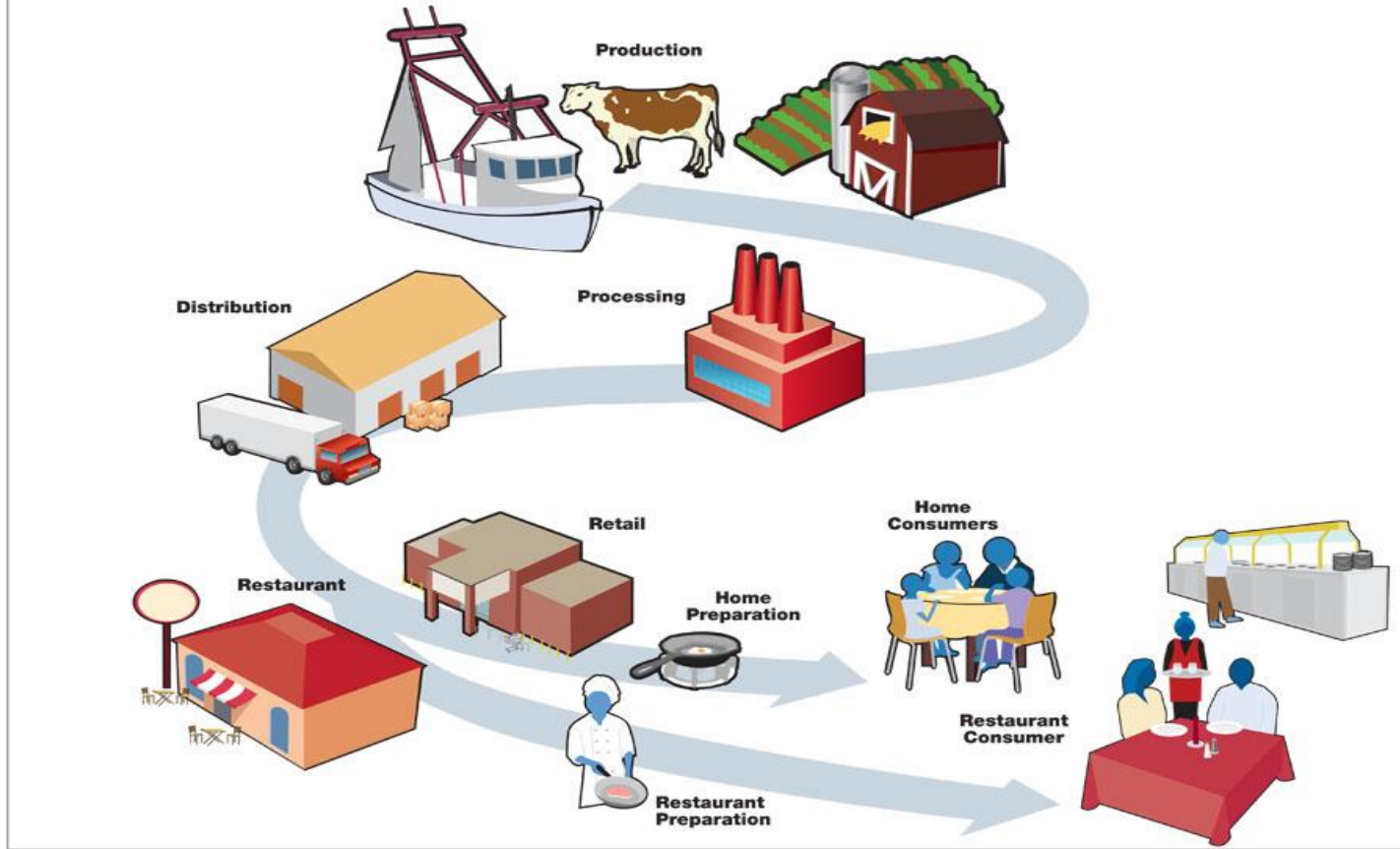




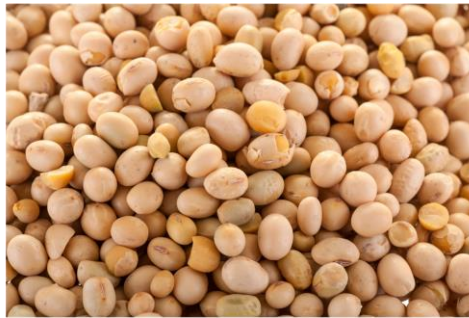


Maslow's Hierarchy of Needs

The Food Production Chain



✂ Sustainable? You Decide!



Sustainable? You Decide!

Tomatoes

When grown industrially, tomato production relies heavily on insecticides, herbicides, and fungicides, landing them on the Environmental Working Group's Dirty Dozen list, a list of produce typically grown with the most pesticides. (Prod/Env,Comm/-)

Soy Milk

The water footprint of soy milk is significantly less than cow milk. One glass of cow milk requires about 67 gallons water to produce, whereas one glass of soymilk requires about 18 gallons of water for production. (Prod/Env/+)

Tea

Using loose leaf tea, rather than tea packaged into tea bags, can reduce the carbon footprint of the tea by up to 90%.

(Cons / Env/ +)

Tomatoes

Migrant tomato workers are some of the poorest and most abused workers in the country. Not only are they regularly exposed to high amounts of pesticides, but as recently as 2008 were paid 40 cents per bucket of tomatoes, resulting in annual wages of about \$6500.² (prod/Env, Ec, Comm/-)

Soy

Much conventional (non-organic) soybean oil is extracted using hexane, a chemical that has been linked to negative neurological effects. This makes work dangerous for workers in the soy processing industry. (Proc/Comm/-)

Tea

Tea is used for gathering rituals around the world. It is used in many cultures on a daily basis for social purposes ranging from work breaks to spiritual rituals.

(Cons / Comm / +)

✂ Sustainable? You Decide!





Sustainable? You Decide!

Corn

The average Iowa cornfield produces enough calories to keep 14 people alive annually. However, most of our corn goes to ethanol and animal feed, so the same corn field ends up supporting the equivalent of only three people's dietary needs per year, mostly through corn syrup and animal products.⁴ (Proc, Env, -)

Corn

Much of the 5.6 million pounds of nitrogen fertilizer applied to corn annually ends up in our rivers and lakes, causing dead zones void of live fish and wildlife. The dead zone in the Gulf of Mexico is a prime example of the devastating effects of this pollution.⁴ (Prod / Env / -)

Apples

According to the Environmental Working Group, 90% of commercial apples have detectable rates of pesticide residue when they meet consumers. Apples are vulnerable to a variety of pests and diseases, creating a strong incentive for heavy pesticide use during production. (Prod / Env, Comm / -)

Corn

The industrialized world is set up to efficiently process corn into a variety of useful products, from animal feed and cornmeal to ethanol fuel and bioplastics. (Proc, Econ, Env, +, -)

Corn

Roughly 1.3 million acres of grassland and prairie were converted for corn use in the Western Corn Belt between 2006 and 2011, posing a threat to the waterways, pollinators, and biodiversity.⁴ (Prod / Env / -)

Apples

Apples are harvested in the fall and can be stored without processing for months, providing a local source of food in cold months when much less food can be grown locally. (Cons, Prod / Econ / +)

✂ Sustainable? You Decide!



Sustainable? You Decide!

Beef and Dairy

Much of the beef and dairy in the United States is raised in Confined Animal Feeding Operations without access to graze on outside grasses, leaving these operations to rely on corn being transported to feed the animals. This results in a much higher water and energy footprint than traditional grass grazed beef and dairy.

(Prod, Env, -)

Beef

Beef raised on pasture has a higher Omega 3 content, as well as higher levels of antioxidants, than conventionally raised beef.

Cheese

A 2,000 cow dairy produces about a quarter million pounds of manure daily. In addition to causing dead zones in lakes and rivers, the nitrate from this waste can make its way to groundwater, where many of us get our drinking water from. Water high in nitrates is a danger to pregnant women and newborn babies, and causes increased risk in colon, stomach, and kidney cancers.

Eggs

Egg laying hens are typically raised in small “battery cages” without access to the outdoors. Hens are in very close proximity, requiring the use of antibiotics to reduce diseases that flourish in crowded areas. The overuse of antibiotics has contributed to antibiotic resistance, making bacterial infections in animals and humans increasingly more difficult to treat. (Prod, Comm, -)

Edible Crickets

Although not part of the American diet today, crickets are high in protein, healthy fats, and micronutrients. Edible insects require less land, water, and feed than conventional meat, while emitting fewer greenhouse gases. They are eaten across the world and can be farmed with limited resources. Plus, many people find them delicious!

(Prod, Env, +)

Salmon

Salmon farms create crowded conditions that put pressure on surrounding ecosystems with their high generation of waste. These conditions also create a reliance on antibiotics. In 2007, Chilean salmon farms used nearly 1 million pounds of antibiotics to fight disease in unnatural farming conditions.

✂ Sustainable? You Decide!





Sustainable? You Decide!

Rice

Genetically modified varieties of rice have drastically increased use of pesticides and herbicides. This has increased instances of devastating human loss in agricultural communities due to increase rates of cancer, stillbirths, and birth defects.³

(Prod, Comm, -)

Coffee

The Rainforest Alliance certifies coffee to be shade grown in forests. Most industrially grown coffee is grown in the sun for faster growth, which has been a driver of severe deforestation and habitat loss in many coffee growing countries.

(Prod, Env, -)

Beef

Four companies in the United States control 80% of the US beef industry. This consolidation of the market limits access to processing facilities for small and medium sized producers and lends lobbying control over matters of labor and environmental regulations.

(Prod / Econ, Comm / -)

Rice

Introduction of genetically modified rice varieties like “Miracle Rice” has reduced global famine.

(Prod, Comm, +)

Tomatoes

Local tomatoes are often picked in abundant quantities for a short season, causing many community members to gather together for canning and freezing parties to preserve this bountiful harvest.

(Proc/Comm, Ec/ +)

Watermelon

Watermelon is very resistant to droughts, reducing the need for irrigation. Watermelon are highly dependent on an endangered honeybee population for production.

(Prod, Env, Ec / +)

✂ Sustainable? You Decide!



Sustainable? You Decide!

Food Packaging

40% of the plastic that we make is designed for single use. Because plastic does not completely break down, microplastics accumulate in our oceans and soils. It is estimated that 79,000 tons of plastic comprise the Great Pacific Garbage Patch in the Pacific Ocean, having devastating effects on marine wildlife.

Bananas

Bananas travel a long distance to our plates, often traveling by boat. Sea transport emits only .01 kg of CO₂ per ton of food traveling a kilometer. Air travel clocks in at 1.13 kg CO₂ / tonne km, 113 times more than boats. Out of season berries and other foods that must be transported very fresh are often shipped by air.⁸

Pork

Manure from confined animal feeding operations is highly concentrated and often used in higher amounts than necessary. The runoff of nutrients causes dead zones in waterways and dangerous nitrogen levels in groundwater. (Prod, Env, -)

Your Grocery Trip

One shopping trip by car to buy a few things can have more carbon emissions than the production, processing, and distribution of a food item.⁷ It is better to make fewer trips to the store to stock up, or even better, walk, bike, or bus to the store.

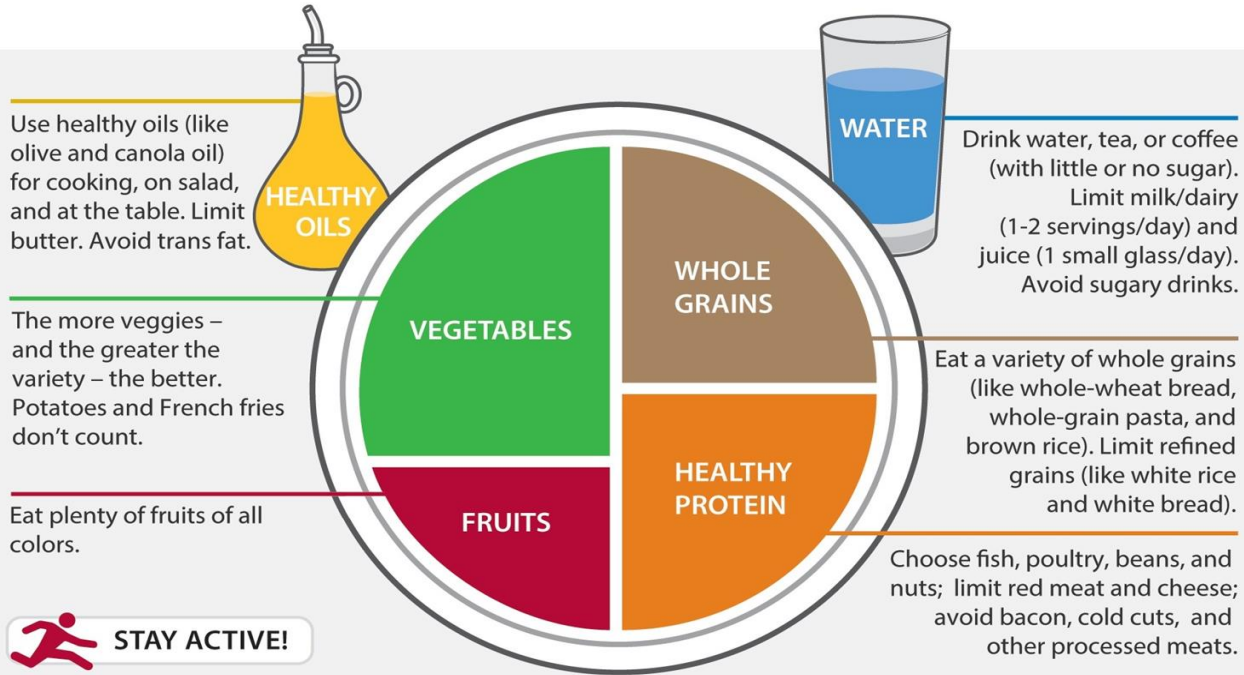
Bananas

Fairtrade International has developed a Fairtrade Minimum Price for bananas, which supports a Fairtrade Base Wage for employees on Fairtrade certified banana plantations.⁶ (Prod, Comm, Economy, +)

Spinach

Spinach and other vegetables sold at the farmer's market allow farmers to capture the entire selling price of a produce without needing to invest in a storefront or sell to a middleman.

HEALTHY EATING PLATE



Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

The more veggies – and the greater the variety – the better. Potatoes and French fries don't count.

Eat plenty of fruits of all colors.

Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.



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The Nutrition Source
www.hsph.harvard.edu/nutritionsource

Harvard Medical School
Harvard Health Publications
www.health.harvard.edu



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NOTE: Unless numbered below, all *Sustainable? You Decide* card information is from: [FoodPrint's Real Food Encyclopedia](https://foodprint.org/eating-sustainably/real-food-encyclopedia/). <https://foodprint.org/eating-sustainably/real-food-encyclopedia/>

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ANIMALS IN AGRICULTURE

Module 6 Student Handouts

Instructions: Print one copy per 2-3 students: pages 1-11, **double-sided, on the short-edge**: pages 24-28

Print one copy per student: page 12

Print one copy total, **double-sided, on the short-edge**: pages 14-23

Cut out card sets on pages 16-23

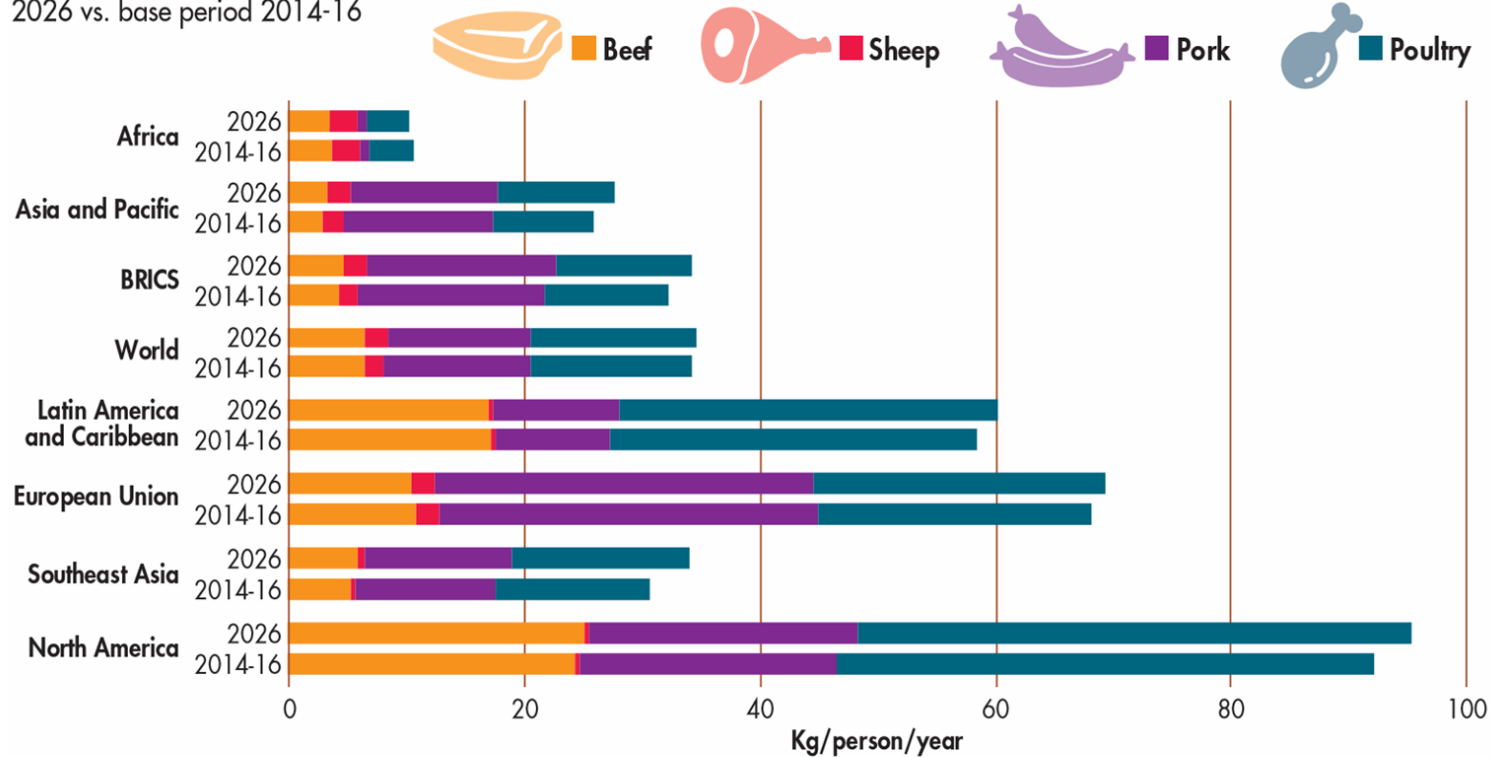


ACTIVITY #1: MEAT CONSUMPTION CHARTS

FIGURE 4: Per capita meat consumption worldwide by type

Copyright WATT Global Media 2017

2026 vs. base period 2014-16



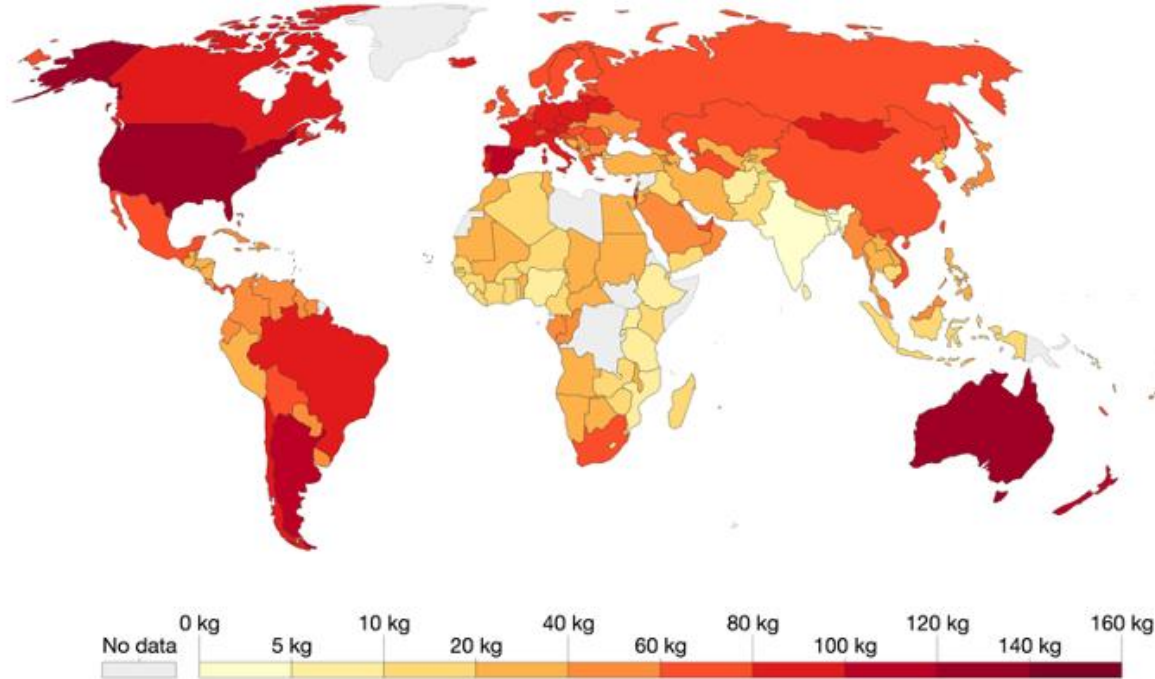
Source: OECD-FAO Agricultural Outlook 2017-26

Note: Taken from "Per capita meat consumption worldwide by type 2014-16 VS. 2026, by Watt Global Media, 2017, <https://www.wattagnet.com/Per-capita-meat-consumption-worldwide-by-type-2014-16-vs-2026>.

ACTIVITY #1: MEAT CONSUMPTION CHARTS

Meat supply per person, 2017

Average total meat supply per person measured in kilograms per year.



Source: UN Food and Agriculture Organization (FAO)

OurWorldInData.org/meat-production • CC BY

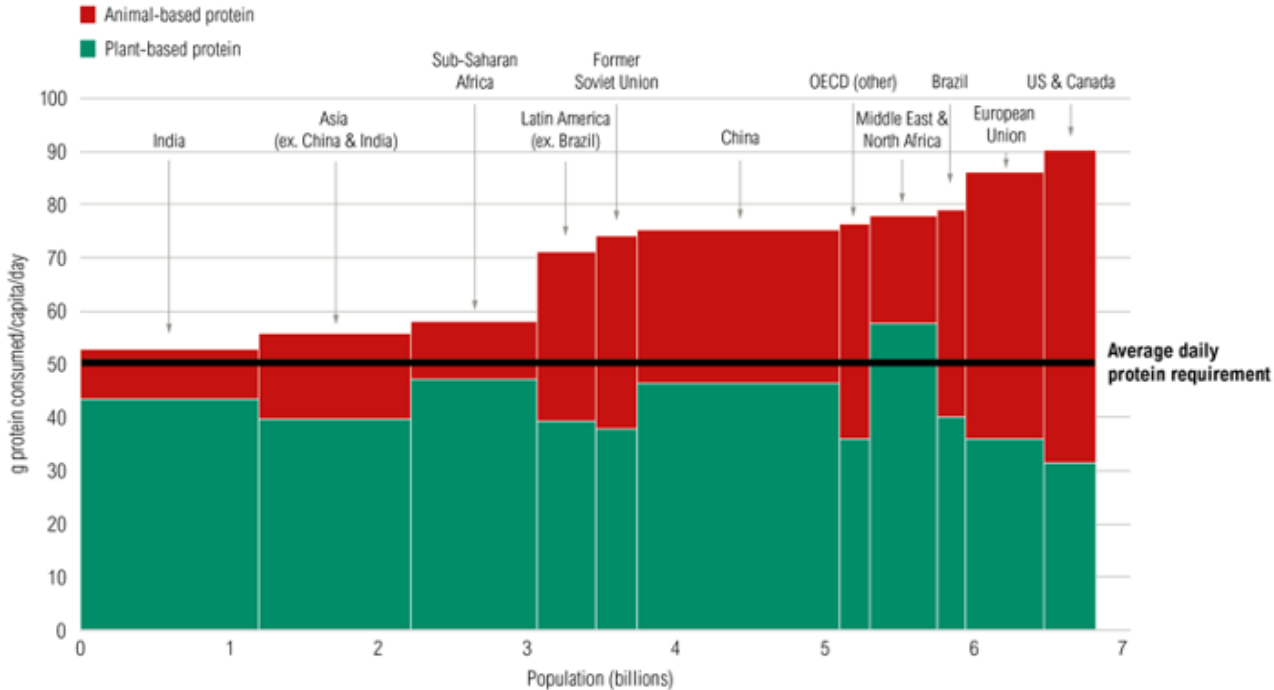
Note: Data excludes fish and other seafood sources. figures do not correct for waste at the household/consumption level so may not directly reflect the quantity of food finally consumed by a given individual.

Note: Taken from "Meat and Dairy Production," by H. Ritchie, P. Rosado, & M. Roser, 2019, Our World in Data

(<https://ourworldindata.org/meat-production#citation>).

ACTIVITY #1: MEAT CONSUMPTION CHARTS

People Are Eating More Protein than They Need—Especially in Wealthy Regions

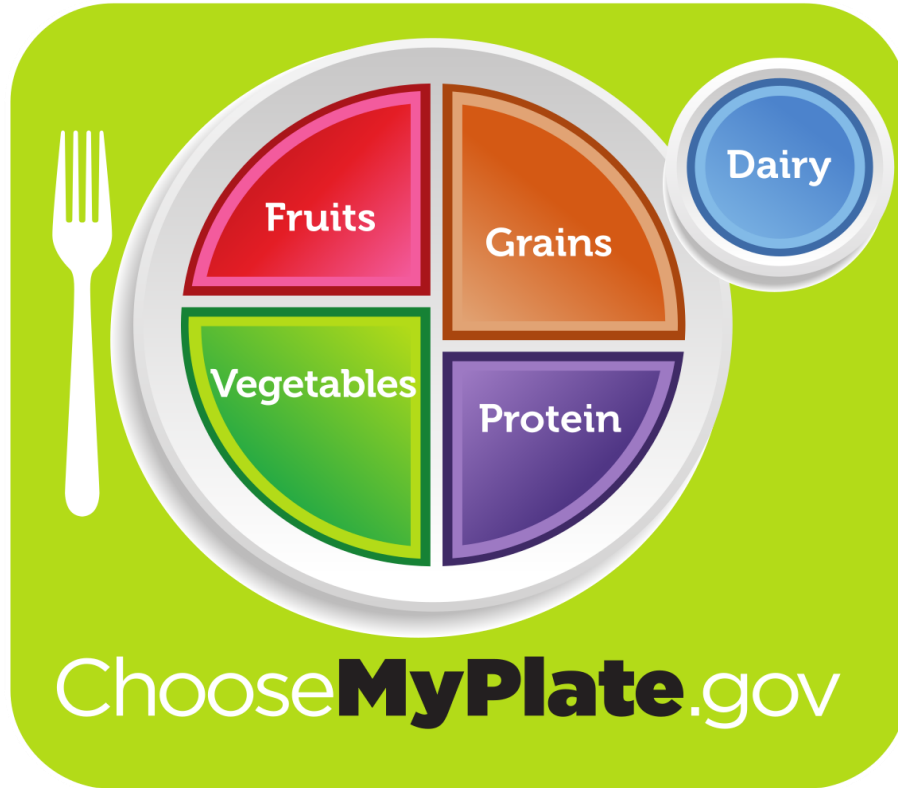


wri.org/shiftingdiets

 WORLD RESOURCES INSTITUTE

Note: Taken from “Shifting Diets for a Sustainable Food Future: Creating a Sustainable Food Future, Installment Eleven,” by J. Ranganathan, D. Vennard, R. Waite, B. Lipinski, T. Searchinger, & P. Dumas, 2016, World Resource Institute (<https://www.wri.org/research/shifting-diets-sustainable-food-future>).

ACTIVITY #1: FOOD PYRAMIDS



ACTIVITY #1: FOOD PYRAMIDS – USDA MYPLATE RECOMMENDATIONS

PROTEIN

“All foods made from seafood; meat, poultry, and eggs; beans, peas, and lentils; and nuts, seeds, and soy products are part of the Protein Foods Group.”

“Select a wide variety of protein foods to get more of the nutrients your body needs and for health benefits. Meat and poultry choices should be lean or low-fat, like 93% lean ground beef, pork loin, and skinless chicken breasts. Choose seafood options that are higher in beneficial fatty acids (omega-3s) and lower in methylmercury, such as salmon, anchovies, and trout. The advice to consume lean or low-fat meat and poultry and a variety of seafood does not apply to vegetarians. Vegetarian options in the Protein Foods Group include beans, peas, and lentils, nuts, seeds, and soy products.”

DAIRY

“The Dairy Group includes milk, yogurt, cheese, lactose-free milk and fortified soy milk and yogurt. It does not include foods made from milk that have little calcium and a high fat content, such as cream cheese, sour cream, cream, and butter.”

“About 90% of Americans do not get enough dairy, therefore most individuals would benefit by increasing intake of fat-free or low-fat dairy, whether from milk (including lactose-free milk), yogurt, and cheese, or from fortified soy milk or yogurt.”



ACTIVITY #1: FOOD PYRAMIDS – HARVARD MEDICAL SCHOOL’S HEALTHY EATING PLATE

HEALTHY EATING PLATE

HEALTHY OILS
Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

WATER
Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

VEGETABLES
The more veggies – and the greater the variety – the better. Potatoes and French fries don’t count.

WHOLE GRAINS
Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

FRUITS
Eat plenty of fruits of all colors.

HEALTHY PROTEIN
Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.

STAY ACTIVE!

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Harvard T.H. Chan School of Public Health
The Nutrition Source
www.hsph.harvard.edu/nutritionsource

Harvard Medical School
Harvard Health Publications
www.health.harvard.edu

Note: Taken from “Healthy Eating Plate,” by Harvard T.H. Chan School of Public Health, *The Nutrition Source*, 2023 (<https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/>).

ACTIVITY #1: FOOD PYRAMIDS

KEY DIFFERENCES BETWEEN MYPLATE AND HEALTHY EATING PLATE

- USDA's MyPlate "protein section offers no indication that some high-protein foods — fish, poultry, beans, nuts — are healthier than red meats and processed meats," while the Healthy Eating Plate indicates that red meat and cheese should be limited.
- USDA's MyPlate does not mention beneficial fats like olive and canola oil.
- "USDA recommends dairy at every meal, even though there is little evidence that high dairy intake protects against osteoporosis but substantial evidence that high intake can be harmful."



ACTIVITY #1: FOOD PYRAMIDS

rediscover  goodness
OLDWAYS
CULTURAL FOOD TRADITIONS

Mediterranean Diet Pyramid

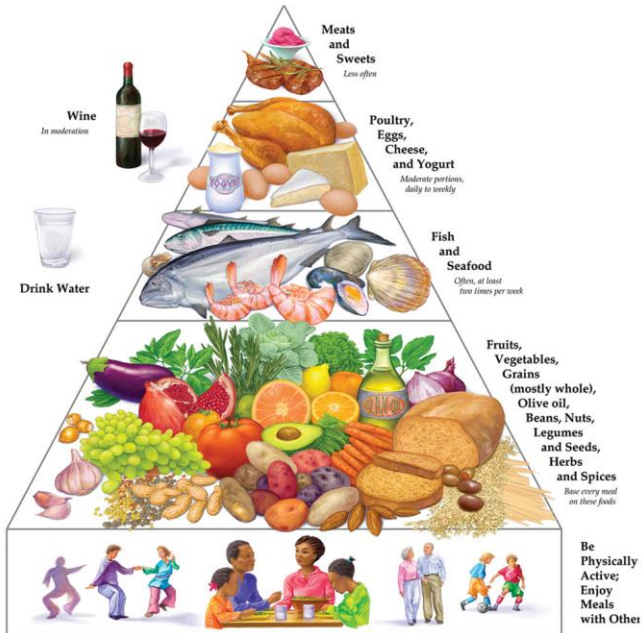


Illustration by George Middleton

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ACTIVITY #1: FOOD PYRAMIDS

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CULTURAL FOOD TRADITIONS

African Heritage Diet Pyramid

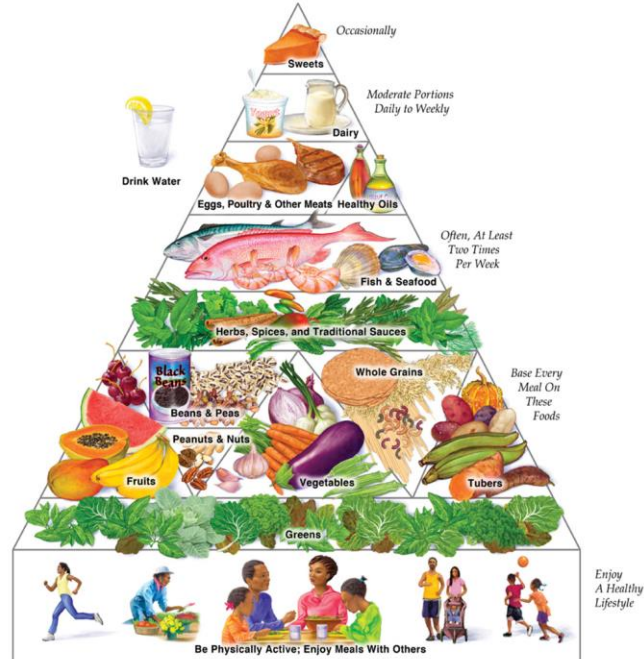


Illustration by George Middleton

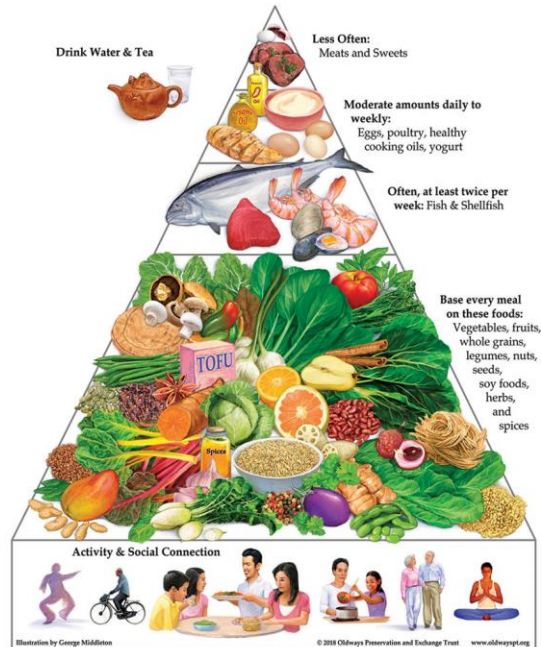
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ACTIVITY #1: FOOD PYRAMIDS

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CULTURAL FOOD TRADITIONS

Asian Diet Pyramid



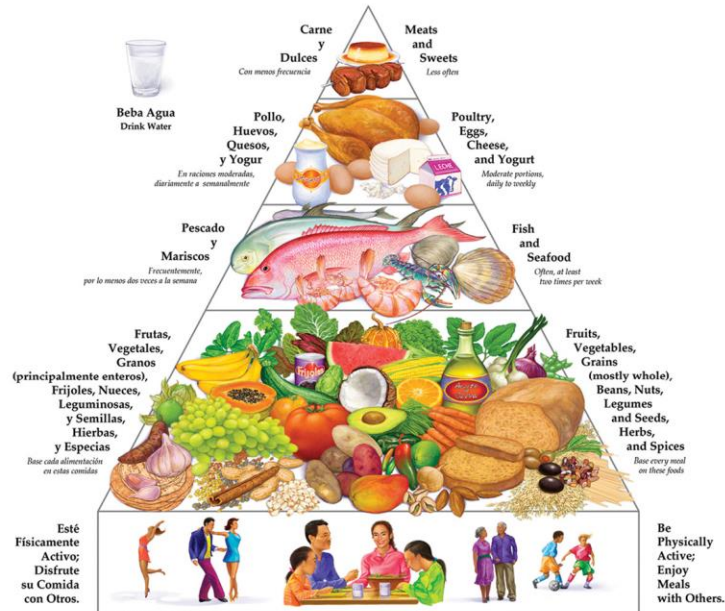
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ACTIVITY #1: FOOD PYRAMIDS

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CULTURAL FOOD TRADITIONS

Latin American Diet Pyramid La Pirámide de La Dieta Latinoamericana



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ACTIVITY #1 – PYRAMID COMPARISON WORKSHEET

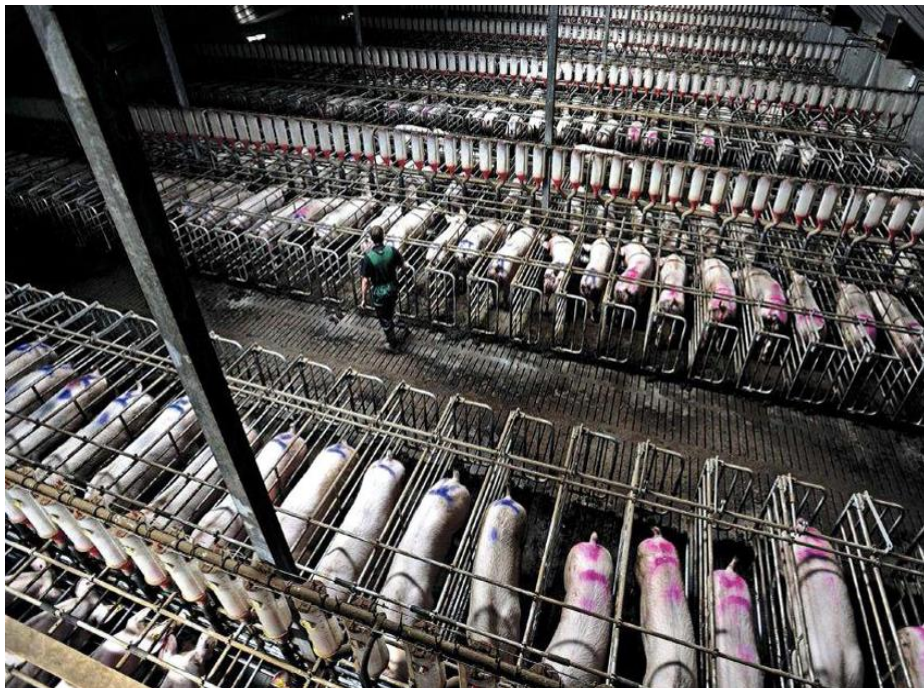
DIFFERENCES

SIMILARITIES

MyPlate and Healthy Eating Plate		
Traditional Diets		
Traditional Diets (Generally) and Healthy Eating Plate		
My Diet and Traditional Diets		



ACTIVITY #3: INDUSTRIAL VS. ECOLOGICAL FARMING: PIGS

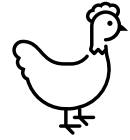


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Deck Family Farm. (2015). *Mama sow with piglets training to pasture* [photograph]. <https://deckfamilyfarm.com/livestock/pasture-raised-pork>

ACTIVITY #3: INDUSTRIAL VS ECOLOGICAL FARMING: CHICKENS



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ACTIVITY #3: MEAT EFFECT CARD SET

Lobbying Power Against Safety and Environmental Regulations

Air Pollution and Childhood Asthma

Fast Slaughter Line Speed

High Injury Rates

Property Value

Worker Injury

Falling Wages

Centralized Ownership of Infrastructure

Externalized Damage

<p>To maximize profits, industrial slaughterhouses can process up to 400 cattle/hr.²</p>	<p>Confined Animal Feeding Operations produce air pollution that has been associated with childhood asthma in areas around the operation.³</p>	<p>The centralized beef industry holds powerful lobbying power. Large companies have been able to band together to limit governmental safety and environmental regulations for the beef industry.²</p>
<p>Due to factors such as processing line speed, sharp tools, strong chemicals, and hot pressurized water, meat processing workers face injuries such as torn muscles, pinched nerves, deep cuts, and even amputated fingers.²</p>	<p>Properties located within three miles of a Confined Animal Feeding Operation lose up to 26% of their property value.¹</p>	<p>Injury rates for workers in animal agriculture are 6.7 per 100 workers. The injury rate for the US workforce as a whole is 3.8 per 100 workers.²</p>
<p>Many of the industrialized beef industry's effects on the environment and community are externalized costs. This means the industry has costly effects, but does not have to pay for them. Instead, taxpayers pay for them, or the damage goes uncorrected.²</p>	<p>Four companies control 80% of the beef market in the United States. These companies own most of the infrastructure along the production chain, limiting access to processing facilities for small and mid size farmers.²</p>	<p>The growing corporate control of meat production has been associated with falling wages and benefits for workers and increased use of both legal and illegal immigrant labor in livestock production and processing.⁴</p>

Financial Instability for Farmers

Low Wages

Global Meat Consumption Rates

Illness due to E. Coli Contamination

Antibiotic overuse leads to
ineffective antibiotics in human
medical system

Deforestation and Unavailability of
Traditional Indigenous Lifestyles

Fast Slaughter Line Speeds

Dangerous Drinking Water
Requires Filtration

Heart Disease Risk

<p>The average person on our planet eats 102.5 pounds of meat per year. Luxembourg and the United States eat 301.4 and 270.7 pounds per person, respectively, while Bangladesh and India eat 7.9 and 7.1 pounds, respectively.⁵</p>	<p>The consolidation of meat industries has resulted in falling wages and benefits for workers. To move chickens to slaughter, workers are hired to catch all chickens in a barn in one night, two in each hand. Workers are paid \$2.25 per 1,000 birds caught.¹⁴</p>	<p>The chicken industry controls the sale price for chickens to slaughter, and often pays less than the cost to raise the birds. Farmers can take out \$1 million loans to cover the cost of infrastructure to raise chickens, and often never pay the loan back due to this predatory pricing system.¹⁴</p>
<p>Deforestation has forced native people from their homelands, destroying traditional ways of life.⁷ The beef industry was responsible for removing 45.1 million hectares of forest land between 2001 and 2015, a rate five times higher than any other product the Eurogroup analyzed.¹³</p>	<p>Crowded conditions in Confined Animal Feeding Operations have required the regular use of antibiotics to fight disease in animals. Many chickens are forced to live in a space smaller than the size of an A4 piece of paper.¹² Bacteria have begun to evolve to survive these antibiotics due to overusage, making it harder to treat bacterial infections in animals.¹⁴</p>	<p>Cows have evolved to eat a grass fed diet. When forced to eat grains, their stomachs become more acidic than usual, creating a friendly environment for E. coli. Grain fed diets and fast processing lines contribute to E. coli contamination in beef. 29% of deaths due to foodborne illness have been traced to salmonella and E. coli in beef.²</p>
<p>A diet high in red meat consumption has been linked to increased risk of heart disease.⁶</p>	<p>Concentrated manure from confined animal feeding operations often results in high nitrogen rates in groundwater. Households, not the CAFOs, must pay for household filtration systems to filter the dangerous nitrate out of their water.²</p>	<p>The workplace is ruled by the line. The federally-allowed speed for the slaughter line has more than doubled in the last four decades, from 70 birds per minute in 1979 to 140 birds per minute today.¹⁴</p>

Greenhouse Gas Production

High Land Use

Deforestation

Dangerous Air Pollution

Dry Colorado River

Extinction of Species and
Biodiversity

Animal Waste Causing Fish Kills

Manure Waste Management
Challenges

High Water Use

<p>There is a strong link between beef production and deforestation. 45.1 million acres of forest were cut down for cattle pasture between 2001 and 2015, creating five times more deforestation than any other product.⁸</p>	<p>It takes 10 lbs of corn to produce 1 lb of beef. The more meat we eat, the more land must be cleared to grow corn.⁴</p>	<p>World livestock accounted for 18% of human generated greenhouse gases in 2008.⁴</p>
<p>Many species can only live in one type of habitat. 80% of terrestrial species live in forests. We are currently undergoing a mass extinction of species around the world, mainly due to agriculture.⁸</p>	<p>85% of water taken from the Colorado River in California, Arizona, and Nevada is for agricultural purposes. The Colorado River has now dried up before it reaches its historical destination. 87% of irrigated corn is grown in areas under water stress.¹¹</p>	<p>Confined Animal Feeding Operations are sources of fine airborne particulates, ammonia, hydrogen sulfide, and odor. All these pollutants are dangers to the air quality, workers and community at large. In Iowa alone, there have been 19 deaths of CAFO workers due to hydrogen sulfide exposure from liquid manure.¹⁰</p>
<p>It takes about 145 gallons of water to produce one loaf of bread, 1,849 gallons of water to produce 3.5 oz of beef.¹⁵</p>	<p>Typical beef or dairy cow excretes about 120 lbs of manure per day, most CAFOs produce as much manure as a small city.¹¹</p>	<p>¼ of Iowa fish kills are due to animal waste leaching into riverways.⁹</p>



ACTIVITY #4: REGENERATIVE AGRICULTURE CARD SET

Animal Welfare

Soil Health

Nutrient Cycling and Manure Management

Human Nutrition

Informal Savings Accounts

Triple Bottom Line: Community, Environment, and Economy in cooperatively owned processing facilities

Low Upfront Costs

Reduced Irrigation Needs

Healthy Pollinators

<p>When animals are raised on pasture, manure goes straight back to the land animals were fed on. This improves soil health and greatly reduces nutrient runoff into waterways.</p>	<p>In a pastured system, land does not need to be plowed for feed. Grass roots stay intact, reducing erosion and maintaining healthy soil. Rotationally grazed pastures have more earthworms and diverse soil microorganisms.¹⁷</p>	<p>Animals in pastured systems can spread out and engage in social behaviors. Calves stay with their mothers, and chickens can spread their wings, nest, and perch.¹⁸ Less crowding reduces flies, parasites, and antibiotic usage.¹⁷</p>
<p>Cooperatively owned animal processing facilities have been created make it easier for small farmers to bring their product to market and keep wealth local. Cooperatives often use a “triple bottom line” model. Not only do they aim for economic profit, but they also aim to be a benefit to the community and the environment.¹⁹</p>	<p>In many cultures, animals serve as informal savings accounts. As such, the stewardship of animal herds is a way for people to accumulate wealth and save, without access to banks, credit card, or cash money. Beyond their economic worth, these animals are valuable as they signify wealth accumulation and status, while also retaining cultural and social value.</p>	<p>One pasture raised egg contains three times the Vitamin the Vitamin D, double the Omega 3 fatty acids, four times the Vitamin E, and seven times the Vitamin A as industrially raised eggs.²²Animals are an incredibly important source of nutrition for people, especially in food insecure areas.</p>
<p>Grasslands not only provide important pollinator habitat, but they reduce reliance on pollinator harming pesticides to grow crops for animal feed.²¹</p>	<p>Pasture raised cattle rely much more heavily on rainwater, rather than irrigation, for their feed.²</p>	<p>Confined animal feeding operations require a high investment in infrastructure and supplements. These operations cost two to six times more to set up than pasture based operations.²⁴</p>

THE GARDENER'S SECRET SCAVENGER HUNT: INSECT LIST

POLLINATORS

DECOMPOSERS

Honey Bee

Pollinator



Blowflies

Decomposer



Monarch Butterfly

Pollinator



Fruit flies

Decomposer



Silphium Borer Moth

Pollinator



Black Soldier Flies

Decomposer



DECOMPOSERS

Blowflies

Blowflies are essentially nature's cleanup crew! They lay eggs in moist areas that hatch into larvae, consumes decaying matter, and breaks down organic material. Through digestion, these flies release nutrients back to the soil. They are thus effective recyclers and scavengers.

Fruit flies

Fruit flies often exist in large populations on compost heaps in gardens. Although often considered a pest of human dwellings, adult fruit flies, along with young larvae, feed on ripe and decaying fruits and vegetables.

Black Soldier Flies (BSFs)

BSF larvae eat a variety of decomposing material, from compost to rotting meat. The larvae reduce odor and disease by chewing and processing waste. It then converts it into food for poultry and fish. Though the larvae have strong chewing mechanisms, the adult fly does not bite or pester humans.

POLLINATORS

Honeybees

Honeybees pollinate more than 100 commercially grown crops in the US, adding 18 billion dollars in agricultural productivity to the economy.²⁵ Hives work together as a queen bee lays eggs, drones fertilize eggs, and worker bees build honeycomb, collect nectar, create honey.

Monarch Butterfly

180,000 plant species worldwide depend on pollinators, like the monarch butterfly. Climate change, pesticide use, and loss of habitat are devastating for monarch butterfly populations. We can increase their populations by planting milkweed and supporting biodiverse practices.²⁶

Silphium Borer Moth

These moths contribute not only to agricultural production, but also to pollinating plants that draw carbon out of the atmosphere and prevent soil erosion. Like many pollinators, they are an endangered species that we can support by planting native plants and supporting biodiverse farming practices.²⁶

AERATORS

PEST MANAGERS

Ants



Green Lacewig



Earthworms*
(*not insects, but annelids)



Lady Beetles



Redworms*
(*not insects, but annelids)



Damsel Flies



PEST MANAGERS

AERATORS

Green Lacewings

These delicate insects feed on pollen, nectar, mites, and other insects. Some species are mainly predatory, often feeding on aphids (Aphids damage garden crops by transmitting plant disease and piercing stems of fruiting plants, causing deformities and decimating yields).²⁹ Lacewings are the natural enemies of many types of pests, and are sometimes used as a form of biological pest control.

Lady Beetles (Ladybugs)

As natural predators, lady beetles eat other insects, including pests that damage crops (like aphids). In their adult stage, lady beetles consume about 50 aphids per day (up to 5,000 in a lifetime!). Their red and black coloring serves as a warning, discouraging other animals from eating them.²⁸

Fireflies (lightning bugs)

These unique beetles use bioluminescence to attract a mate (and ward off predators). They also often feed on soft bodied insects including cutworms, which are notorious for cutting entire tomato plants and destroying other crops by wrapping around the base stem and killing the plant.²⁸

Ants

Ants dig tunnels and create nests in soil that increase water infiltration and soil aeration, allowing water and oxygen to reach plant roots and promoting good microbial activity. Plant parts, seeds, and other dead or decaying materials carried by ants (as their food) also contributes to topsoil, enriching soil organic carbon and nitrogen.²⁷

Earthworms

Not only are earthworms great decomposers, but they also aerate soil, allowing water, oxygen, and nutrients to infiltrate to roots. Perhaps no other living organism is as critical as the earthworm in promoting soil health. Earthworms also support soil structure, nutrient cycling, water movement, and plant growth.

Redworms

Like earthworms, redworms not only aerate the soil, but they also break down decaying material and turn it into bioavailable nutrients for plant roots. As scavengers, redworms gorge on decomposing matter, and in the process they leave behind castings (excrement) rich in nitrogen, phosphorus and potassium, which are great for the soil.

THE GARDENER'S SECRET SCAVENGER HUNT CHECKLIST

POLLINATORS

- Honey Bee
- Monarch Butterfly
- Silphium Borer Moth

DECOMPOSERS

- Blowflies
- Fruit flies
- Black soldier flies

AERATORS

- Ants
- Earthworms
- Redworms

PEST MANAGERS

- Green lacewig
- Lady beetles
- Damselflies

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CLIMATE CHANGE AND FOOD: WHY A CHANGING CLIMATE MATTERS TO YOU



Module 7 Student Handouts

Instructions: It is easiest to print this document **double-sided, on the short-edge**. Print 1 copy for every 2 students in your class.





WEATHER

Tells you what to wear each day



CLIMATE

Tells you what types of clothes to have in your closet



NOAA National Centers for Environmental Information

www.ncei.noaa.gov

Taken from "What's the Difference Between Weather and Climate?" by National Centers for Environmental Information. <https://www.ncei.noaa.gov/news/weather-vs-climate>.

ACTIVITY #2: GREENHOUSE GAS EFFECTS – A CAR EXAMPLE



ACTIVITY #2: GREENHOUSE GAS EFFECTS – A CAR EXAMPLE

- Sunshine (solar energy) passes easily through the glass to heat objects in the car's interior -- remember how hot the car seat gets in summer?
- The car's interior absorbs the short-wave energy and heats up. When the seats heat up, they produce long-wave infrared radiation.
- Here's the tricky part: The glass in the car's windows now begins to act as a kind of one-way mirror. Short-wave solar energy continues to enter with no problem but much of the long-wave infrared radiation is blocked and prevented from leaving

On a much larger scale, this is what's happening to the earth:

- Energy from the sun hits the earth's atmosphere as solar radiation. Some of it is bounced back into space by the atmosphere, but most passes through the atmosphere to warm the surface of the earth.
- Once the earth has been warmed by the short-wave solar energy, excess heat is radiated back into the environment as long-wave infrared radiation.
- Some of the gases in earth's atmosphere act like the glass in the car windows. They let in solar energy and block or absorb infrared energy. As a result, the atmosphere gets warmer.

What does pollution have to do with it?

In all, 30 greenhouse gases have been discovered to date, including carbon dioxide (CO₂), water vapor, methane and ozone. But lately new gases are being added to the mix: Chlorofluorocarbons (CFCs). These are the harmful gases produced by cars and factories, and we humans are responsible!

CLIMATE IS WHAT YOU EXPECT, WEATHER IS WHAT YOU GET

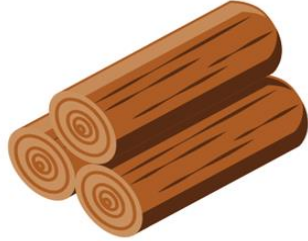
ACTIVITY #2: HUMAN ACTION CARDS

Humans



Drive Cars

Humans



Cut Down Trees

Humans



Plant Trees

Humans



Travel by Bus

Humans



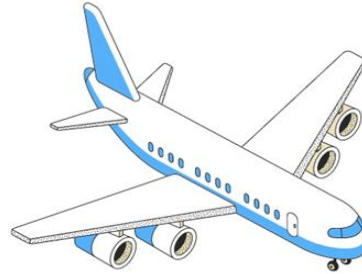
Recycle

Humans



Burn Trash

Humans



Travel by Plane

**Humans
Create**



**Energy-efficient
Technology**

ACTIVITY #2: HUMAN ACTION CARDS

Public transit has the potential to reduce CO₂ emissions by 37 million metric tons per year.¹

(Remove 2 CO₂ molecules)

Trees absorb the CO₂ from the atmosphere and release oxygen in exchange.

(Remove 4 CO₂ molecules)

Every year, Deforestation releasing more than 1.5 billion tons of CO₂ into the atmosphere.³

(Add 4 CO₂ molecules)

There are 1.45 billion cars in the world. The average driver emits ~ 4.6 metric tons of CO₂ per year.⁴

(Add 2 CO₂ molecules)

Increasing energy efficiency is extremely effective in cutting CO₂ emissions.²

(Remove 4 CO₂ molecules)

Aviation is responsible for around 5% of global warming and is rising.⁵

(Add 2 CO₂ molecules)

Burning garbage emits large amounts of CO₂ and toxic chemicals into the atmosphere.⁶

(Add 2 CO₂ molecules)

If the U.S. recycling levels reach 75%, the CO₂ impact would equate to removing 55 million cars from the roads each year.⁷

(Remove 2 CO₂ molecules)

ACTIVITY #3: DROUGHT

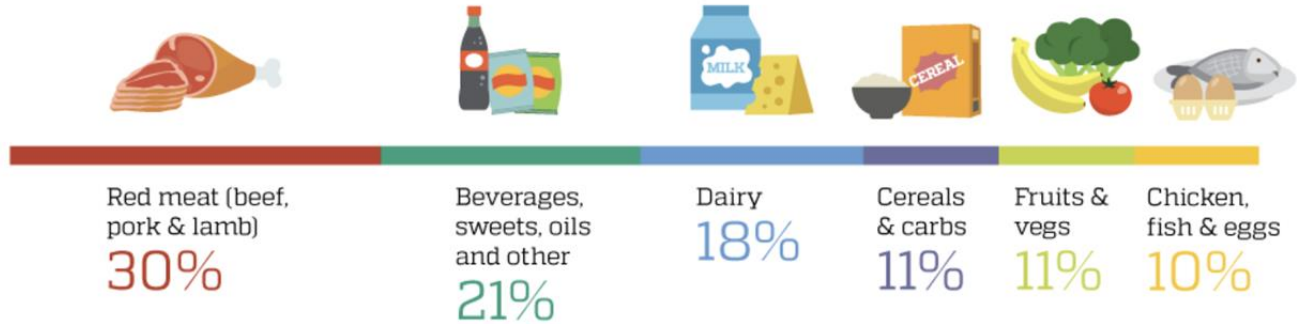


TWO THERMOMETERS GREENHOUSE EFFECT RECORDING SHEET

Time	Thermometer #1 (outside)	Thermometer #2 (inside vase or jar)
Baseline		
10 mins		
20 mins		
30 mins		
40 mins		
50 mins		
1 hour		

ACTIVITY #4: FOOD SYSTEM GREENHOUSE GAS EMISSIONS

GHG emissions by food type



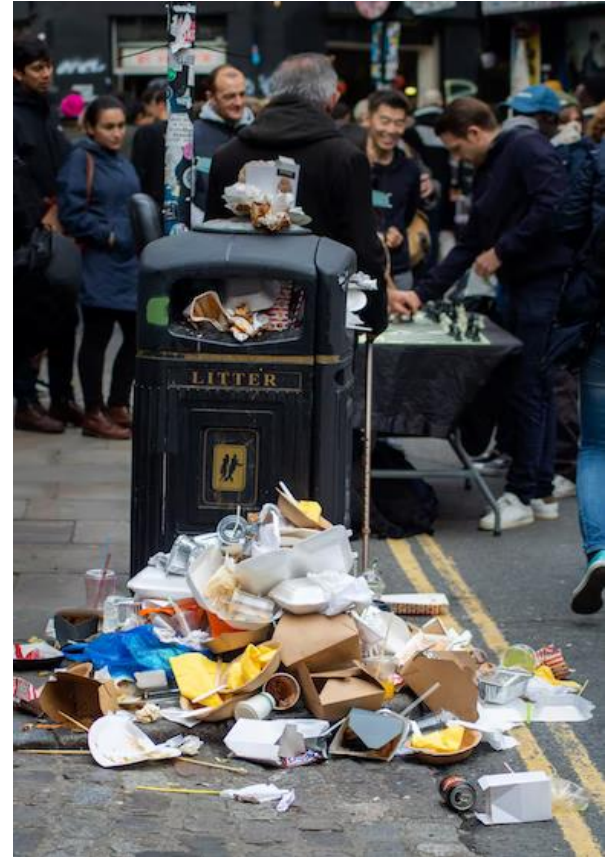
GHG emissions by supply chain stage



ACTIVITY #4: FOOD WASTE




Methane, a powerful greenhouse gas, is emitted into our atmosphere from the food waste in our landfills.



ACTIVITY #4: CLIMATE FOOD FLASHCARDS

Steak
Portion, fried (100g)




CO₂e
29
minutes driving

Emissions 4723 gCO₂e
Water 668 litres
Fibre 0 g
Calories 242 kCal
Protein 30 g

GGDOT

Sausage
Two small (100g)




CO₂e
6
minutes driving

Emissions 1035 gCO₂e
Water 424 litres
Fibre 6 g
Calories 259 kCal
Protein 14 g

GGDOT

Quorn
From frozen, portion (100g)




CO₂e
2
minutes driving

Emissions 379 gCO₂e
Water 200 litres
Fibre 11 g
Calories 196 kCal
Protein 13 g

GGDOT

Cod
Portion (100g)



CO₂e
4
minutes driving

Emissions 642 gCO₂e
Water 137 litres
Fibre 0 g
Calories 198 kCal
Protein 21 g

GGDOT

Lamb
Portion (100g)



CO₂e
27
minutes driving

Emissions 4430 gCO₂e
Water 350 litres
Fibre 0 g
Calories 249 kCal
Protein 30 g

GGDOT

Veggie sausage
Two small (100g)



CO₂e
2
minutes driving

Emissions 361 gCO₂e
Water 73 litres
Fibre 3 g
Calories 247 kCal
Protein 14 g

GGDOT

Salmon
Portion (100g)




CO₂e
5
minutes driving

Emissions 879 gCO₂e
Water 290 litres
Fibre 0 g
Calories 320 kCal
Protein 22 g

GGDOT

Chicken
Portion (100g)



CO₂e
6
minutes driving


Emissions 923 gCO₂e
Water 325 litres
Fibre 0 g
Calories 240 kCal
Protein 28 g

GGDOT

ACTIVITY #4: CLIMATE FOOD FLASHCARDS

Ham

Three slices (100g)




CO₂e
6
minutes driving

Emissions 1070 gCO₂e
Water 394 litres
Fibre 0 g
Calories 115 kCal
Protein 19 g

GGDOT

Pizza

Large slice (100g)




CO₂e
3
minutes driving

Emissions 477 gCO₂e
Water 108 litres
Fibre 6 g
Calories 272 kCal
Protein 12 g

GGDOT

Baked beans

From a can (200g)




CO₂e
3
minutes driving

Emissions 430 gCO₂e
Water 115 litres
Fibre 25 g
Calories 162 kCal
Protein 10 g

GGDOT

Lentils

Cooked at home (200g)



CO₂e
0.9
minutes driving

Emissions 151 gCO₂e
Water 179 litres
Fibre 29 g
Calories 176 kCal
Protein 12 g

GGDOT

Cheese

Three slices (100g)




CO₂e
10
minutes driving

Emissions 1590 gCO₂e
Water 139 litres
Fibre 0 g
Calories 416 kCal
Protein 25 g

GGDOT

Eggs

Two eggs (100g)



CO₂e
3
minutes driving

Emissions 470 gCO₂e
Water 139 litres
Fibre 0 g
Calories 143 kCal
Protein 14 g

GGDOT

Beans

Cooked at home (200g)




CO₂e
1
minutes driving

Emissions 206 gCO₂e
Water 115 litres
Fibre 25 g
Calories 186 kCal
Protein 14 g

GGDOT

Chickpeas

From a can (200g)



CO₂e
2
minutes driving

Emissions 393 gCO₂e
Water 168 litres
Fibre 27 g
Calories 230 kCal
Protein 14 g


GGDOT

ACTIVITY #4: CLIMATE FOOD FLASHCARDS

Almonds

Handful (30g)

0.4 CO₂e
minutes driving




Emissions 63 gCO₂e
Water 295 litres
Fibre 7 g
Calories 184 kCal
Protein 6 g

GGDOT

Peanut butter

Two tablespoons (30g)

0.8 CO₂e
minutes driving




Emissions 126 gCO₂e
Water 95 litres
Fibre 5 g
Calories 187 kCal
Protein 7 g

GGDOT

Milk

One cup (250ml)

3 CO₂e
minutes driving



Emissions 550 gCO₂e
Water 116 litres
Fibre 0 g
Calories 110 kCal
Protein 9 g

GGDOT

Oat milk

One cup (250ml)

0.7 CO₂e
minutes driving




Emissions 110 gCO₂e
Water 111 litres
Fibre 7 g
Calories 148 kCal
Protein 3 g

GGDOT

Peanuts

Handful (30g)

0.6 CO₂e
minutes driving




Emissions 96 gCO₂e
Water 95 litres
Fibre 6 g
Calories 181 kCal
Protein 7 g

GGDOT

Cream

Two tablespoons (28g)

0.8 CO₂e
minutes driving




Emissions 137 gCO₂e
Water 23 litres
Fibre 0 g
Calories 54 kCal
Protein 1 g

GGDOT

Soy milk

One cup (250ml)

2 CO₂e
minutes driving




Emissions 250 gCO₂e
Water 88 litres
Fibre 2 g
Calories 113 kCal
Protein 9 g

GGDOT

Cereal

Portion (30g) + milk (200g)

3 CO₂e
minutes driving



Emissions 519 gCO₂e
Water 121 litres
Fibre 2 g
Calories 202 kCal
Protein 9 g

GGDOT

ACTIVITY #4: CLIMATE FOOD FLASHCARDS

Porridge

With 200g water

 **0.6** minutes driving



Emissions 101 gCO₂e
Water 106 litres
Fibre 6 g
Calories 110 kCal
Protein 3 g

GGDOT

Veg spread

One tablespoon (14g)

 **0.1** minutes driving





Emissions 19 gCO₂e
Water 29 litres
Fibre 0 g
Calories 77 kCal
Protein 0 g

GGDOT

Yogurt

Small pot (100g)

 **1** minutes driving





Emissions 200 gCO₂e
Water 49 litres
Fibre 0 g
Calories 97 kCal
Protein 4 g

GGDOT

Bread

Two slices (80g)

 **0.4** minutes driving



Emissions 60 gCO₂e
Water 30 litres
Fibre 6 g
Calories 190 kCal
Protein 7 g

GGDOT

Butter

One tablespoon (14g)

 **0.7** minutes driving



Emissions 116 gCO₂e
Water 34 litres
Fibre 0 g
Calories 104 kCal
Protein 0 g

GGDOT

Vegetable oil

One tablespoon (14g)

 **0.3** minutes driving



Emissions 52 gCO₂e
Water 28 litres
Fibre 0 g
Calories 126 kCal
Protein 0 g

GGDOT

Soy yogurt

Small pot (100g)

 **0.5** minutes driving





Emissions 80 gCO₂e
Water 41 litres
Fibre 3 g
Calories 45 kCal
Protein 4 g

GGDOT

Toast

Two slices (64g)

 **0.5** minutes driving




Emissions 90 gCO₂e
Water 30 litres
Fibre 5 g
Calories 190 kCal
Protein 6 g

GGDOT

ACTIVITY #4: CLIMATE FOOD FLASHCARDS

Spaghetti

Portion (200g)




CO₂e
2
minutes driving

Emissions 332 gCO₂e
Water 33 litres
Fibre 10 g
Calories 282 kCal
Protein 9 g

GGDOT

Potato

Large (200g)




CO₂e
1
minutes driving

Emissions 240 gCO₂e
Water 16 litres
Fibre 7 g
Calories 148 kCal
Protein 4 g

GGDOT

Peas

Portion (80g)




CO₂e
1
minutes driving

Emissions 204 gCO₂e
Water 26 litres
Fibre 11 g
Calories 56 kCal
Protein 4 g

GGDOT

Asparagus

Seasonal, 5 spears (80g)



CO₂e
1
minutes driving

Emissions 160 gCO₂e
Water 169 litres
Fibre 2 g
Calories 10 kCal
Protein 1 g

GGDOT

Rice

Portion (200g)



CO₂e
5
minutes driving

Emissions 800 gCO₂e
Water 216 litres
Fibre 0 g
Calories 262 kCal
Protein 6 g

GGDOT

Chips

Oven cooked (200g)



CO₂e
4
minutes driving

Emissions 600 gCO₂e
Water 33 litres
Fibre 8 g
Calories 488 kCal
Protein 6 g

GGDOT

Broccoli

Portion (80g)



CO₂e
0.5
minutes driving

Emissions 82 gCO₂e
Water 17 litres
Fibre 7 g
Calories 27 kCal
Protein 3 g

GGDOT

Asparagus

By air, 5 spears (80g)



CO₂e
6
minutes driving


Emissions 1016 gCO₂e
Water 116 litres
Fibre 2 g
Calories 10 kCal
Protein 1 g

GGDOT

ACTIVITY #4: CLIMATE FOOD FLASHCARDS

French beans

By air (80g)



CO₂e
3
minutes driving

Emissions	477 gCO ₂ e
Water	26 litres
Fibre	7 g
Calories	21 kCal
Protein	2 g

GGDOT

Sweetcorn

From frozen (80g)




CO₂e
1
minutes driving

Emissions	182 gCO ₂ e
Water	75 litres
Fibre	7 g
Calories	54 kCal
Protein	3 g

GGDOT

Carrot

One, cooked (80g)




CO₂e
0.5
minutes driving

Emissions	90 gCO ₂ e
Water	2 litres
Fibre	6 g
Calories	27 kCal
Protein	0 g

GGDOT

Tomato

Seasonal, medium (80g)




CO₂e
0.1
minutes driving

Emissions	13 gCO ₂ e
Water	0.8 litres
Fibre	3 g
Calories	11 kCal
Protein	0 g

GGDOT

French beans

Seasonal (80g)




CO₂e
0.5
minutes driving

Emissions	88 gCO ₂ e
Water	26 litres
Fibre	7 g
Calories	21 kCal
Protein	2 g

GGDOT

Cabbage

Portion (80g)



CO₂e
0.3
minutes driving

Emissions	54 gCO ₂ e
Water	11 litres
Fibre	5 g
Calories	11 kCal
Protein	1 g

GGDOT

Tomato

Heated greenhouse (80g)



CO₂e
6
minutes driving

Emissions	1002 gCO ₂ e
Water	0.8 litres
Fibre	3 g
Calories	11 kCal
Protein	0 g

GGDOT

Lettuce

Seasonal (30g)



CO₂e
0.3
minutes driving


Emissions	44 gCO ₂ e
Water	4 litres
Fibre	1 g
Calories	3 kCal
Protein	0 g

GGDOT

ACTIVITY #4: CLIMATE FOOD FLASHCARDS

Avocado

One medium (80g)




CO₂e
1
minutes driving

Emissions	192 gCO ₂ e
Water	107 litres
Fibre	9 g
Calories	152 kCal
Protein	2 g

GGDOT

Banana

Small (80g)



CO₂e
0.3
minutes driving

Emissions	55 gCO ₂ e
Water	43 litres
Fibre	2 g
Calories	65 kCal
Protein	1 g

GGDOT

Raspberries

Seasonal, handful (80g)



CO₂e
1
minutes driving

Emissions	176 gCO ₂ e
Water	21 litres
Fibre	0 g
Calories	0 kCal
Protein	0 g

GGDOT

Strawberries

Seasonal, handful (80g)




CO₂e
1
minutes driving

Emissions	136 gCO ₂ e
Water	17 litres
Fibre	3 g
Calories	24 kCal
Protein	0 g

GGDOT

Apple

From storage, small (80g)



CO₂e
0.2
minutes driving

Emissions	40 gCO ₂ e
Water	35 litres
Fibre	3 g
Calories	41 kCal
Protein	0 g

GGDOT

Orange

Small (80g)



CO₂e
0.2
minutes driving

Emissions	32 gCO ₂ e
Water	32 litres
Fibre	5 g
Calories	29 kCal
Protein	1 g

GGDOT

Raspberries

By air, handful (80g)



✈️
CO₂e
3
minutes driving

Emissions	568 gCO ₂ e
Water	21 litres
Fibre	0 g
Calories	0 kCal
Protein	0 g

GGDOT

Strawberries

By air, handful (80g)



✈️
CO₂e
2
minutes driving


Emissions	408 gCO ₂ e
Water	14 litres
Fibre	3 g
Calories	24 kCal
Protein	0 g

GGDOT

ACTIVITY #4: CLIMATE FOOD FLASHCARDS

Orange juice

Small glass (200ml)




CO₂e
2 minutes driving

Emissions	400 gCO ₂ e
Water	146 litres
Fibre	1 g
Calories	72 kCal
Protein	2 g

GGDOT

Water

Plastic bottle (500ml)




CO₂e
0.8 minutes driving

Emissions	136 gCO ₂ e
Water	0.5 litres
Fibre	0 g
Calories	0 kCal
Protein	0 g

GGDOT

Sugar

One teaspoon (6g)




CO₂e
0.1 minutes driving

Emissions	15 gCO ₂ e
Water	6 litres
Fibre	0 g
Calories	24 kCal
Protein	0 g

GGDOT

Biscuit

One plain (13g)




CO₂e
0.1 minutes driving

Emissions	17 gCO ₂ e
Water	19 litres
Fibre	1 g
Calories	60 kCal
Protein	1 g

GGDOT

Tap water

Large glass (500ml)



CO₂e
0 minutes driving

Emissions	0 gCO ₂ e
Water	0.5 litres
Fibre	0 g
Calories	0 kCal
Protein	0 g

GGDOT

Fizzy drink

One can (330ml)



CO₂e
1 minutes driving

Emissions	158 gCO ₂ e
Water	50 litres
Fibre	0 g
Calories	205 kCal
Protein	0 g

GGDOT

Milk chocolate

Small bar (25g)




CO₂e
0.5 minutes driving

Emissions	88 gCO ₂ e
Water	182 litres
Fibre	1 g
Calories	130 kCal
Protein	2 g

GGDOT

Chocolate biscuit

One plain (13g)



CO₂e
0.1 minutes driving


Emissions	23 gCO ₂ e
Water	40 litres
Fibre	1 g
Calories	63 kCal
Protein	1 g

GGDOT

ACTIVITY #4: CLIMATE FOOD FLASHCARDS

Crisps

Small packet (25g)




CO₂e
0.3
minutes driving

Emissions	54	gCO ₂ e
Water	41	litres
Fibre	4	g
Calories	123	kCal
Protein	2	g

GGDOT

Latte

With 400ml milk




CO₂e
6
minutes driving

Emissions	1024	gCO ₂ e
Water	503	litres
Fibre	0	g
Calories	176	kCal
Protein	14	g

GGDOT

Coffee

Cup, with tbsp milk




CO₂e
0.6
minutes driving

Emissions	96	gCO ₂ e
Water	39	litres
Fibre	0	g
Calories	9	kCal
Protein	1	g

GGDOT

Tea

Cup, with tbsp milk



CO₂e
0.6
minutes driving

Emissions	94	gCO ₂ e
Water	9	litres
Fibre	0	g
Calories	7	kCal
Protein	1	g

GGDOT

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Climate Food Flashcards can be downloaded [here](#).

MENTAL HEALTH AND URBAN AGRICULTURE



Module 8 Student Handouts

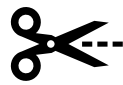
Instructions: It is easiest to print this document **double-sided**. Print 1 copy for every 2 students in your class.



ACTIVITY #3: HEALING GARDEN ASPECTS LIST

<p>Digging Bed</p> <p>An empty digging bed to dig can get your body moving and decrease stress.</p>	<p>Sensory Plants</p> <p>Plants that stimulate the five senses of touch, taste, smell, and hearing help to connect with nature.</p>	<p>Colorful Plants</p> <p>Colors make people feel happiness, excitement, and joy.</p>
<p>Plants to Attract Wildlife</p> <p>Bees and butterflies are exciting to see in the garden interacting with plants.</p>	<p>Gifts from the Garden</p> <p>It's fun and rewarding to be able to give someone a present that you made yourself.</p>	<p>Water Features</p> <p>Water is beautiful to look at and fountains promote a sense of calm.</p>
<p>Plants with Healing Properties</p> <p>Plants such as chamomile or lavender are great ways to relieve stress.</p>	<p>Seating Area</p> <p>Social interaction is important for mental health and a seating area can help people to connect with each other</p>	<p>Welcoming Environment</p> <p>It's important that everyone in the healing garden is accepted and treated equally.</p>





ACTIVITY #4: MATCHING CARDS: DESCRIPTION

Staying active is a great way to improve mental health. This section of the garden is left unplanted to allow physical exercise in the form of digging!

Many plants have properties like sweetness or color to make them appealing to other species. These species are exciting for people to see!

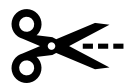
Lamb's ear's fuzzy surface is fun to touch while basil and mint are fun to smell! Stevia can also be tasted! What are these plants examples of?

This part of the healing garden can help people to feel relaxed and calm because of the soothing noises it creates.

Lavender can be used to relieve sadness while chamomile has properties that relieve stress.

Beautiful colors can cause happiness and improve mental health.





ACTIVITY #4: MATCHING CARDS: PICTURES

Digging Bed



Bees and Butterflies



Sensory Plants



Water Features



Plants with Healing Properties



Colorful Plants



THE VALUE WITHIN OUR FOOD



Module 9 Student Handouts

Instructions: It is easiest to print this document **double-sided**. Print 1 copy for every 2 students in your class. Individually cut out the Food Supply Chain Cards and the Food Loss and Waste Cards from pages 2-6 into card decks.



WHAT IS FOOD WASTE AND HOW DOES IT DIFFER FROM FOOD LOSS?



Food Loss: The food that does not reach retail and consumers. Food loss is often the result of lack of technology, extreme weather events, inadequate storing, and contamination.

Food Waste: The food that is lost while still safe and nutritious. Food waste is more common in higher-income countries, and is the result of consumer behaviors, government policies, poor planning, and misinformation on labelling.

ACTIVITY #1: FOOD SUPPLY CHAIN CARDS

Processing



Packaging



Marketing



Storage



Production



Distribution



Retail



Consumption





Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!

ACTIVITY #1: FOOD LOSS AND FOOD WASTE CARDS



Drought or Storm impacting food yields



Crops spoiled due to inadequate storage



Food contaminated from bacterial exposure when poorly handled



Edible, safe food thrown away



Food deemed too 'ugly' to sell or accept



Food becomes spoiled in your home



Food becomes stale or spoils fast from inadequate sealing



Unsold food thrown away in grocery stores



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!

ACTIVITY #1: FOOD LOSS AND FOOD WASTE CARDS



Food becomes unprofitable to sell and is not harvested or delivered



Consumers overbuy products with not enough time to eat it all



Pests feed off of crops and harvest



Food is left on plate from too large of a portion



Consumers throw out edible food due to confusion of food labels



Removal of edible food portions, such as fat, skin, and peels



Crops are unable to be transported due to lack of infrastructure



Crop loss due to lack of access to technology



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



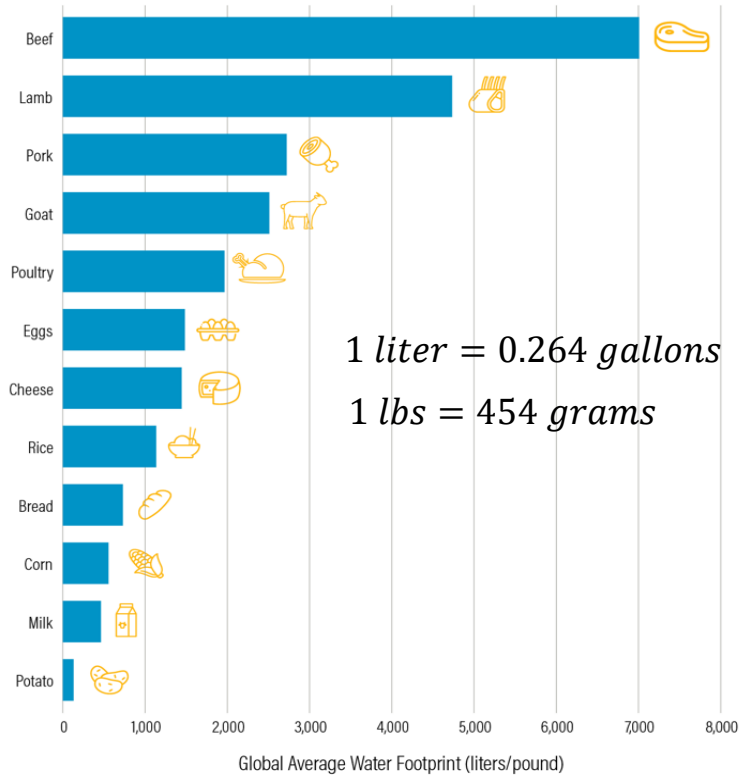
Food Up!



Food Up!

HOW MUCH GOES INTO OUR FOOD?

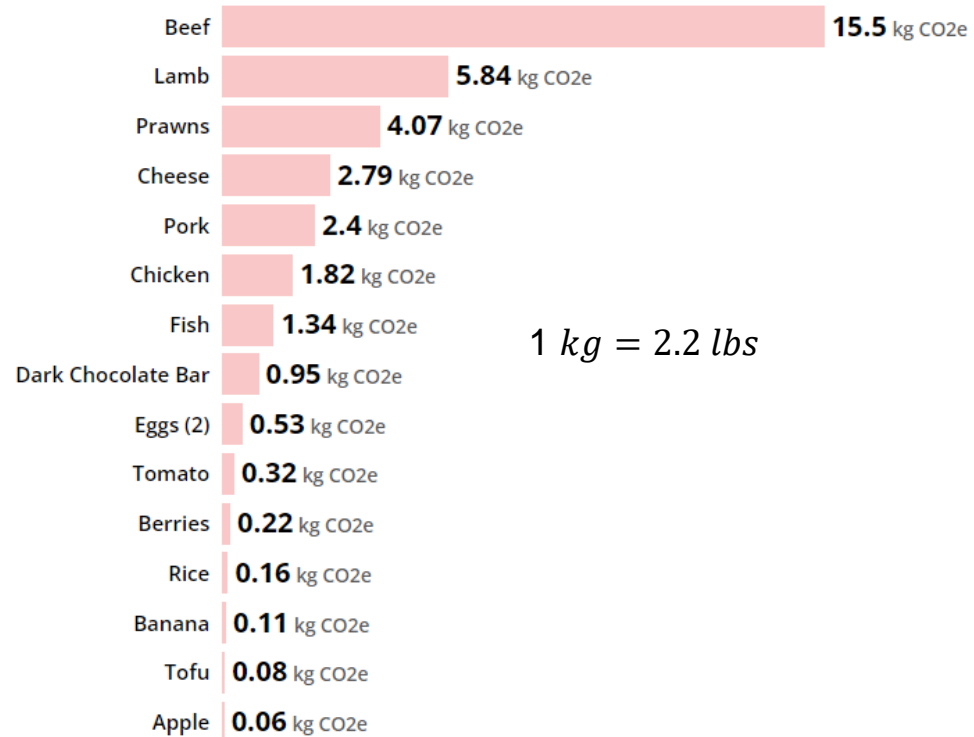
WATER



Source: Water Footprint Network.



GREENHOUSE GAS EMISSIONS



Note: Taken from "Food," by CO2 Everything, 2018 (<https://www.co2everything.com/category/food>).

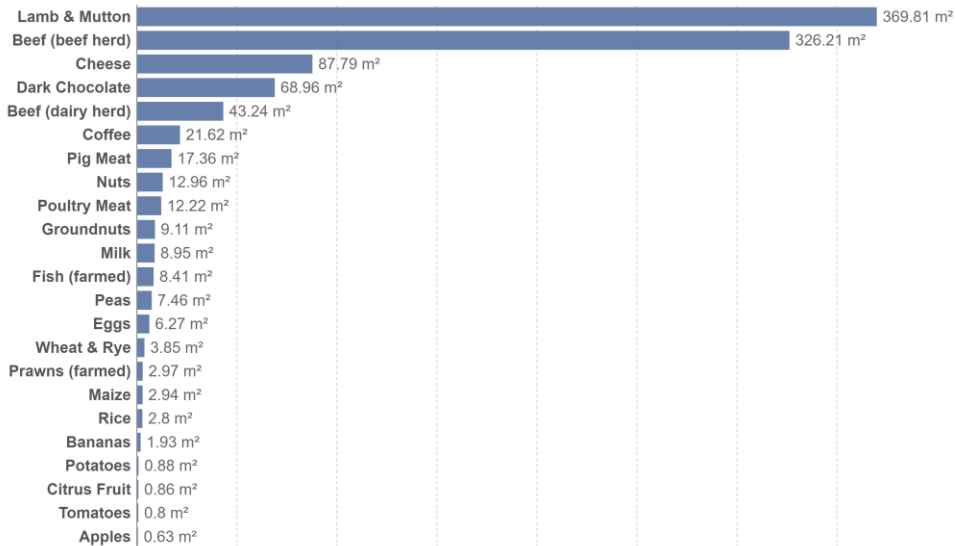
Note: Taken from "Water could limit our ability to feed the World," by the World Resources Institute, 2020 (<https://impakter.com/water-could-limit-our-ability-to-feed-the-world-these-9-graphics-explain-why/>).

HOW MUCH GOES INTO OUR FOOD?

LAND

Land use per kilogram of food product

Land use is measured in meters squared (m²) per kilogram of a given food product.

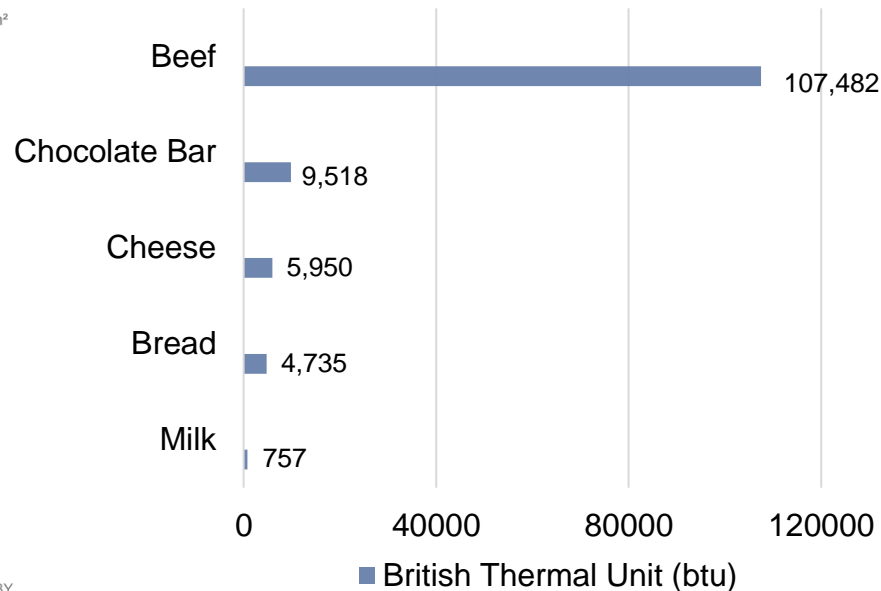


Source: Joseph Poore and Thomas Nemecek (2018).

OurWorldInData.org/environmental-impacts-of-food • CC BY

ENERGY

Energy use per pound (lb.) of food product



■ British Thermal Unit (btu)

1 square meter = 10.76 square feet

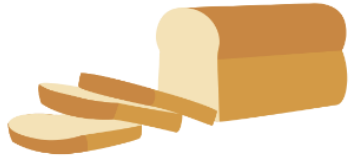
1 btu = 0.252 kilocalories

1 lb = 0.12 gallons





1 lb = 454 grams

Note: Taken from "Environmental Impacts of Food Production," by Our World In Data, 2019 (<https://ourworldindata.org/environmental-impacts-of-food>).

Names:



Bread is the **MOST** wasted food in the US, with over 240 million slices of bread thrown away each year.¹

<i>How much goes into ONE loaf of bread?</i>	Estimated	Actual
Pounds of Carbon Dioxide 		
Gallons of Water 		
Energy 		
Land Used 		



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!

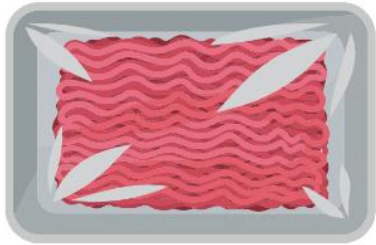


Food Up!







Food Up!

Names:



Each year, 5 million acres of rainforest are deforested in South and Central America for cattle pasture.²

The water it takes to produce **ONE** pound of beef is equivalent to showering for 12 hours.³

<i>How much goes into ONE pound of beef?</i>	Estimated	Actual
Pounds of Carbon Dioxide 		
Gallons of Water 		
Energy 		
Land Used 		



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!







Food Up!

Names:



Cheese is one of the top foods contributing to greenhouse gas emissions, as it needs roughly 10 pounds of milk for one pound of cheese.⁴

<i>How much goes into ONE serving size of cheese? (100g)</i>	Estimated	Actual
Pounds of Carbon Dioxide 		
Gallons of Water 		
Energy 		
Land Used 		



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!







Food Up!

Names:



In the United States,
68 Olympic-size
swimming pools of
milk are wasted every
year. That is
equivalent to 45
million gallons.⁵

<i>How much goes into ONE gallon of milk?</i>	Estimated	Actual
Pounds of Carbon Dioxide 		
Gallons of Water 		
Energy 		
Land Used 		



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!







Food Up!

Names:



Over the past 60 years, Côte d'Ivoire has lost 94% and Ghana has lost 80% of their forest to cocoa production.⁶

<i>How much goes into ONE chocolate bar? (100g)</i>	Estimated	Actual
Pounds of Carbon Dioxide 		
Gallons of Water 		
Energy 		
Land Used 		



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!









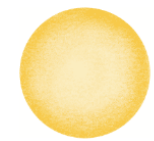





Food Up!

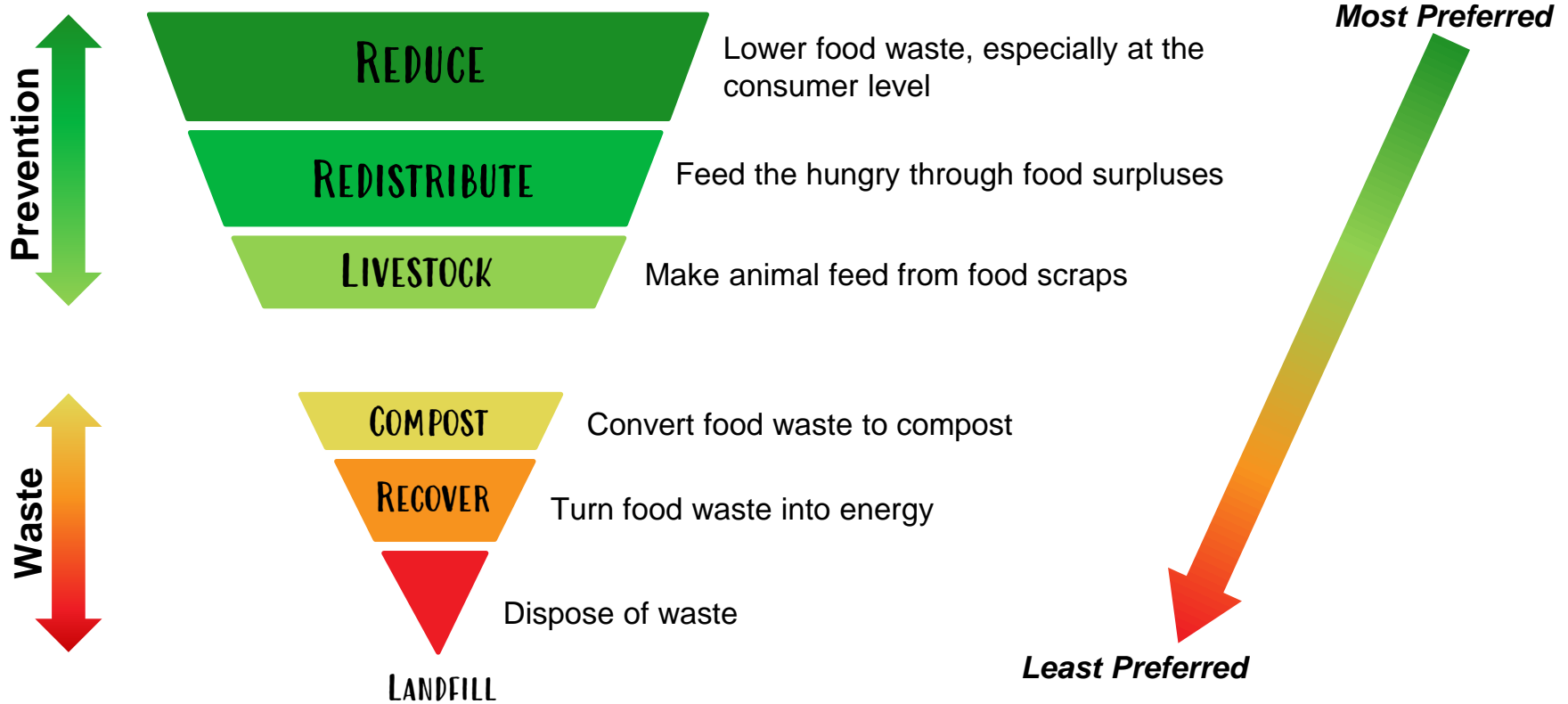


Food Up!

ACTIVITY #2: FIGURE LEGEND

<p>Pounds of Carbon Dioxide</p> 	<p>1 lbs.</p> 	<p>5 lbs.</p> 
<p>Gallons of Water</p> 	<p>50 gallons</p> 	<p>150 gallons</p> 
<p>Kilocalories of Energy</p> 	<p>100 kcal</p> 	<p>1,000 kcal</p> 
<p>Land Used in square ft</p> 	<p>10 ft²</p> 	<p>100 ft²</p> 

CONNECTING TO THE GARDEN: THE FOOD WASTE PYRAMID



ACTIVITY #3: FOOD FACTS!

- Every year, 1/3 of the world's food is wasted or lost. The edible food we waste is enough to feed 3 billion people.⁷
- Uneaten food takes away 25% of our water supply 18% of our cropland, and 21% of our landfills.⁷
- The average American household tosses out 25% of the food they purchase.⁸
- Half of all produce is tossed out in the United States due to their appearance. This equates to 60 million tons of fruits and veggies.⁷
- Uneaten food accounts for around 10% of greenhouse gases.⁹
- It would only take saving ¼ of the food currently wasted to feed every hungry person.⁹
- If food waste was a country, it would be the third largest emitter of greenhouse gases, right behind the United States and China.⁹
- Food loss is more prevalent in low-income countries, as 40% of their food loss occurs at the post-harvest level. However, in high-income countries, more than 40% of food is wasted at the retail and consumer level.⁷



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



Food Up!



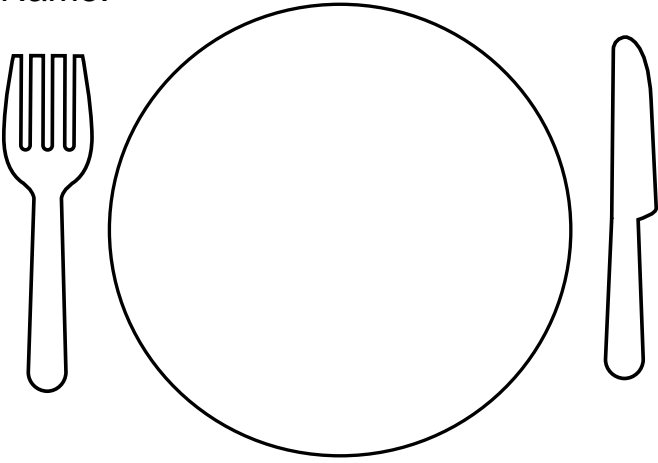
Food Up!



Food Up!

ACTIVITY #4: EXPLORING OUR PLATE

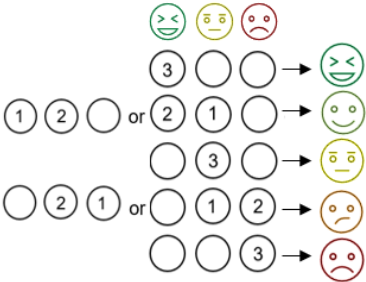
Name: _____



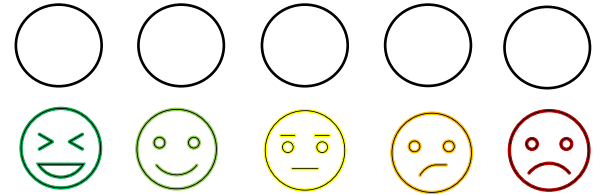
What was on your plate?

<p>How many food items were wrapped in plastic packaging?</p> <p> 0 1 2+</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/></p>
<p>How much food was left on your plate?</p> <p> 0 1-2 spoonfuls 3+ spoonfuls</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/></p>
<p>How much of your meal came from other countries?</p> <p> None Some All</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/></p>

Plate Score Key:



Total Plate Score:



REFERENCES

1. Ingini, M. (2022). *10 food waste statistics in America*. Earth.Org. <https://earth.org/food-waste-in-america/#:~:text=5.,every%20year%20across%20the%20country>.
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3. Winchester, A. (2018). *The water footprint and waste of beef*. Union College. <https://muse.union.edu/mth-063-01-f18/2018/09/14/the-water-footprint-and-waste-of-beef/>
4. Hymas, L. (2011). *Is your cheese killing the planet?* Grist Magazine. <https://grist.org/sustainable-food/2011-08-08-is-your-cheese-killing-the-planet/>
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7. Robinson, D. (2022). *25 Shocking facts about food waste*. Earth.Org. <https://earth.org/facts-about-food-waste/>
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9. *Food waste facts*. (n.d.). Stop Wasting Food Movement. <https://stopwastingfoodmovement.org/food-waste/food-waste-facts/>

Worksheet adapted from “Every plate tells a story,” by World’s Largest Lesson (<https://worldslargestlesson.globalgoals.org/resource/plate-pioneerz-every-plate-tells-a-story/>).