

MEAT 101



In addition to the Illinois Learning Standard, Next Generation Science Standards and NCSS Standards, lessons in this booklet were originally paired with National Standards for Family and Consumer Sciences Education. Specifically, the lessons were targeted to the following:

- 9.1.1 Explain the role and function of individuals engaged in food science, food technology, dietetics and nutrition careers.
- 9.2.5 Demonstrate practices and procedures that assure personal and workplace health and hygiene.
- 9.3.1 Analyze nutrient requirements across the life span addressing the diversity of people, culture and religions.
- 9.3.4 Assess the influence of cultural, socioeconomic and psychological factors on food and nutrition and behavior
- 9.5.2 Analyze data in statistical analysis when making development and marketing decisions.
- 9.6.1 Build menus to customer/client preferences.

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Slice the Pineapple

Objective: Students will learn about the usefulness of all parts of an animal. They will view the dissection of a pineapple and determine how much of the “fruit” can be eaten and how much would be considered a by-product.

CCSS: Math.Content.6RP.A.1; 6RP.A.3.C; 7.RP.A.2; 7.RP.A.2.A;
ELA-Literacy.RI.6.7;

NGSS: From Molecules to Organisms: Structures and Processes MS-LS1-3-5
National Standards for FCSE: 9.1.1; 9.2.5

Reading Suggestions:

- Beef Cattle, In the Story of Agriculture by Susan Anderson and JoAnne Buggey ISBN 9781926781099
- Eggs! Life on a Chicken Farm by Ruth Owen ISBN 9781615335299
- Feeding The World Meat by Jane E. Singer ISBN 9781422227466
- Meat! Life on a Sheep Farm by Ruth Owen ISBN 9781615335336
- Pig 05049 by Christien Meindersma ISBN 9789081241311
- Pigs and Pork, In the Story of Agriculture by Susan Anderson and JoAnne Buggey ISBN 9781926781013
- Sausage by Carol Jones ISBN 9780791070062
- Beef, Livestock and Pork Ag Mag's
- Sheep and Poultry Terra Nova's

Materials:

- Whole fresh pineapple **grape, strawberry and cantaloupe optional*
- Sharp kitchen knife
- Pan to catch juice—cookie sheet works great
- Cutting board—to fit inside the cookie sheet
- Scale
- Bowls
- Fork
- Record sheet(s) provided on pages 5-7

Directions:

We know most of the animal is used for meat. However, we also want to show it's not all meat or muscle. We are going to use a pineapple to represent an animal that is harvested. We will see how much “meat” we get from the animal.

****Carefully prepare cutting surface and bowls, be sure to wear proper hand and hair sanitation supports.**

1. Place cutting board inside the drip pan.
2. Weigh the whole fresh pineapple and record weight on the record sheet.
3. Cut off the bottom and top of the pineapple.
4. Weigh the top and bottom separately and record on the record sheet.
5. Rough trim the outer covering of the pineapple.
6. Weigh the first outer covering trimmings and record on the record sheet.

Adapted from University of Nebraska Extension

7. Closely trim pineapple meat removing dark spots and remaining outer covering.
8. Weigh the close trim and dark spots and record on the record sheet.
9. Divide the pineapple in half lengthwise.
10. Divide each half again lengthwise.
11. Trim the core (center) off each quarter.
12. Weigh all of the quarters together and record on record sheet.
13. Slice meat of the pineapple into chunks.
14. Weigh meat of the pineapple.
15. Collect and weigh any scraps and juice from the drip pan.
16. Complete the calculations on the record sheet found on the following pages.
17. Complete the same measurements for cantaloupe, strawberries and grapes off the stem.
18. Eventually all 'harvested meat' products can be placed in a bowl to enjoy as fruit salad

Check for Understanding:

1. This pineapple can be used to represent an animal that has been harvested. Which weight did you take that would fit the following for a harvested steer?
 - Live weight? (total pineapple weight)
 - Weight of the head and tail? (top and bottom trimmings)
 - Weight of the hide? (rough first trim)
 - Weight of the internal organs? (core weight)
2. The same weight percentages can be used for the cantaloupe, strawberry and grape.
3. What term do we use to describe all the products that could be used for something other than meat? (By-products)
4. What does the term "dressing percentage" mean for an animal? (The percent of the animal's weight that is considered meat.)
5. Once you have your meat and by-products, what could you do with the leftovers? (Compost)

Extensions:

1. Have students represent the meat harvested and trimmings using a pie chart.
2. Challenge your students to represent the data graphically and rationalize why they chose to represent it the way they did.
3. Discuss composting with your class. What is compost? How long does it take to make? How do you make it? What can you put in your compost pile? What should you avoid? These are all questions you will want to research before beginning your own compost pile. After completing the pineapple activity, discuss using the trimmings in their compost.
4. Learn more about the importance of muscles in an animal's body by reading the background information on the following page. Have students write a summary of what was learned.
5. Research different careers available in the muscular area of science.

Background Information:

Muscles are an important system in an animal's body. Most animals have several hundred muscles. They do everything from pumping blood to helping move. Some muscles are controlled, meaning they are under your conscious control, while others — like the heart — do their jobs without thinking about them. Muscles are all made of the same material, a type of elastic tissue (sort of like the material in a rubber band). Thousands, or even tens of thousands, of small fibers make up each muscle.

There are three different types of muscles in the body: **smooth**, **cardiac** and **skeletal**

Smooth muscles — sometimes also called involuntary muscles — are usually in sheets, or layers, with one layer of muscle behind the other. These are not controlled muscles. The brain and body tell these muscles what to do without thinking. Smooth muscles are at work all over the body. In the stomach and digestive system, they contract (tighten up) and relax to allow food to make its journey through the body. Smooth muscles work behind the scenes in the eyes, too. These muscles keep the eyes focused.

Cardiac muscle — The muscle that makes up the heart is the cardiac muscle. The thick muscles of the heart contract to pump blood out and then relax to let blood back in after it has circulated through the body. Just like a smooth muscle, the cardiac muscle works all by itself with no thinking.

Skeletal Muscle — Now, let's talk about the kind of muscle you think of when we say "muscle" — the ones that show how strong you are and let you kick a soccer ball into the goal. Skeletal muscles are voluntary muscles, which means they can be controlled. The leg won't bend to walk unless the animal wants it to. Together, the skeletal muscles work with the bones to give the body power and strength. In most cases, a skeletal muscle is attached to one end of a bone. It stretches all the way across a joint (the place where two bones meet) and then attaches again to another bone. Skeletal muscles are held to the bones with the help of tendons.

Tendons are cords made of tough tissue, and they work as special connector pieces between bone and muscle. The tendons are attached so well that when you contract one of your muscles, the tendon and bone move along with it.

Skeletal muscles come in many different sizes and shapes to allow them to do many types of jobs. Some of the biggest and most powerful muscles are in the back, and legs. These muscles help keep the animal balanced and standing.

They also give the body the power it needs to pull and push things. Muscles in the neck aren't as large, but they are capable of some pretty amazing things: similar to us they control the head. Try rotating your head around, back and forth, and up and down to feel the power of the muscles in your neck. These muscles also hold the head high.

And don't pass over the tongue — a muscle that's attached only at one end! The tongue is actually made of a group of muscles that work together to allow animals to eat and chew food. Stick out your tongue and wiggle it around to see those muscles at work.

So we know that muscles help animals function. And we know that livestock animals are primarily made for food. So what part of a livestock animal is meat? (*The muscle*)

When an animal is harvested, blood circulation stops and muscles of the animal exhaust their oxygen supply. When the muscle is cut up we have different kinds of meats. We know that most of the animal is used for meat, but it is not all meat or muscle.

Pineapple Dissection Record Sheet

1. Total whole fresh pineapple weight: _____
2. Top trimming weight: _____
3. Bottom trimming weight: _____
4. Rough (1st) trimming weight: _____
5. Close (2nd) trimming weight: _____
6. Pineapple meat weight: _____

Dressing percentage of a pineapple

Whole, fresh pineapple weight: _____

Pineapple meat weight: _____

Pineapple meat weight/total weight: _____ dressing %

Strawberry Dissection Record Sheet

1. Total whole fresh strawberry weight: _____
2. Top trimming weight: _____
3. Rough trimming weight: _____
4. Strawberry meat weight: _____

Dressing percentage of a strawberry

Whole, strawberry weight: _____

Strawberry meat weight: _____

Strawberry meat weight/total weight: _____ dressing %

Cantaloupe Dissection Record Sheet

1. Total whole fresh cantaloupe weight: _____

2. Seed/inside weight: _____

3. Trimming weight: _____

4. Cantaloupe meat weight: _____

Dressing percentage of a cantaloupe

Whole, cantaloupe weight: _____

Cantaloupe meat weight: _____

Cantaloupe meat weight/total weight: _____ dressing %

Grape Dissection Record Sheet

1. Total whole fresh grape bunch weight: _____

2. Grape meat weight: _____

Dressing percentage of a grape

Grape bunch weight: _____

Grape meat weight: _____

Grape meat weight/total weight: _____ dressing %

Why are food loss and waste important?

There is a growing concern about food loss and waste throughout the United States. Consider that about 90 *billion* pounds of edible food goes uneaten each year. This costs most people about \$370 each year in food purchased that goes to waste.

As the world population continues to grow, there is a greater need to set goals and develop initiatives to reduce the amount of food wasted. Less food loss and waste can help save money, improve food access, and protect natural resources. The impacts of food loss and waste include:

Food waste is the single largest component going into municipal landfills.

- ◆ Wholesome food is sent to landfills instead of feeding people in need.

Producing, processing, transporting, preparing, storing, and disposing of discarded food uses inputs such as land, water, labor, and energy that could be available for other purposes.

What can you do?

Being mindful about planning, purchasing, protecting, preserving, storing, re-purposing, donating and recycling food can help you save money and reduce the amount of food thrown away. Visit the Eating Healthy on a Budget section of ChooseMyPlate.gov to find ways to eat healthy and manage food resources at home. Click on the links below to find ways to help you make small changes.

<https://choosemyplate-prod.azureedge.net/sites/default/files/misc/CompostGuide.pdf>

Action Points

1. Monitor the amount of food waste at your home for a week. What do you notice?
2. As a class, monitor the amount of food waste your school for a week. What do you notice?
3. How can you manage your food waste differently at home?
4. How can you manage the food waste differently at school?
5. What steps need to be taken to address the management of food waste in your home and school?
6. What obstacles do you see in addressing these concerns?

For more lessons on Food Waste consider:

<http://www.familyconsumersciences.com/2017/11/teaching-about-food-waste/>

Backyard Composting

IT'S ONLY NATURAL



Composting is nature's way of recycling organic materials back into the soil in order for the cycle of life to continue. The billions of living organisms in healthy soil transform dead plants into vital nutrients for new plant growth. Since healthy plants come from healthy soil, one of the best ways you can build healthy soil in your garden and lawn is by using compost. You can easily make compost with landscape trimmings and food scraps in your own backyard. With a small investment in time, you can improve the health and appearance of your yard, save money on fertilizers and mulch, all while preserving natural resources and protecting the health of your family and pets.

Why compost?

- ❖ **It's earth-friendly:** Food scraps and yard waste make up 20-30% of the waste stream. Making compost keeps these materials out of landfills, where they take up precious space and release methane, a greenhouse gas 21 times more potent than carbon dioxide emissions in the atmosphere.
- ❖ **It benefits your yard:** Compost improves soil structure and texture, increases the soil's ability to hold both water and air, improves soil fertility, and stimulates healthy root development in plants.
- ❖ **It's easy:** You can start with just leaves and grass, then work your way towards composting your food scraps.
- ❖ **It saves money:** Adding compost to your garden can reduce or eliminate the need to buy chemical fertilizers or compost. If you pay for the amount of trash hauled, composting can also cut down on your trash costs.



What do I need to do to make compost?

- A Bin or Pile?** Some people start with an easy pile, and then move to a bin when they're ready. You can give your pile some structure with chicken wire, snow fencing, or by nailing scrap wood together to make a four-sided box. A pile works great for just leaves and grass clippings, but when you want to incorporate food waste, it's time to use a bin to prevent rodents. Closed-top bins include turning units, stacking bins, and bins with flip tops. Many communities provide their residents free or discounted bins to encourage backyard composting. Bins can also be purchased from retail or mail order businesses. Take the time to consider your options and then select a bin or pile to fit your needs.
- B Space.** Select a dry, shady, or partly shady spot near a water source and preferably out of sight for your compost pile or bin. Ideally, the compost area should be at least three feet wide by three feet deep by three feet tall (one cubic yard). This size provides enough food and insulation to keep the organisms in the compost warm and happy and working hard. However, piles can be larger or smaller and work just fine if managed well.
- C Browns for carbon, greens for nitrogen, air for organisms, and water for moisture.**
 - Brown material provides carbon and includes:
 - ❖ Paper, like shredded pieces of paper, cardboard, and paper rolls,
 - ❖ Dry yard waste, like dry leaves, small branches, and twigs, straw, sawdust, and used potting soil.
 - Green material provides nitrogen and includes:
 - ❖ Wet yard waste like fresh grass clippings, green leaves, and soft garden prunings
 - ❖ Food scraps like vegetable and fruit peels, coffee grounds, and tea bags.
- Vermicomposting** is a method of composting using a special kind of earthworm known as a red wiggler (*Eisenia fetida*), which eats its weight in organic matter each day. Vermicomposting is typically done in a covered container with a bedding of dirt, newspaper, or leaves. Fruit and vegetable scraps can then be added as food for the worms. Over time, the food will be replaced with worm droppings, a rich brown matter that is an excellent natural plant food. Vermicomposting requires less space than normal composting methods, and is therefore ideal for classrooms, apartments, and high-density urban areas.



How do I make compost?

- 1 Add your brown and green materials (generally three parts browns to one part greens), making sure larger pieces are chopped or shredded. The ideal compost pile contains browns and greens (of varying sizes) placed in alternate layers of different-size particles.
- 2 Mix grass clippings and green waste into the pile and bury fruit and vegetable waste under 10 inches of compost material.
- 3 As materials breakdown, the pile will get warm and on cold days you may even see some steam.
- 4 Every time you add to the pile, turnover and fluff it with a pitchfork to provide aeration, unless your bin has a turner.
- 5 When material at the bottom is dark and rich in color, with no remnants of your food or yard waste, your compost is ready to use. There may be a few chunks of woody material left; these can be screened out and put back into a new pile. The resulting compost can be applied to lawns and gardens to help condition the soil and replenish nutrients. Compost should not be used as potting soil for houseplants because it may still contain vegetable and grass seeds.



Troubleshooting Your Pile

Problem:	Cause	Solution:
Rotten egg smell	Insufficient air or too much moisture	Turn pile and incorporate coarse browns (sawdust, leaves)
Ammonia smell	Too much nitrogen	Incorporate coarse browns (sawdust, leaves)
Pile does not heat up or decomposes slowly	Pile too small	Add more organic matter
	Insufficient moisture	Turn pile and add water
	Lack of nitrogen	Incorporate food waste, grass clippings, or manure (chicken, rabbit, cow, horse)
	Not enough air	Turn pile
	Cold weather	Increase pile size or insulate with straw or a tarp

How do I get started?

What to add

Greens:

- Uncooked or cooked fruits and vegetables
- Bread and grains

Browns:

- Cotton or wool rags
- Dryer and vacuum cleaner lint
- Eggshells
- Nut shells
- Fireplace ashes (from wood burning)
- Coffee grounds and filters
- Grass clippings
- Sawdust
- Hay and straw
- Yard trimmings (e.g., leaves, branches, twigs)
- Houseplants
- Used potting soil

- Paper tea bags with the staple removed, if there is one.
- Hair and fur
- Chicken, rabbit, cow, horse manure

- Wood chips
- Leaves
- Shredded newspaper
- Cardboard rolls
- Clean paper

What not to add

- Aluminum, tin or other metal
- Glass
- Dairy products (e.g., butter, milk, sour cream, yogurt) & eggs
- Fats, grease, lard, or oils
- Greasy or oily foods
- Meat or seafood scraps
- Pet wastes (e.g., dog or cat feces, soiled cat litter)
- Soiled diapers
- Plastic

- Stickers from fruits or vegetables (to prevent litter)
- Black walnut tree leaves or twigs
- Yard trimmings treated with chemical pesticides
- Roots of perennial weeds
- Coal or charcoal ash
- Firestarter logs
- Treated or painted wood



Vocab Challenge

Objective: Students will research many vocabulary terms to gain knowledge about pork, beef, lamb and poultry.

CCSS: ELA.Literacy.L.7.3; L.7.4.C; RI.7.4; RI.7.10; SL.7.1; W.7.6; W.7.9

Reading Suggestions:

- Beef Ag Mag; Livestock Ag Mag; Pork Ag Mag; Sheep Terra Nova; Poultry Terra Nova

Beef Vocabulary

Beef: the meat that comes from beef cattle. Hamburger, steak and brisket are some example of beef.

Bull: a male cow used for breeding.

By-products: all products, except for meat, that come from the animal.

Calf: cattle less than one year old.

Clod Heart: economical and less tender cut of meat from shoulder of animal.

Cow: a female cow that has given birth to a calf.

Cud: partially digested food from a ruminant animal which is regurgitated to the mouth for further chewing.

Delmonico: cut of meat (typically ribeye) originating from menu of Hotel Delmonico in New York City.

Heifer: a female cow that has not produced a calf.

Ruminant: an animal with a multi-chambered stomach.

Steer: a male cow not used for breeding.

Poultry Vocabulary List

Broiler/Fryer: a chicken bred for meat.

Drummett: irregular shaped portion of the wing attached to the chicken

Gizzard: a part of a bird's stomach that contains tiny stones, which helps them grind up food for digestion.

Hen: a female chicken or turkey.

Poult: a young turkey.

Rooster: a male chicken.

Tom: a male turkey.

Wingette: middle part of wing with two thin bones and tender meat.

Wingtip: last part of the wing, typically consumed for skin

Pork Vocabulary

Barrow: a male pig not used for breeding.

Boar: a male pig used for breeding.

Boston Butt: also known as pork butt, from the upper front shoulder of animal.

Farrow: to give birth to piglets.

Gilt: a female pig that has not given birth to piglets.

Jambon: ham similar to prosciutto originating from southwestern France.

Jowl: cured and smoked cheek of pork; traditionally a soul food staple

Litter: a group of piglets born at the same time.

Monogastric: having only one stomach (non-ruminant).

Prosciutto: Italian dry cured ham.

Sow: a female pig used for breeding.

Wean: when a piglet is big enough to eat on its own and doesn't nurse from the sow anymore.

Sheep Vocabulary List

Ewe: a female sheep of any age.

Fleece: the outer covering of wool on a sheep.

Flock: a group of sheep that live, travel or feed together.

Lamb: baby sheep; the meat of a sheep that is usually 4-6 months old is also referred to as lamb.

Lanolin: an oil extracted from sheep wool and used in cosmetics and lubricants.

Mutton: meat of an adult sheep.

Noisette: small medallion from eye of loin; similar to meat of a T-bone without the bone

Ram: a male sheep used for breeding.

Shepherd: a person who takes care of sheep (also called a sheepherder).

Wether: a male sheep not used for breeding.

Wool: fiber covering on a sheep.

Speaking with your Mouth Full

“Eating is an agricultural act.” — **Wendell Berry**

“Work is the meat of life, pleasure the dessert.”—**B. C. Forbes**

“At the base level, a burger is a piece of meat and a bun with something on it. It's simple but it seems to make a lot of people happy.”

—**Danny Meyer**

“A man loves the meat in his youth that he cannot endure in his age.”

— **William Shakespeare**

“Red meat is not bad for you. Now blue-green meat, that's bad for you!”

— **Tommy Smothers**

“I unfortunately still crave chicken McNuggets and bacon, which is the meat candy of the world.”

— **Katy Perry**

“Courtship is like simmering mutton. You cook for hours and hours to taste the soft meat. It doesn't happen in two seconds! “

—**Nargis Fakhri**

“The difference between involvement and commitment is like ham and eggs. The chicken is involved; the pig is committed.”

—**Martina Navratilova**

“I was eating in a Chinese restaurant downtown. There was a dish called Mother and Child Reunion. It's chicken and eggs. And I said, I gotta use that one.”

— **Paul Simon**

“The best comfort food will always be greens, cornbread, and fried chicken.”

—**Maya Angelou**

“I like chicken a lot because chicken is generous - that is to say, it's obedient. It will do whatever you tell it to do.”

—**Maya Angelou**

“You don't want to ke a steady diet of just lettuce. You don't want to make a steady diet of fried chicken.”— **Paula Deen**

“Winter blues are cured every time with a potato gratin paired with a roast chicken.”

—**Alexandra Guarnaschelli**

“As for those grapefruit and buttermilk diets, I'll take roast chicken and dumplings.”

—**Hattie McDaniel**

“The key to everything is patience. You get the chicken by hatching the egg, not smashing it.”

—**Arnold H. Glasow**

“I am fond of pigs. Dogs look up to us. Cats look down on us. Pigs treat us as equals.”

—**Winston Churchill**

“Pigs are smarter than dogs, and both are smarter than Congress.”— **Elayne Boosler**

“It's better to be a lion for a day than a sheep all your life.”— **Elizabeth Kenny**

“Without tradition, art is a flock of sheep without a shepherd. Without innovation, it is a corpse.”

— **Winston Churchill**

“If the freedom of speech is taken away then dumb and silent we may be led, like sheep to the slaughter.”— **George Washington**

“We herd sheep, we drive cattle, we lead people. Lead me, follow me, or get out of my way.”

— **George S Patton**

“After all, the wool of a black sheep is just as warm.”— **Ernest Lehman**

“It is the duty of a good shepherd to shear his sheep, not to skin them.”— **Tiberius**

“Mustard's no good, without roast beef.”— **Chico Marx**

“Roast beef, medium, is not only a food. It is a philosophy.”— **Edna Ferber**

“The feeling of friendship is like that of being comfortably filled with roast beef; love, like being enlivened with champagne.”— **Samuel Johnson**

“A hot dog at the game beats roast beef at the Ritz.” —**Humphrey Bogart**

“Let food be thy medicine and medicine be thy food.” — **Hippocrates**

“The only time to eat diet food is while you're waiting for the steak to cook.”

— **Julia Child**

“To eat is a necessity, but to eat intelligently is an art.”

— **François de La Rochefoucauld**

“To a hungry person, every bitter food is sweet. When the preferable is not available, the available becomes preferable!”

— **Israelmore Ayivor**

“Peanut butter is the pate of childhood.”

— **Florence Fabricant**

Original, in French: “La bonne cuisine est la base du véritable bonheur.”

English: “Good food is the foundation of genuine happiness.”

— **Auguste Escoffier**

Common Core: CCSS.ELA-Literacy.RI.4.3; RI.4.4; RI.4.5; RF.4.3a; SL.4.1; W.4.2; W.4.6; W.4.7; W.4.8

Next Generation Science Standards: Interdependent Relationships in Ecosystems: 3-LS4-4 Life Cycles & Traits: 3-LS3-2 Earth's Systems: 5-ESS3-1

Materials Needed: · Food Quotes Handout (Speaking with your Mouth Full).

Directions:

1. Using the provided quotes on the Food Quotes Handout (Speaking with your mouth full), cut quotes into strips and distribute to students.

2. Students will read the food quote and write a paragraph about the quote.

Some/all of the following questions should be addressed:

What does the quote mean to me?

What did this quote mean to the author?

Under what circumstances did the author write this quote?

Has this quote withstood the passage of time? Why or why not?

Is this quote appropriate in today's world? Why or why not?

PIECES AND PARTS

April 2018 Chinese Tariff on Pork

Pork products		
121	Fresh or cold boned pig forelegs, hindquarters and their meat	25%
122	Other fresh or cold pork	25%
123	Other frozen whole head and half pork	25%
124	Frozen bone forelegs, pigs' legs and their meat	25%
125	Other frozen pork	25%
126	Frozen pork liver	25%
127	Other frozen pork chops	25%

In April 2018, China in a Trade and Tariff standoff with the United States, announced the above tariff increases on pork products being imported to China from the U.S. When most American citizens think of pork, they think bacon or pork chops. Examine the list, and note what you find unusual about the pork products being taxed.

As a class research the following:

*What are the drawbacks of taxes and tariffs?

*Using the back of each poster, investigate the by-products and co-products of each species? What did you learn about each? Which products surprised you? How were each species used in those products?

*Watch the TED Talk by Christien Meindertsma: How pig parts make the world turn, and read her book *Pig 05049*. What have you learned about Pork and Pork By Products?

*Next investigate Chinese uses of pork liver. What recipes are you willing to try?

*What other agricultural products face export taxes and tariffs? What impact does this have on the American Farm economy?

We're #1?

World Beef Consumption

World Beef Consumption By Country				
World		129,472,923,360	7,432,663,275	17.4
Rank	Country	Consumption	Population	Per Capita
1	Uruguay	427,696,280	3,444,071	124.2
2	Argentina	5,269,041,800	43,847,277	120.2
3	Hong Kong	839,960,220	7,346,248	114.3
4	United States	25,714,687,680	324,118,787	79.3
5	Brazil	16,532,445,380	209,567,920	78.9

<http://beef2live.com/story-world-beef-consumption-per-capita-ranking-countries-0-111634>

World Mutton Consumption

Rank	Country	Pounds per capita
1	Australia	19
2	Kazakhstan	18
3	Algeria	16.1
4	Uruguay	14.8
5	Saudi Arabia	11.9
36	United States	.7

<https://data.oecd.org/agroutput/meat-consumption>.

World Chicken Consumption

<https://www.tasteinc.com/blog/five-countries-consume-chicken/>

Rank	Country	Pounds per capita
1	Kuwait	156.08
2	Israel	149.69
3	Hong Kong	120.15
4	Brunei	119.71
5	Bahamas	119.49
6	Jamaica	116.18
7	United States	116.18

World Pork Consumption

World Per Capita Pork Consumption – 2016 (lbs., carcass weight)

Country	2011	2012	2013	2014	2015	2016
1Montenegro*	99.4	102.9	106.4	162.7	88.6	109.4
2Serbia*	84.6	79.2	83.1	81.9	81.4	105.5
3China/HK/Macau	84.3	88.2	90.4	93.3	90.1	88.7
4European Union	91.5	89.6	88.4	92.9	89.9	87.0
5Taiwan	86.9	85.5	84.3	82.6	87.5	84.7
6Korea, South	65.8	68.1	71.4	78.1	81.4	82.0
7Belarus	86.5	95.9	95.0	79.8	73.8	77.6
8United States	58.1	58.3	60.4	59.8	64.3	64.5
9Vietnam	55.0	53.7	56.9	56.4	56.3	61.3

<https://www.pork.org/facts/stats/u-s-pork-exports/world-per-capita-pork-consumption/>

PROJECT!

Research Project

What can we learn about the cultures of other countries based on what they eat?

Select a country and a species, and research and answer the following as a report, PowerPoint, Prezi or display board.

Describe the population of the country including:

Population

Terrain

Climate

Socio-economic status

Famous cities

Famous Citizens

Form of Government

Average income

Birth and death rates

- ◆ Research traditional dishes and whether this is an everyday meal or a special meal
- ◆ Describe the meal including main dish and side dishes.
- ◆ Design a menu that showcases the influence of the country and heritage.

Hungry Planet!

Grade Level: 4-8

Objective: After completing this activity, students will have explored, compared and contrasted the nutritional habits of families all around the country. They will also be able to investigate how weather, landscape and soil types affect agriculture all around the world.

Common Core State Standards:

Language Arts: CCSS.ELA-Literacy.RI.2.1-4.1; RI.2-6.7; RI.4.2; RI.4.3; RI.4.6; RI.4.7; RF.4.4; W.4.3; W.4.7; SL.4.2

Next Generation Science Standards:

Life Cycles & Traits: 3-LS3-2

Weather & Climate: 3-ESS2-2

Social Science Standards:

SS.IS.1-7.3-5; SS.IS.1-8.6-8; SS.CV.2-3.4; SS.CV.4.5; SS.CV.1-5.6-8; SS.G.3-4.5; SS.G.1-4.6-8; SS.EC.2.4; SS.EC.1-2.5; SS.EC.1-3.6-8; SS.EC.FL.3.4; SS.EC.FL.1.6-8

Suggested Reading Materials:

IAITC Nutrition Ag Mag

[Hungry Planet: What The World Eats](#) by Peter Menzel & Faith D’Aluisio | ISBN-13: 978-0984074426

[What the World Eats](#) by Peter Menzel & Faith D’Aluisio | ISBN-13: 978-1582462462

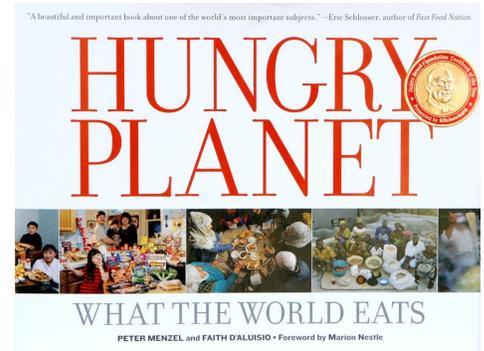
Directions:

1. Have the students pick one of the countries in the book (any country but the United States). Give the students a photocopy of the picture of their country from the book.
2. Students should investigate the country before writing a report.
3. Have the students fill in the blanks of the thinking triangle on page 29, which will be included in their report.
4. Have the students include agricultural aspects such as weather/climate, topography/landscape, soil types, etc. in their report. Each student should use these findings in their discussion of why the people of their assigned country can grow specific foods and why they can’t grow other types of food. Students should also discuss nutritional aspects. Does the food purchased fulfill all the nutritional needs of the people in that country?
5. After all students have completed their report, discuss how the United States differs from other countries. What kind of land and climate do we have? What types of food do we buy? How much money do American families spend on food?

Lesson Extender:

Have students compare and contrast different families from the book. They could compare types of food eaten, how much money was spent on food for the week, obesity rates, birth/death rates, etc.

Or have the students analyze the *Hungry Planet* photos by completing the “Thinking Triangle” on the following page.



Adapted from Barat Education

“The Thinking Triangle”

Directions: Use the thinking triangle and record your thoughts about the image.

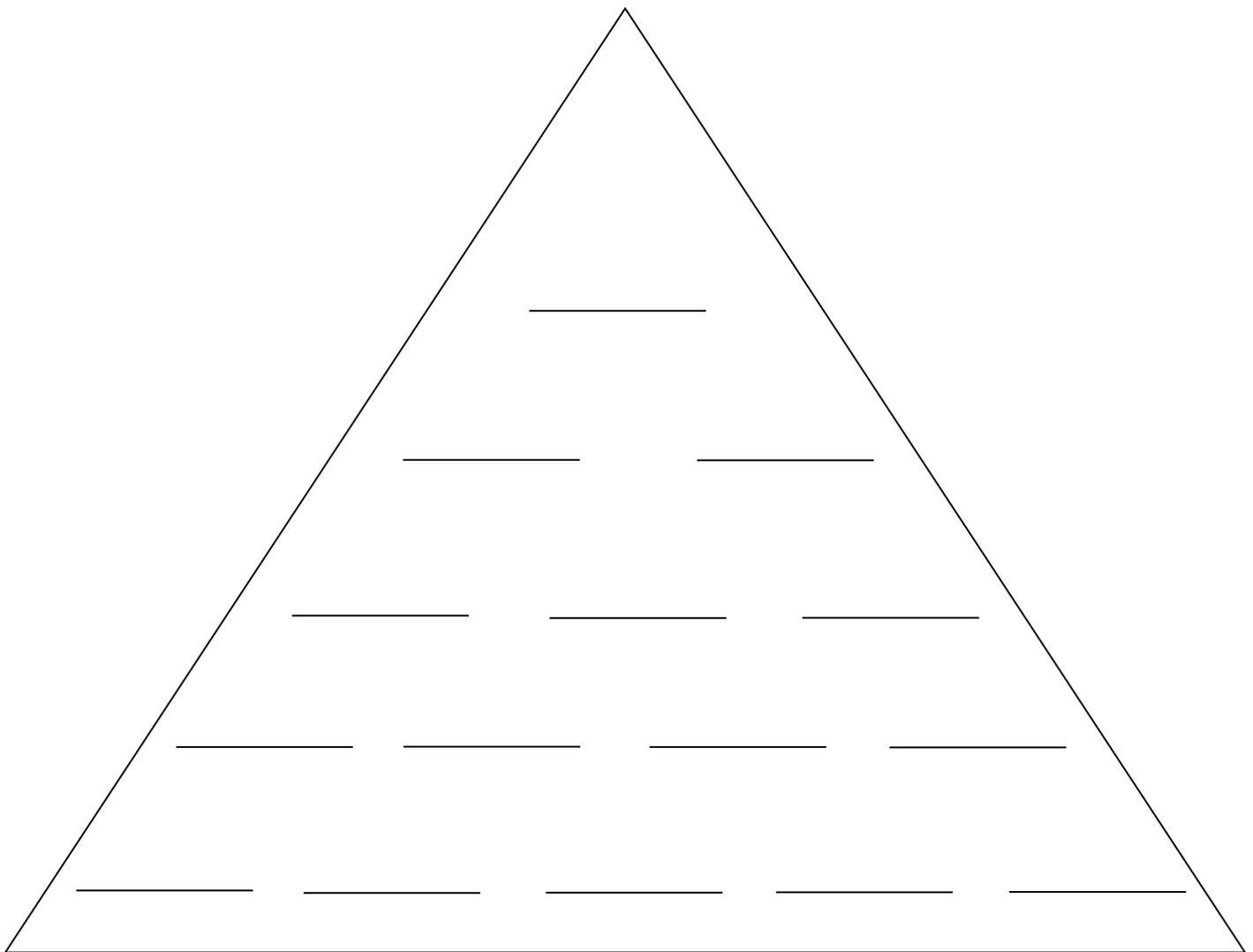
Row 1: (Who, What?) Who or what does this image represent? Describe it in one word.

Row 2: (When?) Think about the time period this image represents and describe it in two words.

Row 3: (Where?) Think about the place shown in the image and describe it in three words.

Row 4: (How?) Think of a how question that this image answers and write the answer in four words.

Row 5: (Why?) Think of a why question that this image answers and write the answer in five words. xFoundation



Find additional materials and resources at <http://Barat-TPS.org> and <http://PrimarySourceNexus.org>

Clothesline Timeline

Grade: 3-12

Brief Description

Research/create a timeline of the history of beef cattle, sheep, chickens and sheep

Objectives

Students will improve their research skills and create a timeline as a group.

Materials Needed

- Library and/or Internet resources about the history of species
- IAITC Cuts of Meat Poster
- Art supplies for creating timelines

Standards

ELA: NL-ENG.K-12.8 ;NL-ENG.K-12.9; NL-ENG.K-12.12

MATHEMATICS: NM-REP.PK-12.3

NGSS: NSS-G.K-12.1

Lesson Plan

In this lesson, students use library and/or Internet resources to research the history of a specific meat species.. Students might work in small groups to create timelines showing that history.

This lesson offers an opportunity to teach media literacy skills. Because students use a variety of different resources, they might find contradictory information. You can introduce the concept of media literacy by sharing with students the IAITC Cuts of Meat. Other resources including national commodity associations as well as USDA Consumption Charts can be used. As students create their timelines, they might consider posting only information they can verify by more than one source.

Assessment

Students will rate each timeline based on completeness of research, display of information, neatness, and creativity.

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