

EXPLORE



Texas 4-H Agriculture Product Identification



texas4-h.tamu.edu

The members of Texas A&M AgriLife will provide equal opportunities in programs and activities, education, and employment to all persons regardless of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation or gender identity and will strive to achieve full and equal employment opportunity throughout Texas A&M AgriLife.



EXPLORE

TEXAS 4-H FOODS & NUTRITION



Description

The Texas 4-H Explore series allows 4-H volunteers, educators, members, and youth who may be interested in learning more about 4-H to try some fun and hands-on learning experiences in a particular project or activity area. Each guide features information about important aspects of the 4-H program, and its goal of teaching young people life skills through hands-on experiences. Additionally, each guide contains at least six learning experiences, which can be used as a project guide, or as activities for six different 4-H

meetings.

Purpose

Texas 4-H is designed to develop the youth of our state into productive adult citizens. The 4-H Program uses a non-formal educational process of engaging youth in an "learning by doing" process. This includes hands-on opportunities, participation in workshops and clinics conducted by volunteer leaders or professionals, as well as competitive experiences which allow 4-H members to demonstrate the knowledge they have gained. Through this entire process, the youth are learning key life skills such as working with others, teamwork, cooperation, and goal setting. Through all experiences, youth get to interact with adult volunteers and county Extension agents.

What is 4-H?

4-H members across the nation are responding to challenges every day in their communities and their world.

As the youth development program of the Cooperative Extension System of land-grant universities, 4-H is the nation's largest youth development organization, empowering six million young people throughout the United States. Cooperative Extension of 1862 and 1890 land-grant universities provide leadership to engage young people in 4-H in all 3,007 counties of the United States. The impact of the Cooperative Extension partnership is profound, bringing together National Institute of Food and Agriculture of USDA, land grant universities and county government to resource learning opportunities for youth.

Through America's 110 land-grant universities and its Cooperative Extension System, 4-H reaches every corner of our nation—from urban

neighborhoods to suburban schoolyards to rural farming communities. With a network of more than 6 million youth, 600,000 volunteers, 3,500 professionals, and more than 25 million alumni, 4-H helps shape youth to move our country and the world forward in ways that no other youth organization can.

Texas 4-H

Texas 4-H is like a club for kids and teens ages 5-18, and it's BIG! It's the largest youth development program in Texas with more than 550,000 youth involved each year. No matter where you live or what you like to do, Texas 4-H has something that lets you be a better you!

You may think 4-H is only for your friends with animals, but it's so much more! You can do activities like shooting sports, food science, healthy living, robotics, fashion, and photography.

Look for 4-H clubs at your school, an after-school program, a community center, or even on a military base or through the reserves for military families.

Texas 4-H is part of the Texas A&M AgriLife Extension Service and the Texas A&M System. Founded in 1908, 4-H is the largest youth development program in Texas, reaching more than 550,000 youth each year.

The 4-H Motto and Pledge

"To Make the Best Better!"

I pledge: My HEAD to clearer thinking, My HEART to greater loyalty, My HANDS to larger service and My HEALTH to better living, For my Club, my Community, my Country, and my world.

Participating in 4-H

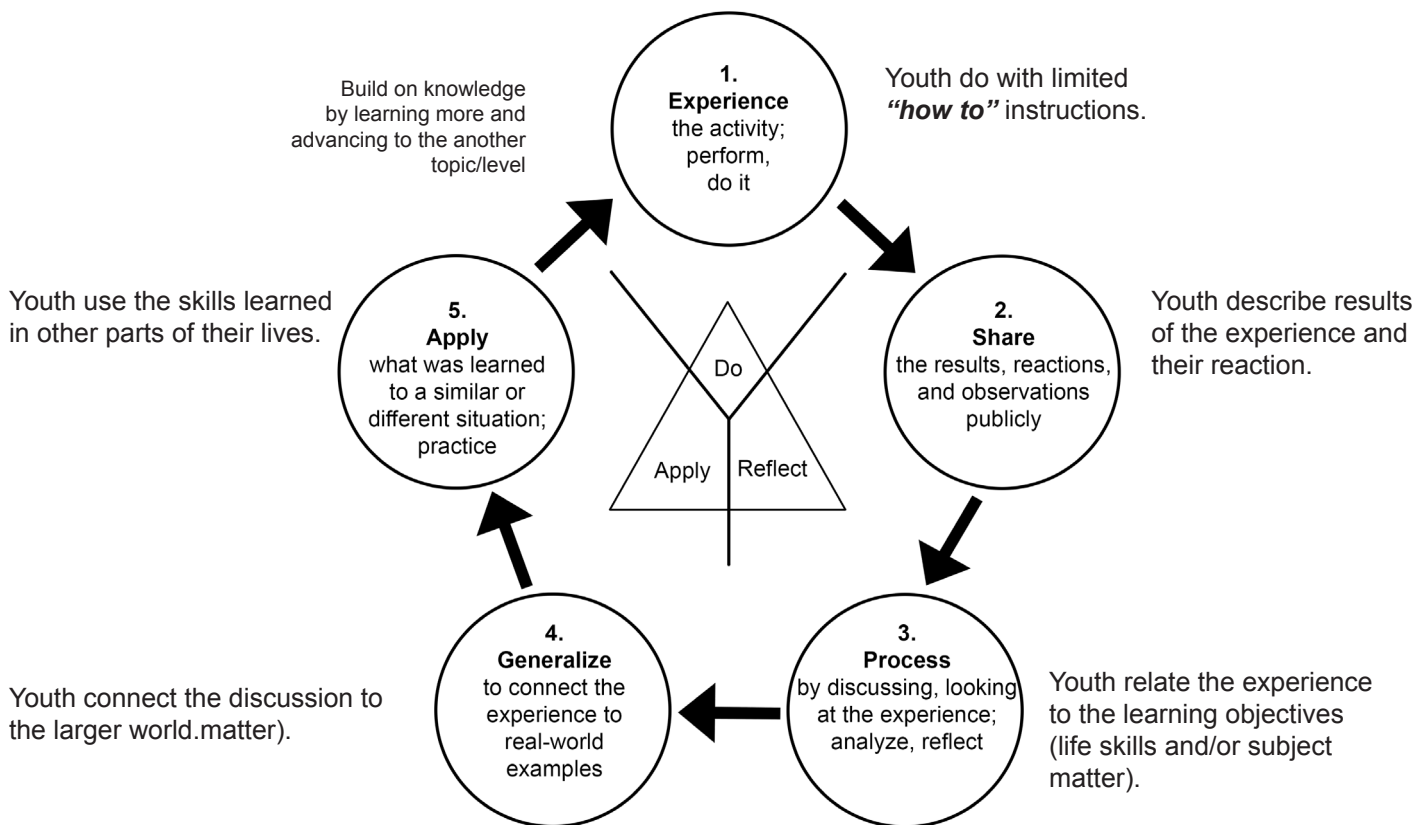
4-H is a great program because it provides options for young people to participate. From a 4-H club located in your community, a SPIN club that focuses on one particular project area, or participating in 4-H through your classroom at school, 4-H allows youth to learn in many different environments. If you are interested in joining 4-H, contact your County Extension Office and ask for a list of the 4-H clubs in your area. If you are a school teacher/educator and would like to use 4-H curriculum or these project guides in your classroom, contact your Extension Office as well for assistance.



4-H “Learning by Doing” Learning Approach

The Do, Reflect, Apply learning approach allows youth to experience the learning process with minimal guidance from adults. This allows for discovery by youth that may not take place with exact instructions.

EXPLORE THE CONTENT Introduction of the topic, overview and exploration of content, and review of objectives





Lesson 1

Beef 2



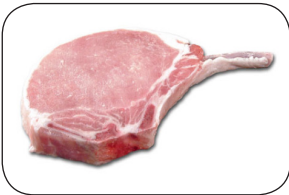
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Putting it All Together 23

Developed by:
Jana Barrett
Meredith Miller
Cory Hundl

EXPLORE
Agriculture Product
Identification

Beef Primal/Sub Primal Cuts



EXPLORE THE CONTENT:

Understanding which beef product to buy in a store can be challenging. There are a wide variety of options to choose from, so which is the best? To answer this question, it helps to know exactly what you are looking for in terms of characteristics, cost and cooking methods.

There are 8 basic (primal) cuts to a steer, the type of cow typically used for meat, because of the higher quality cut of meat. The cuts from a steer are chuck, rib, loin, round, flank, plate, brisket and shank. From these primal cuts, there are also sub-primal cuts. What one generally purchases from the local grocery is considered a portion cut of meat.

TIME:

30-45 minutes depending on the activity

MATERIALS NEEDED:

- Pencils / pens
- Meat Flash Cards
- Meat ID Poster

OBJECTIVES:

The 4-H member will:

- Learn about the eight main cuts (primal) of beef
- Learn to identify sub-primal cuts and their origin
- Learn characteristics of the most expensive/least expensive cuts

Understanding where the portion cuts originate is beneficial in helping to determine the portion cut that is most economical. Portion cuts which derive from the center of the steer, which include the rib and loin areas, are the most expensive cuts of meat. They are the most expensive because they are considered the most tender portion of the steer. Cuts which come from the chuck and brisket area are typically tougher meat due to the muscling in these areas, required added moisture, and longer cooking times.

DO:

Know Your Beef Cuts - Matching Game

1. Group youth in pairs and provide them with a copy of the parts of a cow and a separate set of retail cuts
2. Have the participants match the retail cut name to the location where it derives from the cow.
3. Discuss responses as a group with a focus on cost and tenderness.

Retail Cut Identification Game

1. Create flashcards using the cut charts and have youth match with them with information about retail cuts
2. Discuss responses as a group

Purchasing Decisions

- Give youth different scenarios such as which meat cuts are most affordable, best for oven roasting, grilling or stir fry, etc. and have them identify the best options.
- Use <https://www.beefitswhatsfordinner.com/cuts/collection> to develop scenarios
- Demonstrate how to read a meat label and clarify that one usually purchases the product by the pound
- Discuss responses as a group

**REFLECT:**

- What beef cuts are most affordable to families?
- What beef cuts are the most tender?
- What items do you most eat as a family?
- What new beef cuts did you learn about?

APPLY:

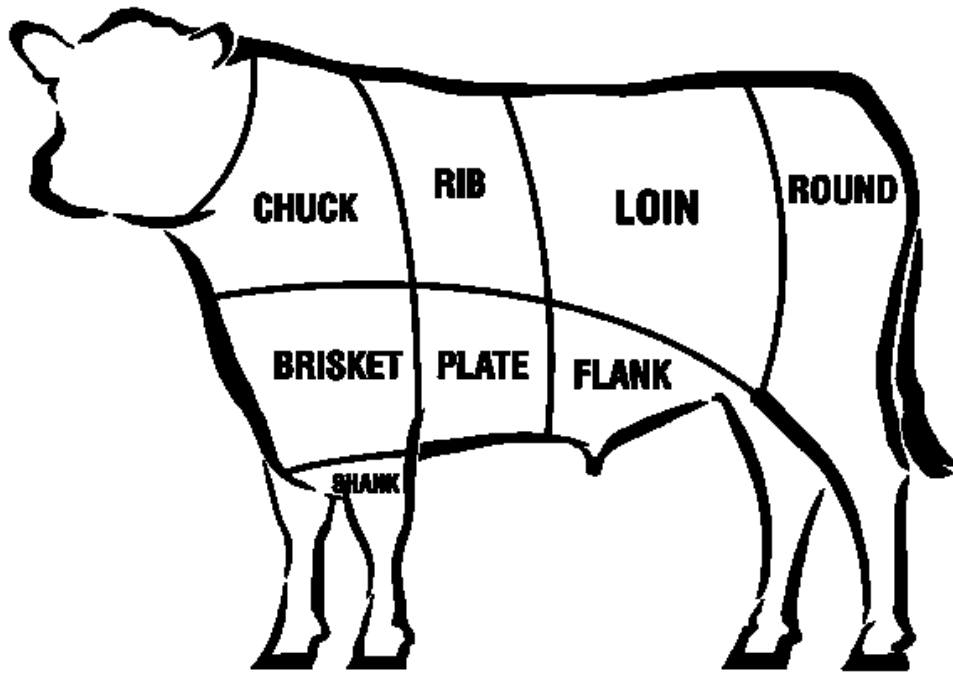
- Do you feel more comfortable shopping for beef?
- What new beef cut will you encourage your family to try?

REFERENCES:

References below have poster resources that can be printed. You may want to reach out to the various organizations to inquire about ordering a set.

- <http://www.certifiedangusbeef.com/cuts/Default.aspx>
- <https://aggiemeat.tamu.edu/4-h-ffa-retail-identification-cuts/>
- <https://www.beefitswhatsfordinner.com/cuts>
- <https://www.beefitswhatsfordinner.com/cuts/cut-charts>
- <http://www.recipetips.com/kitchen-tips/t--359/beef-read-the-label.asp>

Know Your Beef Cuts - Matching Game



Retail Cuts

<u>Chuck</u>	<u>Brisket</u>
<u>Rib</u>	<u>Plate</u>

Loin

Flank

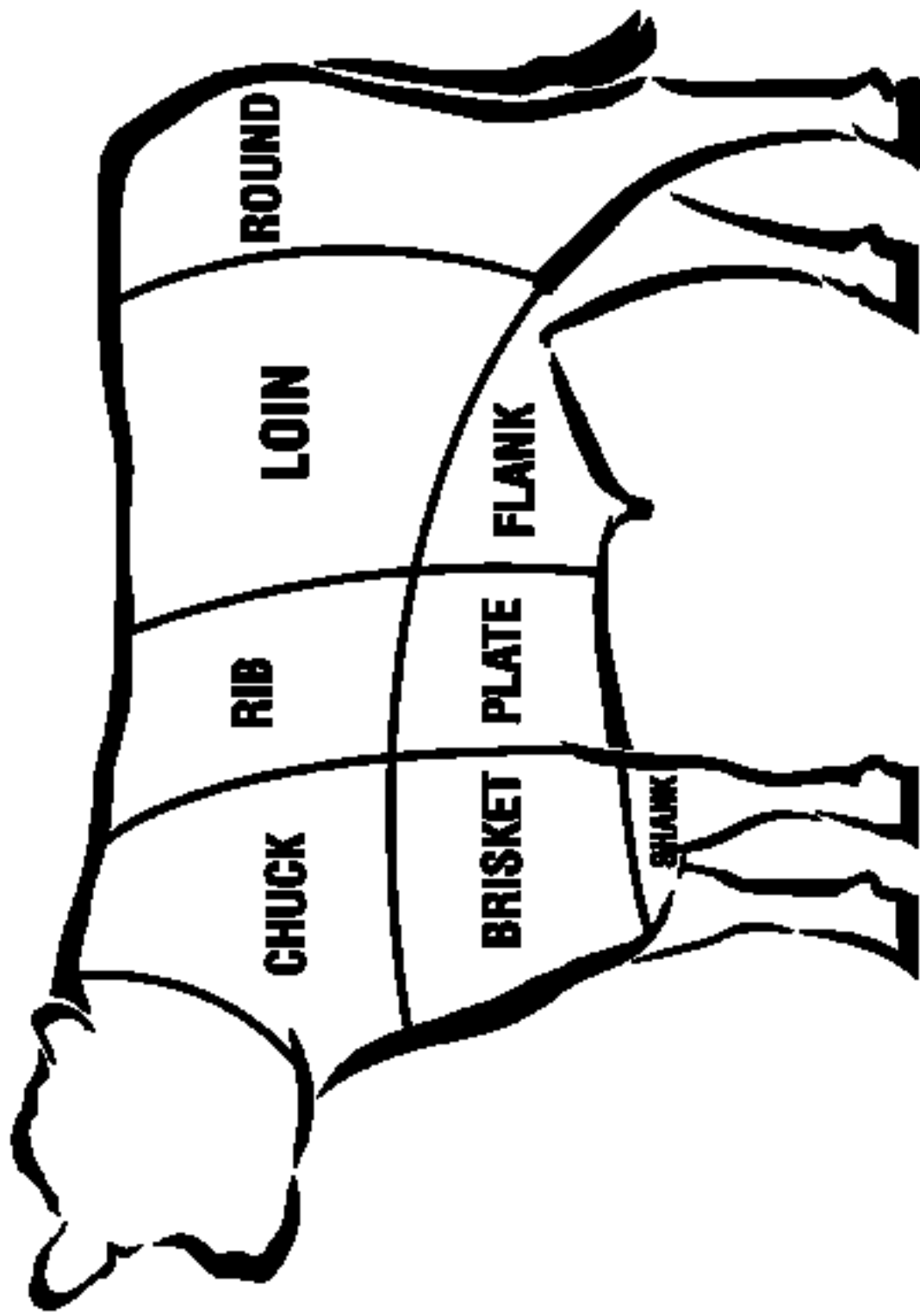
Round

Shank

Other

Have the participants write the retail cut names below in the box on the retail cuts chart associated with where it originates. Or, print them and place them in the correct location on the calf printout.

Brisket Point	Stir-fry - Stew meat
Sirloin	Flat Iron
Porterhouse Steak	Filet Mignon
Round Steak	Back Ribs
Skirt Steak	New York Strip
Chuck Roast	T-Bone Steak
Ribeye	Rump Roast
Ground Beef	Denver Steak
Flank Steak	Short Ribs
Cubed Steak	Beef Kabob
Prime Rib	London Broil - Top Round
Shoulder Roast	Top Sirloin
London Broil - Bottom Round	Brisket Flat



ROUND

LOIN

RIB

CHUCK

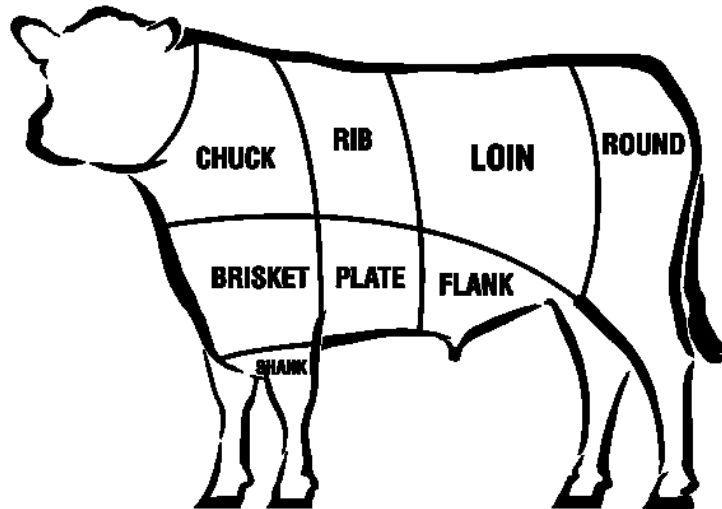
FLANK

PLATE

BRISKET

SHANK

Answer Key for Matching Game

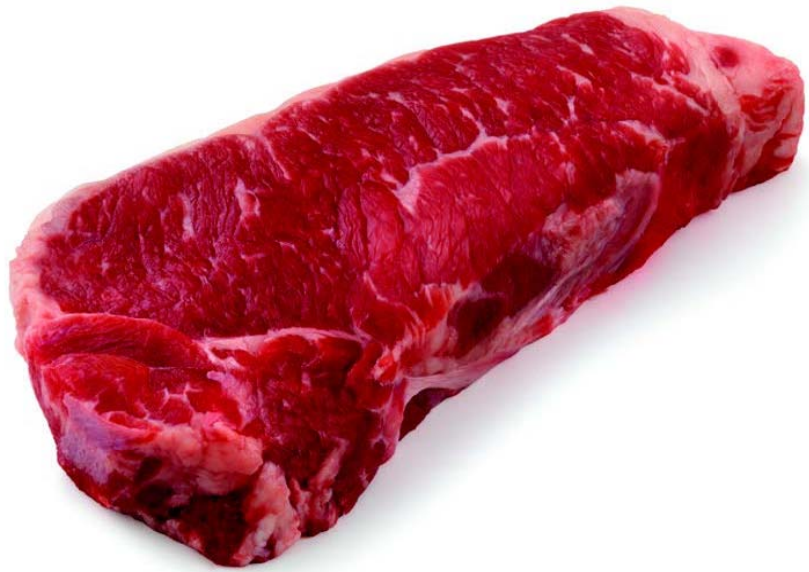


1. **Chuck**
Flat Iron
Chuck roast
Denver Steak
Shoulder Roast
Short ribs
2. **Rib**
Ribeye
Prime Rib
Back ribs
3. **Loin**
New York Strip
Tenderloin
T-bone steak
Porterhouse Steak
Sirloin steak
Top Sirloin steak
Filet mignon
4. **Round**
Rump roast
Round steak
London broil – Top Round
London broil – Bottom Round
5. **Brisket / Shank**
Brisket flat
Brisket point
6. **Plate**
Skirt steak
Short ribs
7. **Flank**
Flank steak
8. **Other**
Ground beef
Cubed steak
Stir-fry beef
Kabob



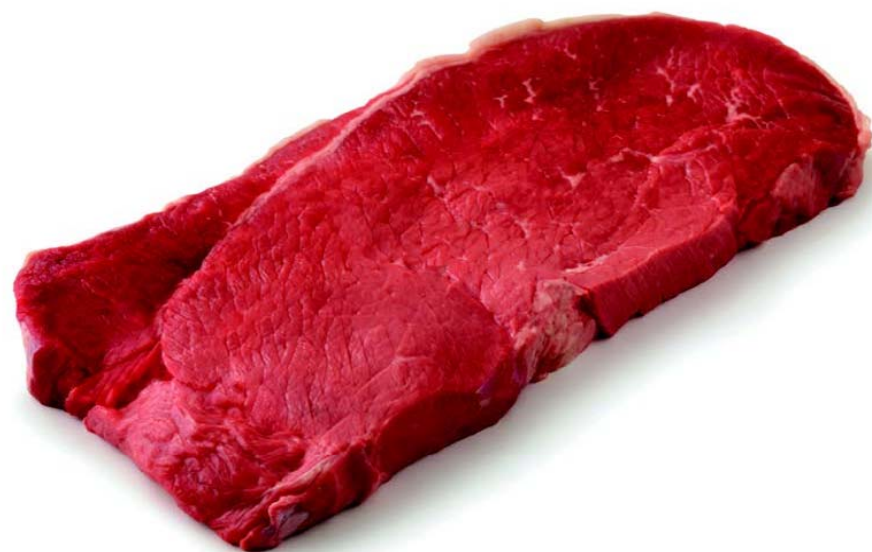










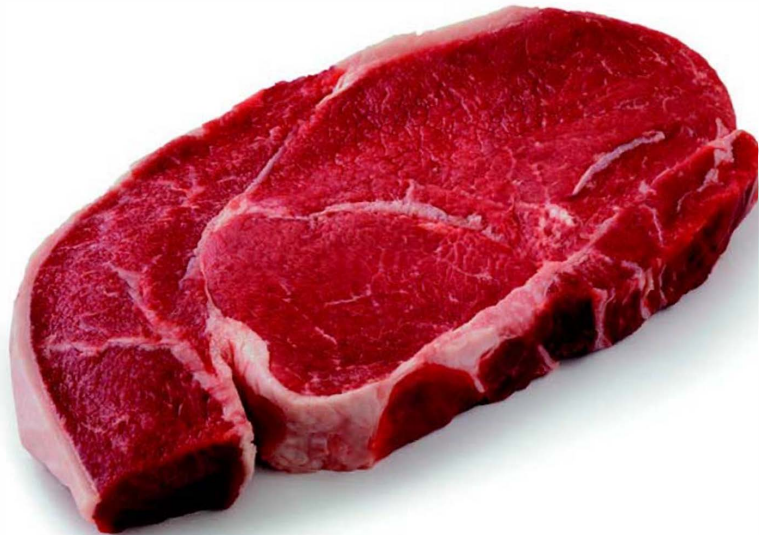




Back Ribs



Brisket Flat



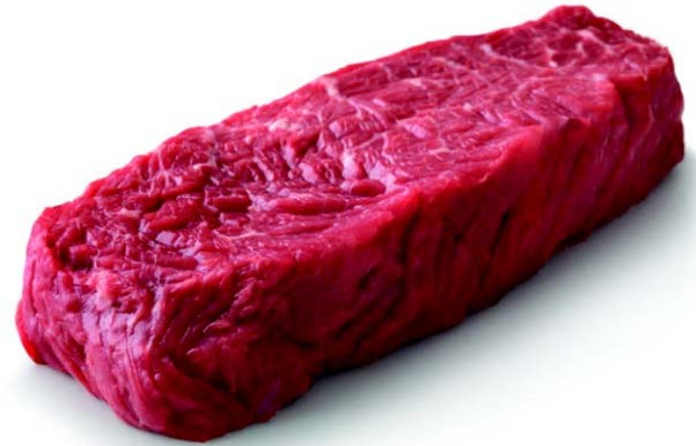
Top Sirloin



Bottom Round - London Broil



Chuck Roast



Denver Steak



Brisket Point



Cubed Steak



Flank Steak



Ground Beef



Filet Mignon



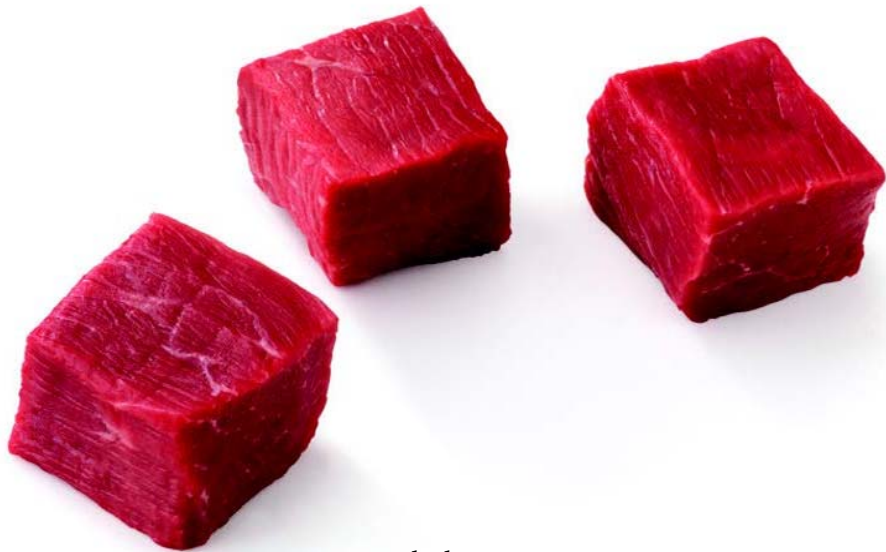
Flat Iron Steak



New York Strip



Prime Rib



Kabob



PorterHouse Steak



Round Steak



Short Ribs - Flank



Ribeye



Rump Roast



Shoulder Roast



Skirt Steak



Short Ribs - Chuck



Sirloin Steak



Tbone Steak



Top Round - London Broil



Stew meat - Stir Fry



Tenderloin

Understanding the Meat Label

- Shows you what you are buying
- Shows you how much you pay for the packaged portion of a pound
- Shows you how much you pay per pound
- May include cooking instructions
- May show the grade of the meat – is there a definition/description of grades?

The food label on packaged beef provides a variety of information designed to make shopping as easy as possible. The label provides the following information depending on the type of beef product purchased:

- Description
- Sell-By-Date
- Eating Instructions
- Nutritional Information
- Cooking and Safe Handling Instructions



Description of Beef Cut

The label on raw beef cuts contains the name of the primal cut the beef was taken from, the name of the retail or market ready cut, a short description [bone-in or boneless], the total weight, and cost per pound. If you are familiar with the different beef cuts, having the name of the cut on the label will help you determine if it is the proper leanness and/or tenderness for the type of recipe that you have planned.

The name of the cut and whether it is bone-in or boneless will help you determine the quantity to buy according to the weight contained in the packages. A boneless cut will contain more servings than the bone-in cut, so it is important to take this into consideration when determining your needs. A bone-in cut may be lower in cost per pound, but when determining your best value, you should compare cost per serving. Another important point to consider is that the bone and fat help give beef great flavor and tenderness, so it may be worth paying a little extra per serving for the bone-in cut. To determine the cost per serving, use the following equation –

$$\text{cost per pound} / \text{number of servings per pound} = \text{cost per serving}$$

Some packaged beef that is labeled "lean" may simply refer to the fact that the excess fat has been trimmed from the beef and may not indicate that the cut of beef is actually a lean cut. If you purchase cuts from the tenderloin or round, you can be sure that they are lean. The tenderloin will not only be lean, but it will be very tender and very expensive. Although round cuts are lean, they are not naturally tender, but they are much more affordable.

Proper preparation and cooking helps to tenderize them.

Much of the beef intended for stewing is simply labeled "stew meat" without describing the cut from which the beef was obtained. In most cases, the meat is taken from tougher cuts such as the bottom round, brisket, or plate.



Sell-By Date

Packaged fresh beef will have a “sell-by date” printed on the food label, which represents the last day recommended for selling the product. Generally the store will pull any products left on the shelf the day of the “sell-by date”. If the meat is properly refrigerated, it will remain fresh up to three days after the “sell-by date” but if it is not to be used within that time, it should be frozen. Some labels may have a “use-by date” rather than a “sell-by date”, which indicates the meat should be cooked or frozen by that date.



Fully Cooked/Ready-to-Eat/Heat and Eat

Some beef products are precooked, so the food label will indicate that the product is “fully cooked” or “ready-to-eat”. A product such as beef luncheon meat is ready-to-eat, but it can be stored at room temperature. Other products, such as canned goods, are precooked, but taste much better if they are heated before they are consumed. These products are known as “heat and eat”.

Nutritional Labeling

All commercially prepared and packaged beef products are required to provide nutritional information on the food label. Raw meat cuts in a food store or butcher shop are exempt from this requirement. The nutritional information shown on the label includes calories, fat and cholesterol content, protein, fiber, sugars, sodium, and various vitamins and minerals.

Cooking Instructions

If a product is not fully cooked or ready-to-eat, the label may provide information for proper cooking.

Beef Bottom Round Roast Cooking Instructions [Suggested Roasting Method For Medium/Medium Rare Beef]

1. If this product is frozen, make sure it is completely thawed in the refrigerator before cooking.
2. Preheat the oven to 405degreesF.
3. Remove the meat from the refrigerator and season it as desired.
4. Place the beef on a rack in a shallow roasting pan, fat side up. Do not cover the meat.
5. Cook the beef 15 to 30 minutes per pound. Check the internal temperature of the roast with a meat thermometer. When the internal temperature reaches 140degreesF, remove the roast from the oven.
6. Remove the roast from the pan and place it on a cutting board. Cover the roast loosely with aluminum foil and let it rest for 15 minutes. The internal temperature will continue to rise during the resting period and should reach 150degreesF, which indicates medium/medium rare doneness. *Note: It is recommended that beef reach an internal temperature of at least 145degreesF for safe consumption. For medium well or well done, a longer roasting time is required.*
7. After the appropriate resting period, the roast is ready for carving.

Safe Handling Instructions

This product was prepared from inspected and passed meat and/or poultry. Some food products may contain bacteria that could cause illness if the product is mishandled or cooked improperly. For your protection, follow these safe handling instructions.



Keep refrigerated or frozen.
Thaw in the refrigerator.



Keep raw meat and poultry separate from other foods. Wash working surfaces (including cutting boards), utensils, and hands after touching raw meat or poultry.



Cook thoroughly.



Keep hot foods hot. Refrigerate leftovers immediately or discard.

Safe Handling Instructions

The food label on raw beef or beef that is not fully cooked, will also contain food safety and handling instructions, which are required by the USDA.

Commodities - Wheat, Corn and Peanuts



TIME:

20 to 40 minutes

MATERIALS NEEDED:

- Pens/pencils for each participant
- Copy of chart handouts for each participant
 - Corn Use Poster
 - From Field to Table - wheat

OBJECTIVES:

The 4-H member will:

- Gain knowledge about commodities and grains grown in Texas
- Correctly identify commodities from the field to the plate
- Answer questions about the commodities production and industry

EXPLORE THE CONTENT:

Texas Ag Stats:

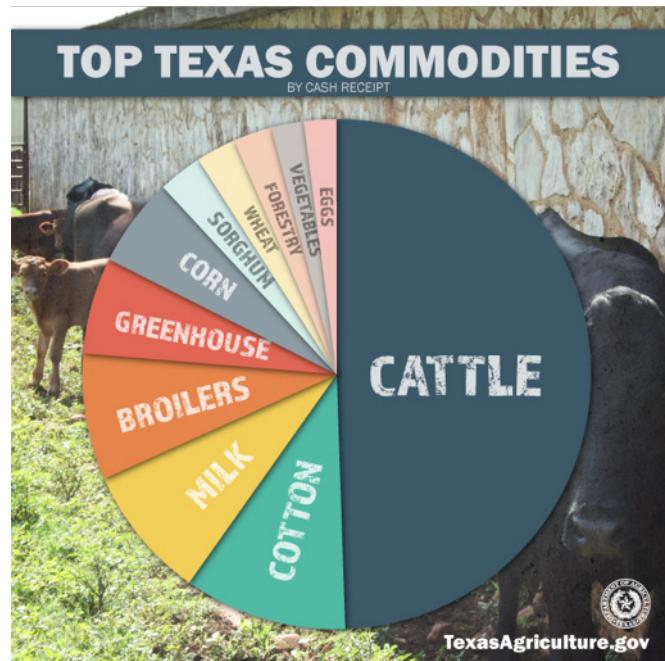
- Texas leads the nation in cattle, cotton, hay, sheep, goats and mohair production.
- Texas leads the nation in number of farms and ranches, with 248,800 farms and ranches covering 130.2 million acres.
- Texas has more women and minority farm operations than any other state in the nation.
- Texas also leads the nation in value of farm real estate.
- Rural lands, including privately owned forest, total 142 million acres, 84% of the state's total land area.
- 12% of Texas' population resides in rural areas.
- 1 of every 7 working Texans (14%) is in an agriculture-related job.
- 98.6% of Texas farms and ranches are family farms, partnerships or family-held corporations.
- The average age of Texas farmers and ranchers is 58 years.
- The economic impact of the food and fiber sector totals more than \$100 billion annually.
- Agricultural cash receipts, including timber, average \$20 billion annually





Top 10 commodities in terms of cash receipts in 2012:

1. Cattle, \$10.5 billion
2. Cotton, \$2.2 billion
3. Milk, \$1.8 billion
4. Broilers, \$1.7 billion
5. Greenhouse & nursery, \$1.3 billion
6. Corn, \$1.2 billion
7. Grain Sorghum, \$594 million
8. Wheat, \$538 million
9. Forestry, \$520 million
10. Vegetables, \$439 million
11. Eggs, \$439 million



In this activity lesson we are going to focus on food-based grains such as wheat, corn and peanuts.

WHEAT

Texas winter wheat is planted and sprouts in the fall, becomes dormant in the winter, grows again in the spring and is harvested in early summer. About 6 million acres of wheat is planted each year.

- 40-45% of Texas wheat is grazed out as a forage (feed) for cattle.
- 55-60% of Texas wheat is harvested for grain. The grain is hauled to a silo, grain elevator or shipped by rail to sell in the grain market either domestically or overseas.

Wheat Facts

- Wheat has been a staple for over 12,000 years
- Wheat is grown in 42 states in the United States
- There are 6 classes of wheat grown in the United States
- Texas grows Hard Red Winter wheat and some Soft Red Winter wheat
- Hard Red Winter wheat is used for yeast breads, hard rolls and bagels
- Soft Red Winter Wheat is used for flat breads, cakes, pastries and crackers
- More foods are made with wheat than any other cereal grain Wheat is produced and sold in a term called a bushel

1 Bushel of Wheat

- weighs 60 pounds
- yields about 42 pounds of flour
- makes 90 one-pound loaves of whole wheat bread
- fills 53 boxes of cereal
- makes 72 pounds of flour tortillas
- makes about 42 pounds of pasta or 210 servings of spaghetti



Other Wheat Uses

- Straw particle board (wood) - used in kitchen cabinets
- Paper
- Hair conditioners
- Adhesives on postage stamps
- Medical swabs
- Charcoal
- Biodegradable plastic cleaning utensils

CORN

Texas corn production contributes billions of dollars to the state's economy. A recent Texas A&M AgriLife study found corn contributes more than \$3.5 billion, and over 22,000 jobs to the High Plains region alone.

Irrigated corn accounts for approximately 65-70 percent of the state's corn production, while just 40 percent of total corn acres in Texas are irrigated.

In 2017, Texas corn growers:

- Planted almost 2.24 million acres
- Yielded an average of 140 bushels per acre
- Produced more than 314 million bushels of corn

Other Corn Uses

Corn is used for over 4,200 purposes with new uses being developed

- 96% of corn grown is fed to livestock
- Nearly 4,000 food items in a grocery store contain corn ingredients
- Biofuel such as ethanol is produced from corn
- Corn Oil
- Starch
- Sweeteners
- Crayons

PEANUTS

Texas is the second largest peanut-producing state in the nation. Texas farmers produce hundreds of millions of peanuts every year and ship them around the state, country and world. The Texas Peanut Producers Board was founded in 1969 and has worked tirelessly since then to support research programs, provide education, develop markets and promote what they believe are the best peanuts in the world.

- Peanuts are not nuts. They are legumes, like beans, peas and lentils.
- The peanut plant originated in South America.
- Peanuts account for two-thirds of all snack nuts consumed in the U.S.
- One acre of peanuts will make 30,000 peanut butter sandwiches.
- Peanut butter is the leading use of peanuts in the U.S.
- It takes almost 850 peanuts to make an 18oz jar of peanut butter!

**DO:**

- Provide the participants with pictures from Seed, Plant and Harvest Identification. Have them match them as to wheat, corn, and peanut
- Provide the participant with the list of products. Have them list what product they are made from, wheat, corn or peanut

REFLECT:

- What did you learn about grains and commodities grown within the region where you live?
- What product did you learn about that is made from a commodity grown in Texas that you use everyday?

APPLY:

- How can you use this information to help educate others on grain and commodity production?
- What external factors could affect product and sales of Ag products?
- How will you apply this information when participating in the Ag Product ID contest?

REFERENCES:

- Texas Wheat <http://texaswheat.org/>
- Texas Corn <http://texascorn.org/>
- Texas Peanut Board <http://texaspeanutboard.com/>
- Texas Department of Agriculture <http://www.texasagriculture.gov/About/TexasAgStats.aspx>



KNOW YOUR COMMODITIES

Cut out each of the photos of the various stages of the commodity. Shuffle them up and have the kids identify the seed, plant and harvest technique used for each of the commodities.











ANSWER KEY

Seed Identification - Answer Key



WHEAT



PEANUT



CORN

ANSWER KEY

Plant Identification – Answer Key



WHEAT



PEANUT



CORN

ANSWER KEY

Harvest of Crop – Answer Key



WHEAT



PEANUT



CORN

NAME THAT COMMODITY

Next to the item below, list what primary commodity the item is derived. Some items could be of multiple commodities.

Wheat, Corn, or Peanut

Bread _____

Pasta _____

Peanut butter _____

Cereal _____

Tortilla _____

Chewing gum _____

Cooking oil _____

Flour _____

Shaving cream _____

Soap _____

Seat cushion _____

Glue _____

Cosmetics _____

Diapers _____

Candy _____

Livestock feed _____

Detergent _____

Face creams _____

Shampoo _____

Paint _____

Tooth Paste _____

NAME THAT COMMODITY ANSWER KEY:

Wheat, Corn, or Peanut

Bread: Corn & Wheat

Pasta: Wheat (typically)

Peanut butter: Peanuts

Cereal: Corn & Wheat

Tortilla: Corn & Wheat

Chewing gum: Corn and Wheat (oils)

Cooking oil: Peanut & Corn

Flour: Wheat

Shaving cream: Peanut

Soap: Corn & Peanut

Seat cushion: Peanut (shells mainly)

Glue: Corn, Wheat

Cosmetics: Corn, Peanuts

Diapers: Corn

Candy: Corn & Peanuts

Livestock feed: Corn, Wheat

Detergent: Peanuts

Face creams: Corn & Peanut

Shampoo & Conditioners: Peanuts

Paint: Peanuts

Toothpaste: Corn

Fruit and Nuts



TIME:

20- 40 minutes

MATERIALS NEEDED:

- Explore Guide Fruit and Nut Activity Sheet for each participant
- Actual Fruits and Nuts or photographs of various examples from the Activity Sheet
- Pens or pencils for each participant

OBJECTIVES:

The 4-H member will:

- Gain knowledge about the Texas produced fruits & nuts
- Correctly identify fruits & their properties
- Answer questions about fruits and nuts regarding production and industry

EXPLORE THE CONTENT:

Fruits are produced in varying regions around Texas. Fruits are often difficult to grow in Texas because of climate control, soil, and disease.

- Lower Rio Grande Valley has the most intense horticultural production. – citrus fruits
- Winter Garden (Hill Country) – Blackberries, peaches,
- Plains Region – Apples,
- Far West Texas – Blackberries,
- East Texas – Mayhaw, Blackberries,

Fruits provide a significant source of our major nutrients needed for daily consumption to maintain a healthy diet. Fruits are high in fiber, and various vitamins needed to support healthy function. A pH varies amongst fruits and vegetables. A pH of 7 is considered neutral. A pH lower than 7 is considered acidic, while a pH higher than 7 is considered alkaline.

Nuts are also an important product for Texas Agriculture. Three nuts are primarily produced in Texas. Pecans, peanuts, and walnuts all produce a nut that we use in everyday life. Nuts provide an important source of healthy fats or unsaturated fats, protein, fiber, and other important vitamins and minerals.

Citrus Fruits

- Citrus fruits are grown primarily in the Valley area of Texas. This area provides the ideal climate because of the few freezes during the winter.
- Citrus requires deep soil with good drainage, both on the surface and internally. Surface drainage refers to the runoff and prevents standing water. Internal drainage refers to the deep soil and its ability to drain from the root systems.
- High quality soil is also a requirement for citrus fruits. A pH of 6-8 is needed for adequate grown. Soils that are excessively salty should be avoided.
- Before planting, research which varieties will thrive in the varying Texas climates. Varieties have been tested based on soil needs, climate, and growing seasons. Picking the right variety of fruit will provide optimal growth.

Blackberries

- Blackberries can be grown anywhere in U.S. Department of Agriculture Hardiness Zones 7, 8, and 9.
- The best soils are well drained and have a pH of 4.5 -7.5.
- Three types of varieties can be grown in Texas: Thorny varieties, Thornless varieties, or Primocane-bearing varieties.
- The most important nutrient need for fertilization of



blackberries is nitrogen. Other nutrients are often sufficient for growth.

- Weeds and pests must be monitored for optimum fruit growth.

Blueberries

- A single blueberry plant can provide 15 pounds of blueberries per year
- The best blueberry in Texas is called the Rabbiteye Blueberry. It has a high concentration of antioxidants and other vitamins.
- The best soils are well drained and have a pH of 4.0-5.5.
- Mulch is vital for blueberry growth, especially during the first two years. Adequate mulch (4-6 inches deep) is needed to acidify the soil, for weed control, and to conserve moisture.

Peaches

- Soil must be a pH of between 6 and 7 for ideal growth.
- Peaches need soil with excellent drainage to prevent disease and to promote optimum growth.
- Most varieties need 650 – 800 hours of chilling temperatures for ideal growth.
- A part time business needs 3-5 acres for profitability. Fulltime requires 20-25 acres for a profitable enterprise.

Pecans

- There are two types of pecans in Texas that produce close to 70,000 commercial acres of pecans. Improved pecans, are referred to as paper shell pecans because of their thinner shells. Improved pecans are also known for disease and pest resistance.
- Improved species generally need to be planted earlier because of the early freezes in the Texas Panhandle.
- Native pecans produce about 40,000 acres in Texas annually. Native pecans often produce a high yielding crop followed by a low producing crop the following year.
- Pecan trees grow best in deep soils and along rivers because of their access to a static water table.

Walnuts

- A Texas specific variety of walnut has been successful in producing nuts. The variety is called the Texas Black Walnut and best grows in soils with a high pH.
- Other varieties often have difficulty because of a disease called “Walnut Blight”. Walnut Blight is spread through high winds and rains and often affects the flowers on the tree.



**DO:****Activity 1:**

- Gather a variety of fruits shown on the Agriculture Product ID guide.
- Have each participant complete the fruit activity handout. Let each participant examine the characteristics using his/her senses (sight, touch, smell, taste) and record the observations

Activity 2:

- Locate an orchard, or grocer with varying types of different fruits/nuts and take a tour.
- During the tour, ask youth questions about the types. You can ask them to take notes and create their own flash cards for them to learn different products.

REFLECT:

- What did you learn about the various types of fruits and their properties
- Which nutrients are the easiest to remember in the foods that you eat?
- What tips make this information easy to remember?

APPLY:

- How can you use this information to help educate others on fruit production?
- How would you use this information to inform a decision regarding fruit/nut production as an agricultural enterprise?
- How will you apply this information when participating in the Ag Product ID contest?

REFERENCES:

- <https://aggie-horticulture.tamu.edu/fruit-nut/>

Ag Product ID Explore Guide
Fruit – Activity 1

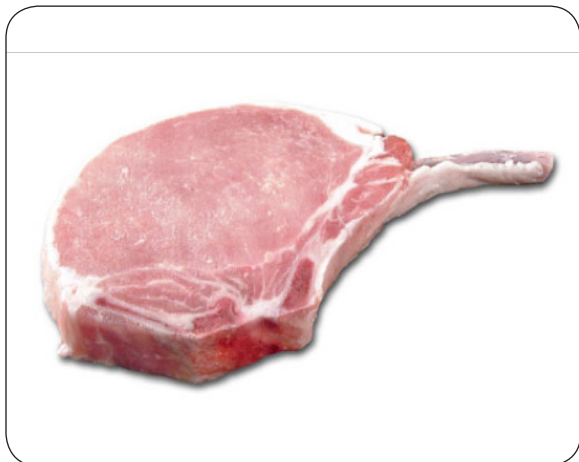
FRUIT	What NUTRIENT(S) does it provide?	What does it LOOK like?	What does it FEEL like?	What does it SMELL like?	What does it TASTE like?
Example: Apple	Vitamin A, B1, B2, B6, c, Folate	Red shiny exterior, pale, grainy interior	Hard, round	Sweet	Crisp, crunchy, sweet
Apricot					
Grapefruit					
Fig					
Lemon					
Coconut					
Honeydew					

Mandarin							
Peach							
Pear							
Mayhaw							
Plum							
Strawberry							
Tangerine							
Pomegranate							

Pecan						
Walnut						

Changes to the identifications can be done as needed

Understanding Pork



TIME:

20- 40 minutes

MATERIALS NEEDED:

- Copies of Pork Basics Handout
- Pens/pencils for each participant
- Copies of Activity page for each participant

OBJECTIVES:

The 4-H member will:

- Gain knowledge about pork.
- Be able to identify the primal and sub primal meat cuts of a hog
- Learn nutritional value of pork

EXPLORE THE CONTENT:

Pork Basics

While pork is world's most widely consumed meat product, the U.S. is 3rd in production with Texas ranking 14th. The slogan for the pork industry is "Be Inspired".

Cuts of Pork

There are five primal cuts to a hog; loin, side, leg, shoulder butt and the picnic shoulder. Each primal cut has sub primal cuts that comprise many of the most popular cuts for consumers. The "Pork Basics" is a great visual to learn the cuts of meat.

Nutrition

Pork has been known as a "white meat" and in comparison to other meats and poultry, pork compares favorably in fat, calories and cholesterol. Nine key nutrients are provided by pork: protein, selenium, niacin, phosphorus, thiamine, vitamin B6, riboflavin, zinc and potassium. Six cuts of pork are considered lean or extra lean in according to the USDA' standards. Lean cuts have less than 10 grams total fat, 4.5 grams of saturated fat and 95 milligrams cholesterol per serving. When looking for the lean cut of pork – look for the term "loin" or "chop".

Grilling / Cooking

Pork can be safely cooked to an internal temperature of 145 degrees F. as measured by a food thermometer. Ground pork should still be cooked to 160 degrees F. There are two basic methods for cooking meats: dry heat and moist heat. Generally, dry-heat methods are best applied to naturally tender cuts of meat such as loin chops, strips, roasts, ham and bacon. The dry-heat cooking methods are grilling (small and large cuts of meat), broiling (chops, kabob and pork patties), sautéing (chops, cutlets and strips), pan-broiling (chops, tenderloin, medallions, ham slices, bacon, ground pork patties) and roasting (roasts and ham). Moist-heat methods of stewing and braising tenderize less-tender cuts such as shoulder cubes.

DO:

- Review with all the participants, the "Pork Basics" Handout
- Provide each participant a copy of the Activity 1 sheet and have them label the 5 primal cuts and then match the sub primal cuts to the primal cut
- Provide each participant a copy of the Activity 2 sheet and have them identify the cuts and answer the questions.

**REFLECT:**

- What nutrients does pork provide?
- Can you name the primary cuts of pork as well as at least one sub primal cut from each of the primary cuts?

APPLY:

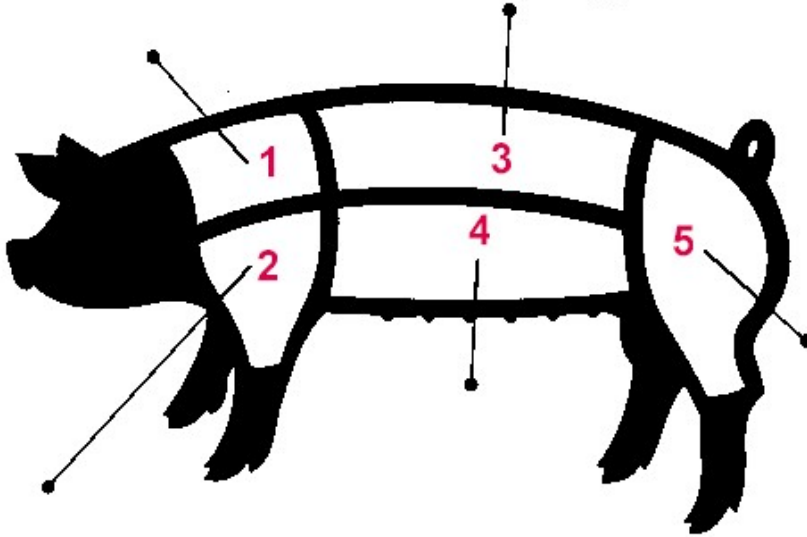
- How has this information helped you to learn more about pork products?
- In learning about the cuts of pork, did you learn about a cut that you had not heard about or seen before?
- How can you use this information to educate others about pork?

REFERENCES:

- <https://texaspork.org/>
- <http://nppc.org/programs/>
- <https://www.pork.org/cooking/nutrition/compare/>
- Additional resources available at https://www.porkcdn.com/sites/porkorg/library/2016/08/purchasing_pork.pdf

Pork Cuts - Activity 1

Label the 5 primal cuts of meat on a hog.



1. _____

2. _____

3. _____

4. _____

5. _____

Listed below are sub-primal pork cuts. Beside each cut, write the number of the corresponding primal cut from the picture above.

Spareribs _____

Back Ribs _____

Picnic Roast _____

Center Rib Roast _____

Ground Pork _____

Canadian Bacon _____

Chops _____

Smoked Hocks _____

Ham _____

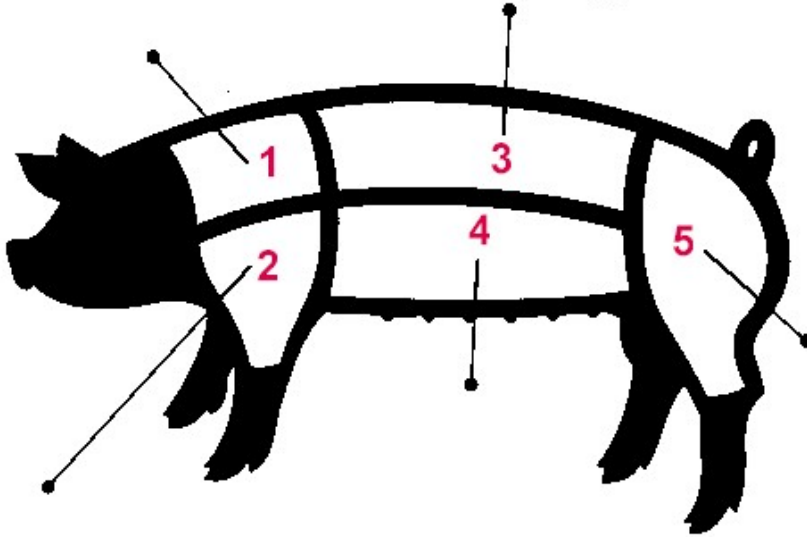
Blade Roast _____

Bacon _____

Tenderloin _____

Pork Cuts - Activity 1 Answers

Label the 5 primal cuts of meat on a hog.



1. Shoulder Butt

2. Picnic Shoulder

3. Loin

4. Side

5. Leg

Listed below are sub-primal pork cuts. Beside each cut, write the number of the corresponding primal cut from the picture above.

Spareribs 4

Back Ribs 3

Picnic Roast 2

Center Rib Roast 3

Ground Pork 1

Canadian Bacon 3

Chops 3

Smoked Hocks 2

Ham 5

Blade Roast 1

Bacon 4

Tenderloin 3

Pork Identification - Activity 2

Practice Pork Classes for AG Product ID - Identify the product first and then answer the product industry Question.

Product 1



Identification

1. Flank Steak
2. Rib Chop
3. T- Bone Steak
4. Roast

Question

What is the optimal internal cooking temperature for the product in the photo?

- A. 180 F
- B. 172 F
- C. 140 F
- D. 145 F



Identification

1. Rack of Pork
2. Ground Sausage
3. Spareribs
4. Bacon

Question

This product comes from which part of the hog?

- A. Loin
- B. Side
- C. Leg
- D. Shoulder Butt

Pork Identification - Activity 2

Practice Pork Classes for AG Product ID - Identify the product first and then answer the product industry Question.

Product 1



Identification

1. Flank Steak
2. Rib Chop
3. T- Bone Steak
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What is the optimal internal cooking temperature for the product in the photo?

- A. 180 F
- B. 172 F
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- D. 145 F



Identification

1. Rack of Pork
2. Ground Sausage
3. Spareribs
4. Bacon

Question

This product comes from which part of the hog?

- A. Loin
- B. Side
- C. Leg
- D. Shoulder Butt

Vegetables

**TIME:**

20- 40 minutes

MATERIALS NEEDED:

Any of the following:

- Pens/pencils for each participant
- Copy of chart handout for each participant

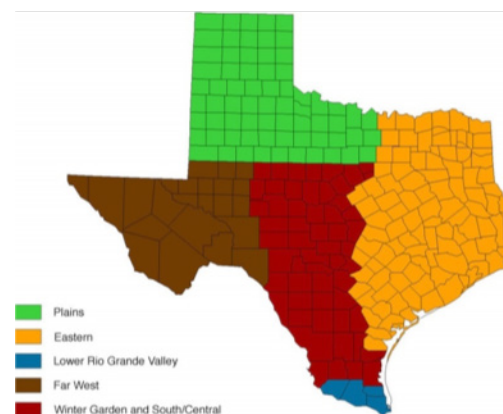
OBJECTIVES:

The 4-H member will:

- Gain knowledge about the Texas produced vegetables
- Be able to correctly identify vegetables
- Be able to answer questions about vegetables regarding production and industry

EXPLORE THE CONTENT:

Vegetables are produced in various areas of Texas based on climate, soil, temperate and other indicators. Below is a breakdown of various Texas vegetables and the region in which they are produced. The Lower Rio Grande Valley has the most intense horticultural production of onions, and carrots. The Winter Garden and South/Central are of the state produces spinach, cabbage, potatoes, onions and cucumbers. The Plains region is in big in production for peas, beans, potatoes and onions. The Far West side of the state has onions and peppers. East Texas has sweet potatoes, peas, sweet corn and potatoes.



Cultural practices of crop selection and management play a major role in the success of production when growing vegetables. With over 40 different kinds of vegetables that are grown in Texas annually, the decision on crop selection can be difficult as many vegetables are widely adaptable, but not always successful. A sufficient supply of quality water is important in vegetable farming. Vegetable crops require more water and frequent irrigation than most agronomic crops. Vegetables are classified as warm or cool season and the growing season temperature will influence crop selection. Warm season crops such as tomatoes and peppers produce higher yields under high temperatures. Cool season crops such as carrots and cabbage produce high yields under cool temperatures. The intensity, quality and day length of light will affect the growth of vegetables. There are some ways to manage the amount of light a crop gets, but proper selection for a region is important. Nutrient availability poses the least problem to vegetable production. Nutrient adjustments can be made by proper fertilization. To determine fertilization requirements, soil testing is done through a reliable laboratory. There are several other cultural practices that play a role and those include; market profitability, variety selection and site selection. Successful vegetable production takes a lot of planning and preparation.



Health Benefits of Vegetables:

Most vegetables are naturally low in fat and calories and none have cholesterol. However, sauces or seasonings may add fat, calories, and/or cholesterol. Vegetables are important sources of many nutrients, including potassium, dietary fiber, folate (folic acid), vitamin A, and vitamin C.

Diets rich in potassium may help to maintain a healthy blood pressure. Vegetable sources of potassium include sweet potatoes, white potatoes, white beans, tomato products and paste, Dietary fiber from vegetables, as part of an overall healthy diet, helps reduce blood cholesterol levels and may lower the risk of heart disease. Fiber is also important for proper bowel function. It helps reduce constipation and diverticulosis. Fiber-containing foods such as vegetables help provide a feeling of fullness with fewer calories. Folate (folic acid) aids the body to form red blood cells. Vitamin A aid in keeping eyes and skin healthy and helps to protect against infections. Vitamin C assists in healing cuts and wounds and keeps teeth and gums healthy. Vitamin C aids in iron absorption

DO:

- Provide the participants the vegetable chart handout. Instruct youth to identify each vegetable and research the nutrient(s) provided by the vegetable, indicate region(s) grown and grown season(s).

REFLECT:

- What did you learn about vegetables grown within the region where you live?
- Which nutrients are the easiest to remember in the foods that you eat and how is it easy to remember?


APPLY:

- How can you use this information to help educate others on vegetable production?
- How will you apply this information when participating in the Ag Product ID contest?

REFERENCES:

- <http://aggie-horticulture.tamu.edu/vegetable/>
- Geographic regions in Texas : <http://aggie-horticulture.tamu.edu/vegetable/guides/the-crops-of-texas/appendix-1-descriptions-of-geographic-regions-in-texas/>
- <http://aggie-horticulture.tamu.edu/archives/parsons/earthkind/ekgarden14.html>
- Fall Growing Season: <http://aggie-horticulture.tamu.edu/archives/parsons/fallgarden/falldirect.html>



Vegetable (Include photo)	Nutrient (s) Provided	Region Grown	Growing Season
Example: Asparagus 	Vitamin A and C, minerals	Cooler areas of North and West Texas, can also be grown in Dallas and Houston	Early Spring
Corn			
Onions			
Peppers			
Cabbage			
Beans			
Sweet Potatoes			

Potatoes				
Spinach				
Cucumber				
Tomatoes				
Peas				

*** Additional vegetables can be added by the project leader to enhance the learning experience.

Putting it All Together

EXPLORE THE CONTENT:



TIME:

30 minutes to an hour

OBJECTIVES:

The 4-H member will:

- Take the knowledge learned in the previous lessons to create study materials for the Agriculture Production Identification Contest

- By now you have completed the previous lessons on the following commodities that could be included in an AG Product ID Contest; Beef, Pork, Fruits, Vegetables and Nuts. One way to better equip yourself and/or your team is to prepare study materials. This can be done individually or as a group. Making study materials can be fun and interactive. A couple of ways to make learning more exciting can be done by creating flash cards, PowerPoint Presentations, Photobooks or having a scavenger hunt. Create your own classes by selecting products to study from photos found in magazines or online, take photos on your own, develop questions about the products and include the answers or host a contest at the county level, at a county show or other large event.
- It is also important to understand the logistics of the contest as you prepare and study. A contest consists of 20 Texas agriculture products (could be less based on learning experience adaptations). Each product has an identification component as well as a production/ industry question pertaining to the product. Participants have 30 seconds to review and respond to the questions for each product. Check the rules for each contest as some might allow 30 or 40 seconds per station. Participants will first ID the product, selecting one of the four options listed – 5 points earned if ID'ed correctly. Participants will then answer the question and select one of the four options listed – 5 points earned if answered correctly. **Note – if the product was not ID'ed correctly, then the participant will not receive the 5 points on the question, regardless of answering correctly.** There is a possible 200 points earned if all products were ID'ed correctly and questions answered correctly. Participants record answers on a Scantron (Form #API2). Some local contests may use other ways to record answers due to not having access to a scantron reader. Youth can enter as an individual or as a team of 3-4
- Ag Product ID Contest Opportunities – Put your knowledge to the test, enter a contest.
 - o State Fair of Texas
 - o Heart of Texas Fair and Rodeo
 - o Houston Livestock Show and Rodeo
 - o District Contests - *Check with your County Extension Agent to see if your district conducts a contest
 - o Texas 4-H Roundup – Invitational Contest (Intermediate and Senior divisions only)
 - *some counties may host a contest that is open statewide
 - *some districts host a contest at a district event – check with your CEA

**DO:**

- Activity 1 – Ag Product ID Scavenger Hunt – Provide youth a list of Texas Agriculture products to locate and have them take a picture. The photos can be used to create study materials. Participants will then research the products and share the information with the group.
- Activity 2 – Assign participants an agriculture product. Ask each participant to prepare a snack using the product and bring it to a practice/ meeting for everyone to taste. Along with the snack, the member should come prepared with some key facts about that product to share with the others.
- Activity 3 – Create your own classes to conduct a contest at your 4-H club meeting, county council meeting or any other event with a group of people. See example of classes.

REFLECT:

- How has creating your own study materials better prepared you to compete in the AG Product ID contest?
- Has participating in the AG ID Project opened your eyes to trying foods you have never tried before? If so, which ones?

APPLY:

- How will you use this information at home?
- How will you utilize this information to help others learn more about agriculture and the AG ID contest?

REFERENCES:

- <https://bigtex.com/livestock/livestockshow/>
- <https://www.hotfair.com/events/2017/livestock-show>
- <http://www.rodeohouston.com/Get-Involved/Exhibitors-Participants/Livestock-Show>
- <https://texas4-h.tamu.edu/events/roundup/>



Agriculture Identification Sample Classes

Product 1



What is this product?

- A. Pinto Bean
- B. Popcorn
- C. Corn
- D. Carrot

What is another popular name for this product?

- A. Cob
- B. Maize
- C. Stalk seed
- D. Cereal

Product 2



What is this product?

1. Raspberries
2. Strawberries
3. Huckleberries
4. Bayberries

Which of the following is a common variety found in Texas?

- A. Jewel
- B. Lateglow
- C. Hood
- D. Allstar

Product 3



What is this product?

1. Strip Steak
2. Porterhouse Steak
3. T-Bone Steak
4. Ribeye Steak

What cut is this steak found in?

- A. Chuck
- B. Loin
- C. Round
- D. Flank

Product 4



What nut is this?

1. Pecan
2. Peanut
3. Cashew
4. Almond

What vitamin is this nut rich in?

- A. Vitamin A
- B. Vitamin B2
- C. Vitamin E
- D. Vitamin B6

Agriculture Identification Sample Classes

Product 1



What is this product?

- A. Pinto Bean
- B. Popcorn
- C. Corn
- D. Carrot

What is another popular name for this product?

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- D. Vitamin B6



MARKING INSTRUCTIONS

CORRECT: ● INCORRECT: ✗ ⊗ ⊖ ⊕

4-H Explore Project Book Evaluation
- Agriculture Product Identification

1. Please read the statement in the left column of the table below. For each item listed below, mark the number in the left column for your level of understandg BEFORE the program; then mark the number in the right column for your level of understanding AFTER the program.

LEVEL OF UNDERSTANDING: 1 = Poor, 2 = Average, 3 = Good, 4 = Excellent	BEFORE				AFTER			
	1	2	3	4	1	2	3	4
As a result of participating in the Ag Product ID lessons and activities...								
I understand the different topics covered in Ag Product ID.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the importance of knowing where my products come from.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the process my food goes through to reach my plate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand that healthy choices lead to better nutrition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the importance and impact of Texas Agriculture.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. For each statement below, fill in the bubble that best describes you.

INTENTIONS TO ADOPT:	Yes	No	Unsure
As a result of participating in the Ag Product ID lessons and activities...			
I can recognize beef and pork meat cuts to purchase when making a meal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will eat more Texas grown fruits and nuts daily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can identify food and by-products made from various Texas Commodities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will try to eat more Texas grown vegetables daily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I plan to organize an Ag Product ID team to compete at various contests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. For each statement below, fill in the bubble that best describes your level of agreement with the following statements.

BEHAVIOR CHANGES:	Strongly Disagree	Disagree	Agree	Strongly Agree
As a result of participating in the Ag Product ID lessons and activities...				
I am more comfortable working in a team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more willing to listen to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more comfortable speaking with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more confident in my abilities as a leader.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



MARKING INSTRUCTIONS

CORRECT: ● INCORRECT: ✗ ⊗ ☐ ⊙

3. What is the most significant thing you learned in the Agriculture Product Identification lessons?

Please tell us about yourself.

Gender: Female Male

I consider myself to be: African American White
 Asian American Other
 Native American

I consider myself to be: Hispanic Non-Hispanic

Grade: 3rd 5th 7th 9th 11th
 4th 6th 8th 10th 12th

Most of the time, you live . . .

<input type="radio"/> Farm or ranch	<input type="radio"/> Suburb of city between 50,000
<input type="radio"/> Town less than 10,000	<input type="radio"/> Central city/urban center with more than 50,000
<input type="radio"/> City between 10,000 - 50,000	

Please provide any additional comments below.

