All About Beef
This IAITC packet provides activities focused on nutrition and beef. Other activities examine the difference between beef and dairy cattle as well as one famous cow’s role in Illinois history. Plus, there are great nutrition activities for students about meal planning. Use this packet along with other beef and nutrition information as a useful tool for your classroom.

Beef Trivia .................................................................................................................. 3-4
Where’s the Beef?........................................................................................................ 5
The hAmburGer Paragraph ....................................................................................... 6-7
Let’s Make a Meal Deal............................................................................................ 8-15
What Cow is This? ...................................................................................................... 16-17
Beautiful Bovine Shapes.......................................................................................... 8-19
Caring for Cattle......................................................................................................... 20-22
Why Eat Beef? ........................................................................................................... 23-25
Answers ..................................................................................................................... 26
Illinois Standards & Framework .............................................................................. 27

Materials provided by:

[Logos of Illinois Beef Association, IAA Foundation, BEEF USA, and National Cattleman’s Beef Association]
Activity: Use these facts and information found on the Beef Ag Mag or the Beef Trivia Questions to create a Ball O’ Beef (trivia ball). Write the trivia questions directly onto a beach ball. Quiz students with each toss about their beef knowledge.

- A calf weighs about 80 pounds at birth. The calf drinks its mother’s milk and eats grass for the first six months, until it is weaned from its mother. It weighs about 400 pounds at this time. The average heifer is 2 years old when she has her first calf.

- A cow’s diet is mainly grass and hay, with some feed supplements. Ruminate animals, like cows and deer, have a complex four part stomach that allows them to digest grass. The four parts of the stomach are called the rumen, reticulum, omasum and abomasum. The largest part is called the rumen, and it works like a fermentation vat. Cows eat a large amount of food at one time and it is held in the rumen where it mixes with stomach acid. Throughout the day, the cow will ‘burp’ up small amounts of the food it has already eaten out of the rumen and chew it for a second time. This is called chewing their cud. Once the food is chewed the second time it is swallowed again and then passes through the other three sections of the stomach and is digested. A cow chews its cud up to 8 hours each day. A cow also drinks about 30 gallons of water each day.

- Yearlings are usually sold at a sale barn and trucked to feedlots. They are fed grain and hay in the feedlot, and then sold to a packing house when they weigh around 1,000 to 1,100 pounds.

- A cow that weighs 1,000 pounds will yield about 432 pounds of meat.

- Popular cuts of beef include steak, roast and ground beef for hamburger. The average person eats about seven steers in their lifetime!

- Beef has ZIP! It has Zinc, a mineral used for growth and fighting off illnesses; Iron, to help red blood cells carry oxygen to body cells and tissues; and Protein, to keep our body tissue healthy. It also has plenty of B-vitamins, which promote healthy skin, keep our nervous system healthy, and are important for digesting our food and burning body energy.

- Other products besides meat are made from beef cows. Leather, made from the hide, is used to make a variety of items, from clothing to basketballs. The hide from one steer can make 144 baseballs, 20 footballs or 12 basketballs. Companies that make sports equipment use more than 100,000 hides each year.

- Gelatin, made from bones and horns, is used in making candies, marshmallows, ice cream and photographic film.

- Bones are used to make glue and fertilizers. Blood meal, a fertilizer, is made from blood.

- Beef fat, called tallow, is an ingredient in soaps, cosmetics, candles, shortenings and chewing gum.

- Many medicines, including insulin and estrogen, are made from the glands of the cow.
1. In America, on which single day of the year is the most beef consumed? **Memorial Day**
2. On average, a beef cattle operation is home to how many cattle? **40 head of cattle**
3. What is the most popular cut of beef in the United States? **Ground beef**
4. Which segment of American agriculture is the largest, based on cash receipts? **The cattle industry**
5. How many different breeds of beef cattle can be found in the United States? **Over 70 different breeds**
6. Where did the hamburger make its international debut? **The 1904 St. Louis World's Fair**
7. Who invented the hamburger? **Fletcher Davis**
8. How many compartments does a ruminant animal's stomach have? **Four**
9. How many pounds of beef come from one steer? **About 400 pounds**
10. What percentage of a steer is used for food and by-products combined? **99%**
11. Five counties in Illinois have more cattle than anywhere else in the state. Name one. **JoDaviess, Hancock, Fulton, Adams, Pike**
12. What is the name of a male bovine? **Bull**
13. A female bovine who has had a calf is called a _________. **Cow**
14. Ruminants bring up a small amount of food to chew into tiny pieces. This is called _________. **Cud**
15. Bovines have hooves split in the center called ____________. **Cloven hooves**
16. How many people work in the US cattle industry? **Over 1.4 million people**
17. What two countries produce the most beef? **United States and Brazil**
18. How many hours a day does a cow spend chewing its cud? **8 hours each day**
19. How many basketballs can be made from 1 cowhide? **12 basketballs**
20. Where did the first McDonald's Restaurant open? **Des Plaines, Illinois**
21. What nutrient does beef provide that helps blood carry oxygen to cells? **Iron**
22. What was the world's first hamburger chain founded in 1921 in Wichita, Kansas? **The first hamburger "chain" was White Castle**
23. What is the nickname for the square, baby burgers sold at White Castle? **Sliders**
24. What body building nutrients does beef supply? **Iron, Zinc, and Protein**
25. Which minerals, supplied by beef is most likely to be missing from American diets? **Iron**
26. What important natural drug used by diabetics can be made from beef animals? **Insulin**
27. When preparing beef, which kitchen tool is used to determine whether or not the meat is "done?" **Thermometer**
28. What Illinois organization promotes and advances the beef cattle industry within the state? **Illinois Beef Association**
29. Who first brought cattle to the Western Hemisphere? **Christopher Columbus in 1494**
30. What mineral found in beef promotes growth and development? **Zinc**
31. Which is the most tender cut of beef? **Beef tenderloin**
32. One of the oldest methods of food preservation is drying. What popular beef snack food is made by this method? **Beef jerky**
33. To what temperature should ground beef be cooked? **160 degrees Fahrenheit**
34. Who provided the name for sirloin steak? **England's King Henry VIII**
35. What restaurant made the phrase "Where's the Beef?" popular? **Wendy's**
36. What is the current nationally advertised slogan for beef? **"Beef. It's What's for Dinner."**
Where’s the Beef?

A L L  A B O U T  B E E F

What are you having for dinner? Well, it could be beef—thanks to seeing, hearing or reading a catchy advertisement from the beef industry. Advertising often drives an industry’s sales. It is also a main component to our everyday pop culture. Think of some common advertisements that have influenced your everyday conversation.

“They’rrrrre GR-R-REAT!” - Kellogg’s Frosted Flakes

“I’m lovin’ it.” - McDonald’s

“Taste the rainbow.” - Skittles

Activity:

1. Discuss as a class what an advertisement is and have students brainstorm what makes a good advertisement. Record the responses on a chalkboard or large piece of paper.

2. Using these responses, create a list of criteria that the class can use to evaluate advertisements.

3. After reading the Beef Ag Mag, develop your own advertisement for the beef industry. The ads can be from any media: print, broadcast or television.

4. Share your ideas with the class and choose a winner based on the criteria created by the class.

Discussion Question: What does the general public need to know about beef? Why?

Check out this video:  http://www.youtube.com/watch?v=48H7zOQrX3U
Background Information:
From the beef to the bun, every ingredient on a hamburger can be traced to a farm source and to various agricultural careers involved in getting food from the farm to the plate. This activity offers a fun way to introduce writing through your lunch.

Objective:
Students will become familiar with the components of a paragraph and create an agriculture-themed paragraph.

Directions:
1. Engage students in a conversation about hamburgers. Possible questions include: How many of you like to eat hamburgers? Who likes to eat plain hamburgers? What toppings do you like on your hamburger? Why do we put toppings on hamburgers?
2. Suggest to students that a paragraph is like a hamburger by sharing the “Hamburger Recipe.”
3. Copy “The hAmburGer Paragraph” worksheet on an overhead transparency and guide students through the writing process as a class.
4. Give each student a worksheet and encourage them to write their own paragraphs. This activity is a great way to have students research and write about different agriculture-themed topics. There is a list of potential topics below. Extend this activity by including the “Farm Sources of a Cheeseburger” presentation available from your Ag Literacy Coordinator.

Hamburger Recipe
Top Bun: Introduction - Every hamburger needs a top bun, every paragraph needs an introduction.

Hamburger: The Topic Sentence- The most important part. You cannot have a burger or a paragraph without it.

The Fixings: Supporting Details- Supporting details support or describe the topic sentence. They make the paragraph more interesting to read, just as ketchup, mustard and pickles make a hamburger more interesting to eat.

Bottom Bun: Conclusion – A conclusion finishes a paragraph and leaves you with a final thought or idea. A paragraph is unfinished without a good conclusion, just as a hamburger without a bottom bun. Your burger would fall apart and so would your paragraph.

Potential Topics:
Impact of Agriculture on Our Daily Lives
Agriculture in Different Cultures
Agriculture in Different Regions of the United States
Agriculture Around Me: About Agriculture in a Student’s Community
Let’s Make a Meal Deal

Supplies:

- Breakfast, Lunch, Dinner and Snack Food items
- Pencil
- Meal Chart
- Colored Pencils
- Calculator

Objective:

Proper daily nutrition is a topic we should all be familiar with. Have you ever really stopped to think about the total daily caloric intake or how many servings of each food group you eat in a day? This activity will help students start thinking about what they eat in a day and how they can get more nutritional value out of their meals. To make a successful meal deal, each day should also include some activity. If the students can find a good balance of meals between breakfast, lunch, dinner and a snack, and include some daily activity, they will make the meal deal!

Directions:

1. Start by handing out food options for each meal of the day - breakfast, lunch, dinner and a snack.
2. Let the students make food choices for each meal.
3. Hand out activity choices.
4. Allow students to choose the activities they would participate in on a normal day.
5. Set aside other food choices. Beware of the CAUTION items; they offer no serving amount value and are high in calories.
6. Provide students with the Meal Chart to chart their choices by including both the amount per serving in ounces or cups and the calorie value of each choice. Each food item should have both a serving amount and a calorie value.
7. Calculate the total of the serving amounts and write in the total columns. Serving sizes should be equal or less than the totals for each food group.

Daily Serving Totals

- Meat & Beans = 5 ¼ oz.
- Vegetables = 2 ¾ cups
- Dairy = 24 oz.
- Grains = 6 oz.
- Fruit = 1 1/2 cups
8. Add the total calories to get a final calorie value. Visit: https://www.supertracker.usda.gov/ and create a profile to include your age, gender, height, weight and level of activity. This plan will then calculate your calories and allowances for each food group.

9. Indicate total activity time on the chart. Total time should be at least 60 minutes.

10. Evaluate chart, and using one color, shade in the areas that meet the total suggested servings.

11. Shade in those areas that are too low or too high in another color.

12. Let students try again using a new chart aiming to improve their overall diets with smarter choices.

A chart shaded all one color, meeting all of the total values, is a real MEAL DEAL!

Extension Activities:

Have the students compare and contrast their charts to the other students. What similarities and differences did they find?

Discuss other food options for their meals. How can they become smarter eaters?

Discuss different foods from across the world. How would other countries meals differ from ours?

Activity adapted from MyPyramid Blast Off at www.choosemyplate.gov
Breakfast

Blueberry Muffin 180
1 1/2 oz. Grain

Banana 110
3/4 C. Fruit

Bagel 160
2 oz. Grain

2% Milk 120
1 C. Dairy

Fat Free Milk 80
1 C. Dairy

Cereal (sugar) 110
1 oz. Grain

Pancakes 150
1 1/1 oz. Grain

Chocolate Milk 150
1 C. Dairy

Yogurt 160
3/4 C. Dairy

Orange Juice 60
1/2 C. Fruit

Steak & Eggs 120
2 oz. Meat & Beans
1/4 C. Dairy

Melon 60
1/2 C. Fruit

Sausage 180
1 1/5 oz. Meat & Beans

Apple Juice 60
1 1/2 C. Fruit

Fat Free Milk 80
1 C. Dairy

Cereal (sugar) 110
1 oz. Grain

Pancakes 150
1 1/1 oz. Grain

Chocolate Milk 150
1 C. Dairy

Yogurt 160
3/4 C. Dairy

Orange Juice 60
1/2 C. Fruit

Steak & Eggs 120
2 oz. Meat & Beans
1/4 C. Dairy

Melon 60
1/2 C. Fruit

Sausage 180
1 1/5 oz. Meat & Beans

Apple Juice 60
1 1/2 C. Fruit
<table>
<thead>
<tr>
<th>Lunch</th>
<th>Calories</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey &amp; Cheese Sandwich 250</td>
<td>250</td>
<td>2 oz. Meat &amp; Beans, 2 oz. Grains, 1/4 C. Milk</td>
</tr>
<tr>
<td>French Fries 200</td>
<td>200</td>
<td>1 C. Vegetable</td>
</tr>
<tr>
<td>Orange Slices 40</td>
<td>40</td>
<td>3/4 C. Fruit</td>
</tr>
<tr>
<td>Carrot Sticks 30</td>
<td>30</td>
<td>1/2 C. Vegetable</td>
</tr>
<tr>
<td>Spaghetti and Meatballs 280</td>
<td>280</td>
<td>2 1/2 oz. Meat &amp; Beans, 1 C. Vegetable</td>
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<tr>
<td>Tomato Soup 90</td>
<td>90</td>
<td>1/2 C. Vegetable</td>
</tr>
<tr>
<td>Chef Salad 230</td>
<td>230</td>
<td>2 1/2 oz. Meat &amp; Beans, 1/2 C. Dairy, 1 C. Vegetable</td>
</tr>
<tr>
<td>Apple 60</td>
<td>60</td>
<td>1 C. Fruit</td>
</tr>
<tr>
<td>Taco 90</td>
<td>90</td>
<td>1 oz. Meat &amp; Beans, 1 oz. Grains, 3/4 C. Vegetable, 1/4 C. Dairy</td>
</tr>
<tr>
<td>Baked Potato 100</td>
<td>100</td>
<td>1 C. Vegetable</td>
</tr>
<tr>
<td>Baked Beans 120</td>
<td>120</td>
<td>2 oz. Meat &amp; Beans</td>
</tr>
<tr>
<td>Chocolate Chip Cookies 140</td>
<td>140</td>
<td>1/2 oz. Grains</td>
</tr>
<tr>
<td>Milk Chug 100</td>
<td>100</td>
<td>1 3/4 C. Dairy</td>
</tr>
<tr>
<td>Soda 160</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Fruit Drink 120</td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>
Dinner

Grilled Chicken 140
3 oz. Meat & Beans

Steak 180
1 oz. Meat & Beans

Macaroni & Cheese 260
1 3/4 oz. Grains, 1/2 C. Dairy

Pepperoni Pizza 220
1/2 oz. Meat & Beans, 1 oz. Grains,
3/4 C. Vegetable, 1/4 C. Dairy

Dinner Roll 110
1 1/2 oz. Grains

Hamburger 400
3 oz. Meat & Beans, 2 oz. Grains

Spinach Salad 180
1/4 oz. Meat & Beans, 1/2 oz.
1 C. Vegetable

Fish Sticks 290
2 1/2 oz. Meat & Beans
2 oz. Grains

Veggie Burger 300
3 oz. Meat & Beans, 2 oz. Grains

Onion Rings 280
1/2 Grains, 1/2 C. Vegetable

Chocolate Cake 240
1 oz. Grains

Taco 90
1 oz. Meat & Beans, 1 oz. Grains,
3/4 C. Vegetable, 1/4 C. Dairy

Milk 100
1 C. Dairy

Fruit Drink 120

Soda 160
Snack

- Frozen Fruit Bar 80  
  1/2 C. Fruit

- Trail Mix 170  
  1/4 C. Fruit, 1 oz. Meat & Beans

- Beef Jerky 80  
  1 oz. Meat & Beans

- Oatmeal Raisin Cookie 120  
  1 oz. Grains

- String Cheese 90  
  3/4 C. Dairy

- Potato Chips 160  
  1 oz. Grains

- Graham Crackers 120  
  1 oz. Grains

- Popcorn 105  
  1 oz. Grains

- Ice Cream 130  
  1/4 Dairy

- Pretzels 110  
  1 oz. Grains

- Candy Bar 270

- Soda 160

- Fruit Drink 120

- Water 0
Activity

Catch
20 minutes

Dancing
30 minutes

Hockey
30 minutes

Footballs
1 hour

Bicycling
20 minutes

Basketball
30 minutes

Swimming
30 minutes

Soccer
30 minutes

Walking Dog
15 minutes

Aerobics
30 minutes

Recess
20 minutes

Yard Work
45 minutes

Baseball
30 minutes

Karate
30 minutes

Household Chores
20 minutes

Volleyball
30 minutes

Jogging
30 minutes

Skateboarding
20 minutes
Plan Your Meal Chart

Mark each box with the amount of food (ounces or cups) over the calories amount. Ex. 2oz/250

Total the food ounces or calories for each food (Meat & Beans, Dairy, Fruit, Vegetables, and Grains) without going over the total indicated.

Total the calories for each row and then calculate a total calorie amount equal or less than 2000 calories.

<table>
<thead>
<tr>
<th></th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner</th>
<th>Snack</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat &amp; Beans</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
</tr>
<tr>
<td>(5 1/4 oz)</td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
</tr>
<tr>
<td>Dairy (6 oz)</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
</tr>
<tr>
<td>Fruit (3 cups)</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
</tr>
<tr>
<td>(2 3/4 cups)</td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
</tr>
<tr>
<td>Grain (6 oz)</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
<td>Ounces</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
<td>Calories</td>
</tr>
</tbody>
</table>

Total Minutes of Activity:
Background Information:

All female cattle breeds produce milk and meat, but some cattle are better milk producers, while some are better meat producers. Beef cows provide us with meat and other by-products such as crayons, plastic, insulin and pet foods. Dairy cows produce milk products.

Since dairy cows produce milk, they usually have very large udders. For this reason, dairy cows are a different shape than beef cows. The basic shape of a dairy cow is a trapezoid. The basic shape of a beef cow is a rectangle.

Dairy cows must be milked 2 to 3 times a day and because of this they are very scheduled animals. Most dairy cows will make their way to the barn from the pasture without the assistance of the farmer, because of this routine they become accustomed to. Beef cattle on the other hand do not have as rigid a schedule, so they can be seen out in the pasture for longer periods of time and they will be moved from one pasture to another pasture more often. Some beef cattle will even be miles away from the main farm when they are put out to pasture.

Directions:

1. Hand out Beef and Dairy Ag Mags. Have students read through the Ag Mags. While reading, encourage students to highlight any information or interesting facts they discover.

2. Share the background information with students.

3. Provide students with the Venn diagram template to chart the similarities and differences between beef and dairy cattle. Students can use the information from the Ag Mags or search for their own information using books and the Internet.

4. Create a Venn diagram on a chalkboard or large piece of paper. Record student responses as they share what they found.

Extension Activities:

- Have students extend their Venn diagrams by comparing/contrasting another Illinois farm animal.

- Collect products made from beef and dairy cattle. Have students sort the products into two groups to reveal beef and dairy products.

- Ask students to design their own beef and dairy cows, starting with appropriate shapes: rectangle for beef and trapezoid for dairy. Encourage students to use information within Ag Mags to add other features to their cows.

Adapted from Oklahoma Agriculture in the Classroom
What COW is this? Venn Diagram
Background Information:

All female cattle breeds produce milk and meat, but some cattle are better milk producers, while some are better meat producers. Beef cows provide us with meat and other by-products such as crayons, plastic, insulin, and pet foods. Dairy cows produce milk products. Since dairy cows produce milk, they usually have very large udders. For this reason, dairy cows are a different shape than beef cows. The basic shape of a dairy cow is a trapezoid. The basic shape of a beef cow is a rectangle.

Objective:

Students will learn the difference in shape between beef and dairy cattle. Students will also calculate the perimeter and area for a trapezoid and rectangle.

Directions:

1. Share background information with students and discuss what dairy cows and beef cows produce. This activity is a great follow-up to “What COW is this?”
2. Introduce rectangles and trapezoids. Have students describe the features of each shape.
3. Provide students with the “Beautiful Bovine Shapes” worksheet and ask students to calculate the perimeter and area for each shape.
4. As a class, review the answers. Have students explain how they found their answer.
5. Extend the activity by having each student create a “bovine” themed perimeter or area problem for others to solve.
1. Using the key, find the perimeter of a trapezoid: \(a + b + c + d\)
   \[\text{Perimeter} = \]

2. Using the key, find the area of a trapezoid: \((h / 2) \times (a+b)\)
   \[\text{Area} = \]

3. Using the key, find the perimeter of a trapezoid: \(a + b + c + d\)
   \[\text{Perimeter} = \]

4. Using the key, find the area of a trapezoid: \((h / 2) \times (a+b)\)
   \[\text{Area} = \]

5. Using the key, find the perimeter of a rectangle: \(2a + 2b\)
   \[\text{Perimeter} = \]

6. Area of a rectangle: \(a \times b\)
   \[\text{Area} = \]

7. Using the key, find the perimeter of a rectangle: \(2a + 2b\)
   \[\text{Perimeter} = \]

8. Area of a rectangle: \(a \times b\)
   \[\text{Area} = \]
Gestation period is the cow’s pregnancy. This lasts for 9 months. A cattle farmer is one who maintains a herd of cows for breeding.

A newborn calf weighs about 60-100 lbs. They are weaned (separated from their mother’s milk) at about 6-10 months old. At this age, they weigh roughly 450-700 lbs.

Cattle spend the majority of their lives grazing on grass pasture. Some are sold at an auction market, some females can be used for future breeding, and some go to the feedlot.

Most beef cattle are in the feedlot for 4-6 months. The lots provide enough room for the cattle to socialize and exercise. Food rations are provided by nutritionists. Feedlots provide consistent, wholesome and affordable beef using fewer resources.

Market weight of cattle is around 1,200-1,400 lbs. The average age is between 18-22 months. A truck takes the cattle for processing. The meat is inspected to ensure it is safe, wholesome, labeled and packaged. The final beef products are shipped to retail and food service establishments for consumers to purchase.

Try making your own Beef Timeline using the pictures and descriptions above.
Animal health and well-being are top priorities for livestock farmers across the country. Regular check-ups and farmers’ use of vaccines help to ensure the prevention of illness and diseases.

There are a number of programs in use to ensure proper care and health throughout the life of cattle. Some of these programs are: The Beef Quality Assurance Program, Master Cattle Transportation, Humane Slaughter Act and American Meat Institute, just to name a few.

Check out: http://www.explorebeef.org/animalcare.aspx

Cattle and Their Diet

- A 200 lb. calf eats a diet consisting of 30% corn and 70% dry hay.
- A 1,000 lb. steer eats a diet consisting of 25% soybean meal and 75% corn.

Color in the buckets below the calf and the steer to represent the appropriate diet. Use the color yellow for corn, brown for soybean meal and green for hay.
Math Activity

Use the information found on pages 22 & 23 to answer the math questions that follow. Be sure to show your work!

1. What percentage of the year is the gestation period?

2. If a calf weighs 575 pounds at 8 months old, how many pounds are gained each month, assuming growth was constant? Round to the nearest pound.

3. Use your answer from number 2 to estimate the weight of the calf at 1 year.

4. If a cattle truck can hold 50,000 pounds of cattle, and the cattle each weigh 1,300 pounds, how many cattle will the truck hold? Round down to the nearest whole number.

5. If a steer weighs 1,000 pounds and consumes 2 percent of his weight, how many pounds does the steer eat?

6. Using your answer from number 5, how much of this is soybean and how much is corn? Use the information on page 23 for help.

7. If a calf weighs 200 pounds and consumes 2 percent of his weight, how many pounds does the calf eat?

8. Using your answer from number 7, how much of this is corn and how much is dry hay?
Today, we are noticing a new trend in the diets of young people. More and more they are showing a lack of nutrients in their diets, specifically in certain vitamins. There are ways to improve this rapidly growing decline in nutrition. One solution is adding more lean beef to daily meals. Studies show that beef is an excellent source of vitamins Iron, Zinc, Phosphorous, B12 and others. That's right—Beef has ZIP!

**Directions:** Examine the next few charts to see just how low girls and boys could be on some essential nutrients.
Directions:
Using the data given, graph the chart showing nutrients provided in a 3 oz. serving of lean beef.

Iron = 32%
Zinc = 74%
Phosphorus = 16%
Magnesium = 9%
B6 = 32%
B12 =125%
Thiamin = 9%
Riboflavin = 23%
Niacin = 29%
Use the ZIP Charts for Boys and Girls Diets as well as the “Twenty-Nine Ways to Love Lean Beef” chart from the National Cattleman’s Beef Association to answer the following questions. http://www.beefitswhatsfordinner.com/cmdocs/biwfd/18-226%2029%20ways%20love%20lean%20beef.pdf

1. What percentage of 6-11 year old girls do not meet the nutrient requirement for iron?

2. Are more 12-19 year old girls missing the requirement for phosphorus or B12?

3. What percentage of 6-11 year old boys do not meet the nutrient requirement for zinc?

4. Are more 6-11 year old boys missing the nutrient requirement for phosphorus than 12-19 year old boys?

5. Who is missing more of the iron requirement 12-19 year old girls or 12-19 year old boys?

6. Why is it important for young girls and boys to eat a diet that is high in protein? (Hint: Use the Beef Ag Mag).

7. Does a round steak have more or less saturated fat than a T-Bone steak? By how much?

8. Does 95% lean ground beef have more or less total fat than a flank steak? By how much?

9. At a restaurant, should you order a top sirloin steak or a skinless chicken thigh? Why?
Beautiful BOVINE Shapes—Page 19

Trapezoid
1. Perimeter = 29
2. Area = 34
3. Perimeter = 37
4. Area = 69

Rectangle
5. Perimeter = 26
6. Area = 40
7. Perimeter = 46
8. Area = 126

Why Eat Beef—Page 29
1. 22%
2. Phosphorus
3. 11%
4. No. Boys 12-19 are missing the requirement by more.
5. Girls 12-19
6. Protein is needed to build, repair and maintain the body.
7. Round steak has 1.1 less grams than the T-Bone.
8. The 95% lean ground beef has 1.2 grams less total fat than the flank steak.
9. The top sirloin would be the better choice because it has eight times more vitamin B12, six times more zinc and three times more iron, while only having a slightly higher fat content.

Caring for Cattle—Page 26
1. 75% of the year
2. 72 pounds
3. 864 pounds
4. 38 cattle
5. 20 pounds
6. 5 pounds soybean & 15 pounds corn
7. 4 pounds
8. 1.2 pounds corn & 2.8 pounds dry hay
<table>
<thead>
<tr>
<th>Activity</th>
<th>Illinois Learning Standards</th>
<th>Illinois Assessment Framework</th>
</tr>
</thead>
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<td>Beef Trivia</td>
<td>15.C.1a; 23.B.2; 23.C.2a</td>
<td></td>
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<tr>
<td>Where's the Beef?</td>
<td>3.C.2a</td>
<td>3.3.01; 3.3.03</td>
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<td>The hAmburGer Paragraph</td>
<td>3.B.2a; 3.B.2b; 3.B.2c; 3.C.2a; 15.A.2a; 15.C.1a; 15.D.2a; 17.A.2b</td>
<td>3.3.14; 3.3.16; 3.3.18; 3.3.19; 3.3.21; 3.3.25; 3.3.27</td>
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<td>Let’s Make a Meal Deal</td>
<td>6.C.2a; 10.A.2a; 10.A.2c; 23.B.2; 23.C.2a</td>
<td>6.4.10; 10.4.01; 10.4.02</td>
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<td>What Cow is this?</td>
<td>1.C.2b; 1.C.2c; 12.B.2b</td>
<td>1.4.12; 1.4.13; 1.4.15; 12.4.09</td>
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<td>Beautiful Bovine Shapes</td>
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