

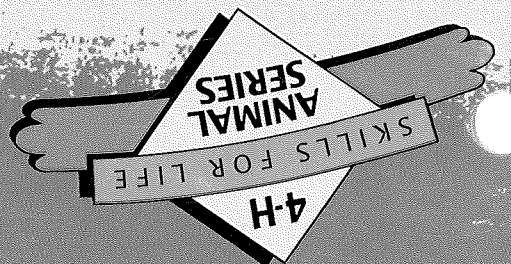


# Beef Youth Activity Guide

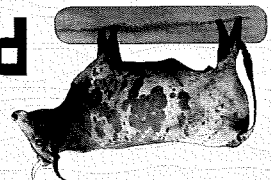


Beef

# THERE'S THE BEEF



# Note to the Project Helper



If you were a project helper for one or more youth involved in completing Beef 1, you know what a great experience this important role is. As a helper you are in a great position to help youth grow and develop in positive ways as they learn about beef and about themselves. You can nurture and cultivate their interest in this project by guiding their planning, helping them carry out their projects and recognizing them for a job well done.

## Your Role

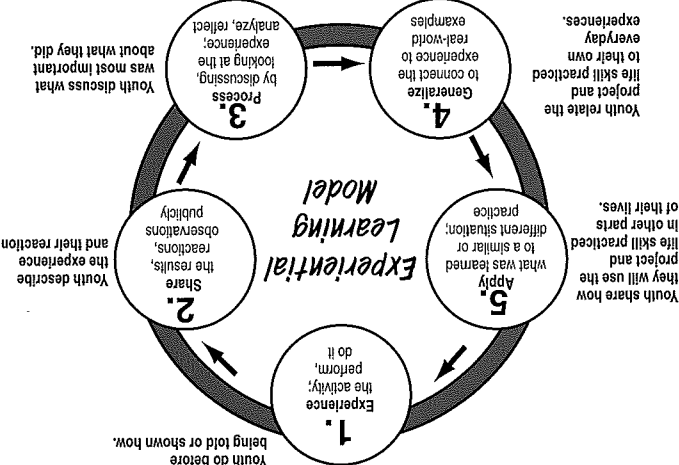
- Become familiar with the material in this activity guide and the *Helper's Guide*
- Support youth in their efforts to set goals and complete each achievement program
- Date and initial the activities on the Beef Achievement Program as the youth completes them
- Help them get to know themselves, including their strengths and weaknesses
- Encourage the use of the experiential learning cycle described on this page

## The Beef "Skills for Life" Series

This guide, *Here's the Beef*, is the second in the series of three for youth, which also includes *Beef 1 Bite Into Beef*, *Beef 3 Leading the Charge* and the *Beef Helper's Guide*. The three youth guides have been designed to be developmentally appropriate for grades 3–4, 5–7 and 6–9 respectively, but may be used by youth in any grade based on their project skills and expertise. All activities in the guides have several parts: A description of the skills to be practiced, discussion questions, suggestions for additional activities and additional helpful information. The "Success Indicator" listed for each activity is an excellent way to evaluate the youth's success. Each of the guides also includes an achievement program to encourage youth to learn more about beef while developing important life skills. Complete this before the youth begins each level and after completing each level.

The fourth publication in this series, *Beef Helper's Guide*, provides additional learn-by-doing activities that can be adapted to the family, the classroom, after school child care, 4-H project groups, clubs or other groups. You'll also find helpful hints about characteristics of youth, life skill development, teaching experientially, another evaluation piece titled "Evaluating the Impact" and meeting ideas as well as answers to many of the activities in the youth guides.

## Experiential Learning Model



Pfeiffer, J.W., & Jones, J.E., "Reference Guide to Handbooks and Annals" © 1983 John Wiley & Sons, Inc. Reprinted with permission of John Wiley & Sons, Inc.

## Good Luck in your role as Project Helper!

This five-step model is included in each activity in this series. As you can see, the youth first attempt the activity on their own. After the youth do as much as they can and write answers to the last question in the process, generalize and apply steps, you then meet together and discuss: What they did? What was important about what they did? How does what they did relate to their lives? And finally, how might they use the life and project skills practiced in the future? Your ability to ask additional thought-provoking questions and to clarify and expand the youth's ideas will add to the educational experience.

## Acknowledgments

**2005 Revision Team:** Jackie Buckley, Coordinator, ND; Stephen Scharer, Liaison, WY; Wendy Sorrell, VT; Carol Rodgers, IL; Sandy Yarger, IN; Susan Kerr, WA; **Design, Illustration and Production:** Northern Design Group, MN.

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# Here's the Beef Contents

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For more on beef... look for these other guides in this set.

**Bite Into Beef - Level 1 BU-08143**




**Chapter 1 - Know Your Beef**  
Identifying Beef Brands  
Locating Beef Parts  
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Planning Your Work, Working Your Plan

**Chapter 2 - Animal Health**  
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Picking Feed Ingredients  
Where, Oh Where is My Call?  
Products

**Chapter 3 - Beef and Beef**  
Judging Beef  
Shopping for Beef  
Recognizing Beef By-products

**Chapter 4 - It's Showtime!**  
Halter Breaking Your Calf  
Filling a Steer  
Showing Beef Cattle

**Leading the Charge - Level 3 BU-08145**



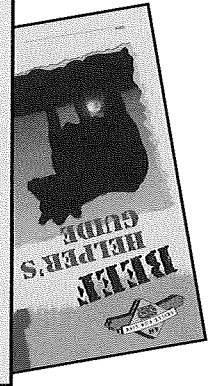
**Chapter 1 Animal Nutrition and Health**  
Surt 'N Turf  
Balancing a Beef Ration  
Let's Talk Hay  
Read it on the Label  
Blocking Bovine Bugs  
Chapter 2 Showing Beef  
Filling for Show  
Chapter 3 Meat Evaluation  
Evaluating a Beef Carcass  
Yielding the Grade

**Chapter 4 EPDs**  
Selecting a Sire

**Chapter 5 Reproduction**  
Exploring Beef Reproductive Systems  
The Heat is On  
A Word with a View  
The LamOze Method

**Chapter 6 Exporting Careers**  
Looking Ahead

**Beef Helper's Guide - BU-08146**



Youth Learning Characteristics  
Developing Life Skills  
Teaching and Learning Experientially

**Chapter 1 Front and Center**  
Producing a Beef Commercial  
Planning the Beef Project Year  
Show What You Know  
Demonstrating Filling Equipment

**Chapter 2 Word Games**  
Playing BEFFagories  
Beef Talk Games  
Fun with Beef Pyramid  
Playing STEAK Bingo

**Chapter 3 Beef Management Practices**  
Keep it Clean  
Moo-rades  
Investigating Medications  
Accepting the End

**Chapter 4 Skill Building**  
Conducting a Beef Quiz Bowl  
Identifying Beef Parts  
Practicing Sportsmanship  
The 4-H Recognition Model  
Answer Key  
Beef Project Meeting Ideas

# Having Fun with the Beef Project

Let's get started! This guide is an important part of the beef project. Beef 2 offers you new challenges and opportunities to explore a wide range of activities related to beef. You'll also have fun meeting new people, becoming better acquainted with your community and expanding your interests and goals. Like Beef 1, an achievement program is included to guide your efforts and provide you with an opportunity to be recognized for meeting your goals. You'll be surprised at the many fun and interesting things you'll learn. Don't be afraid to jump right in, and don't give up if the activity doesn't work out the first time. You're still learning, right? The most important thing is to try. Once you try, then think or talk about what happened or didn't happen and why.

## Beef 2 Project Guidelines

- Do a minimum of seven activities in Level 2 of the Beef Achievement Program each year and complete Level 2 within three years.
- Practice and develop the life skills of making decisions, leading self and others, relating to change and planning and organizing.
- Evaluate your progress by doing the Before and After—What do I know? evaluation.
- Keep the Goals and Highlights page current by setting project goals and recording project highlights you experience.
- Increase your beef knowledge and skills.

## Completing the Activities

The activities will challenge you to explore areas of the project you perhaps hadn't experienced before. Do your best to complete each activity and answer the questions. You only need to write an answer to the last question under Process, Generalize and Apply in Barn Talk. Discuss with your helper each experience. You may need additional resources to complete some of the activities. Beef magazines, the Internet, books, tapes, commodity groups, feed and equipment manufacturers and marketing groups are good resources. The library will also have several references to help you.

Remember this is your own personal project activity guide. As you complete the activities, answer the questions and record your project highlights you'll realize how much you have accomplished in this project. Have fun!

## Your Project Helper

The choice is yours! The person you choose to be your project helper needs to be willing to support your efforts to complete Level 2 of the Beef Achievement Program. Your helper will meet with you to set goals, plan activities, suggest resources to use, discuss each activity with you and date and initial your achievement program each time you have successfully completed an activity. Write the name, phone number and e-mail address of your project helper here:

My Project Helper: \_\_\_\_\_

Phone: \_\_\_\_\_

E-mail address: \_\_\_\_\_





# Beef Quality Assurance



**Beef Project Skill:** Administering Injectable Animal Health Products

**Life Skill:** Making decisions

**Education Standard:** NS 5-8.3

**Success Indicator:** Identify proper injection techniques and location.

**Proper injection site for beef animals.**



Consumers expect beef to be healthy wholesome and free from defects. Injections must be given at the correct location, with proper technique and correct dosage. Treatments should be recorded and complete animal health records should be maintained.

## Taking on the Challenge

### Resources & Materials

- Bananas or oranges – one per student cut in half prior to activity
- Selection of syringes and needles
- Rubber top bottles with colored water-filled prior to activity
- Towels or newspapers to cover table for cleanup
- Record sheets

## BARN TALK

### Shooting the Breeze

- Discuss the different types of injections: – Intramuscular (IM) & Subcutaneous (SubQ)
- Which injection type is easier to do?
- Where do you give injections?

### Show Me the Beef

- What happens if you give the injection in the wrong place?

### Where's the Beef?

- Why would you administer one injection type or the other?

## FACTS

### BQA Facts

Improper injections given in the wrong location (not in the neck) cause injection site lesions and decreases tenderness. Improper route of administration decreases efficacy of animal health products.

Activity adapted from North Carolina 4-H Youth Meat Quality Assurance Program, also adapted by Lisa Pederson ND BQA Coordinator and Jackie Buckley.





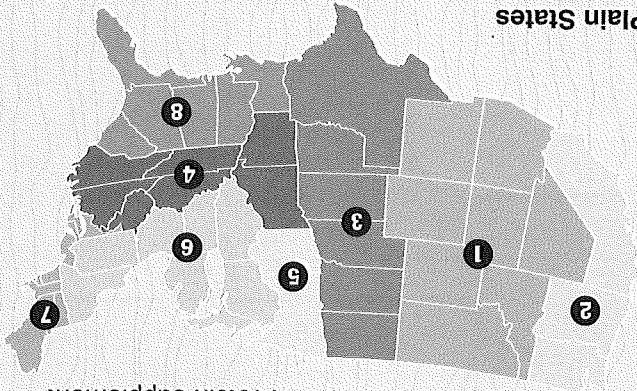
# Sample Rations for 500 lb. Heifer Calves

These rations are designed for gains of 1 1/2 - 2 lbs. per day in good weather. Be sure to supply proper minerals and vitamin A.

Pounds Pounds

5. Upper Midwest		6. Great Lakes Region		7. Upper Northeast	
5.0	Grass hay	6.0	Alfalfa hay	3.5	Grass-legume hay
2.0	Dehydrated alfalfa	4.0	Coarse ground corn	2.5	Coarse ground corn
2.0	Coarse ground corn	2.0	Rollled oats	6.5	Rollled oats
2.0	Rollled oats	2.0	Wheat	0.5	Protein supplement
7.0	Grass hay	3.0	Ground barley	0.5	Cottonseed meal
4.0	Ground barley	2.0	Oats	1.0	Dried beet pulp
1.5	Protein supplement	5.0	Alfalfa hay	5.0	Alfalfa hay
5.0	Steam rolled or	3.0	Ground barley	3.0	Steam rolled or
4.0	Ground barley	2.0	Oats	2.0	Oats
1.5	Protein supplement	1.0	Dried beet pulp	0.5	Cottonseed meal

3. Plain States		4. Mid-south States		8. Southeast States	
6.0	Grass-legume hay	6.0	Grass hay	5.0	Grass hay
6.0	Coarse ground corn	0.6	Protein supplement	5.0	Dehydrated alfalfa
6.0	Coarse ground corn	4.0	Coarse ground corn	4.0	Coarse ground corn
0.6	Protein supplement	2.0	Rollled oats	2.0	Rollled oats
0.6	Protein supplement	0.4	Protein supplement	1.0	Cottonseed meal



## Beef It Up!

1. Obtain samples of all of your feeds, and send them to a laboratory for analysis. Compare the results to the figures in the Nutrient Requirements of Beef Cattle.
2. Compare the ration you feed your beef animal to the nutrient requirements shown in the Nutrient Requirement table. Share what you find with your helper.

## BarnTalk

### Shooting the Breeze

- Why might you change your ration as your animal grows and gains weight?
- What feed ingredients are common in your area?

### Show Me the Beef

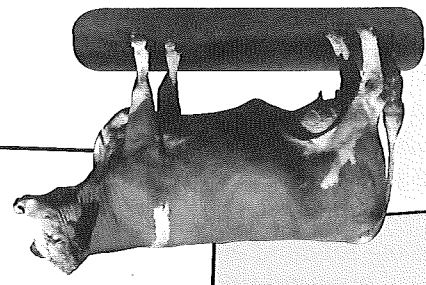
- What is the difference when feeding steers in the feedlot and feeding individually for a show?
- What did you learn about the purpose of different feeds?

### Where's the Beef?

- What would happen to your calf if you did not adjust your beef ration?

### Beef's Future

- What did you learn about rations that you can use with your beef animal?



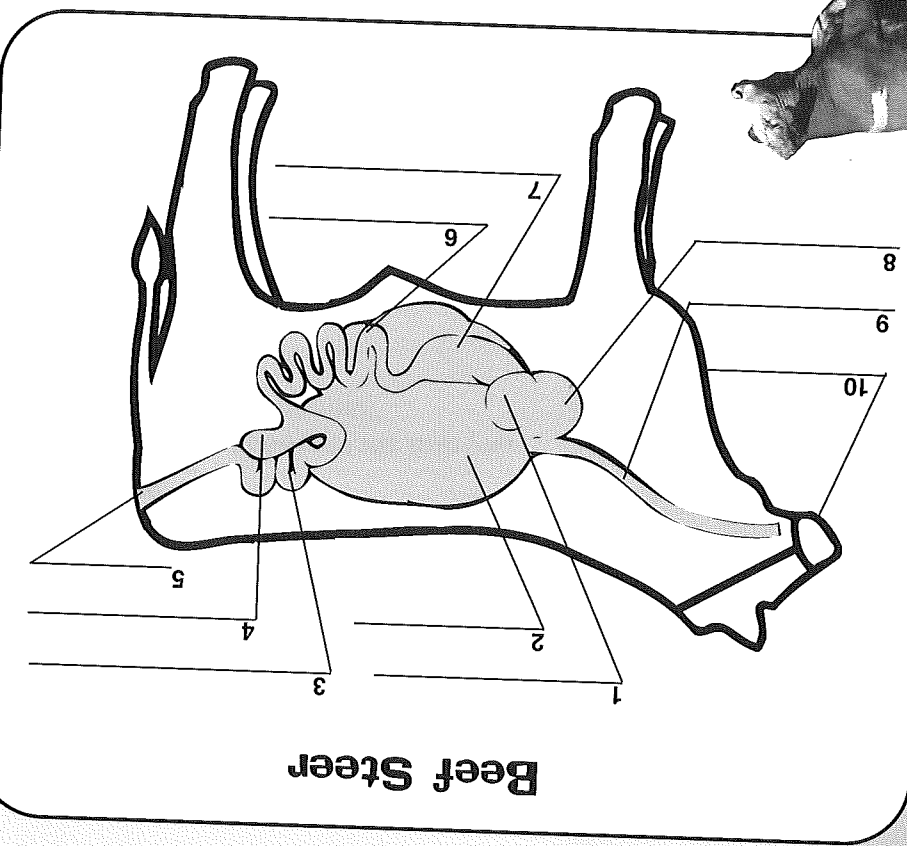
- Ruminant Digestive System Parts**
- Abomasum
  - Anus
  - Cecum
  - Esophagus
  - Large intestine
  - Mouth
  - Omasum
  - Reticulum
  - Rumen
  - Small intestine

In the outline of the beef animal, label the parts of the ruminant's digestive system.

### Taking on the Challenge

Why can cows, goats and sheep eat grass and other farm animals can't? Did you know that beef cattle have a different type of digestive system than swine or chickens? Rather than a small stomach like you have, a cow has a very large stomach with four parts called the rumen, abomasum, omasum and reticulum. Each of these compartments is responsible for helping to digest feed such as hay and corn cobs.

If the right combination of nutrients are not provided, cattle develop deficiency symptoms like slow gains, weight loss, hair loss, brittle bones or many other potential problems. This activity will help you understand how feed moves through the digestive system of a beef animal.

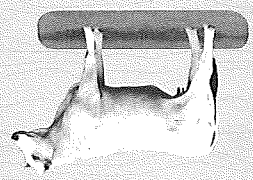


**Beef Steer**

A cow will get a balanced diet by grazing on pasture.



## Following Feed through the Digestive System



**Beef Project Skill:** Understanding a beef animal's digestive system

**Life Skill:** Learning to learn

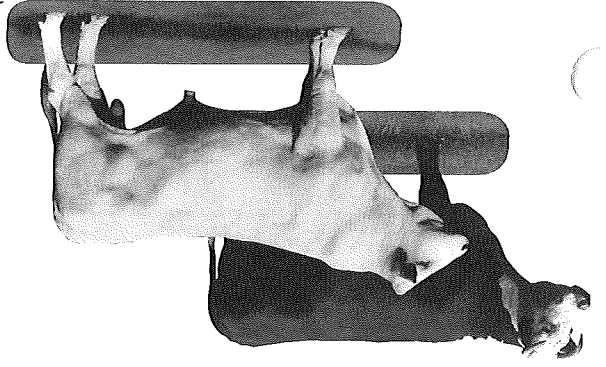
**Education Standard:** NS 5-8.3

**Success Indicator:** Identify parts of a ruminant's digestive tract.



**Beef**  
**Talk Words**

Abomasum Omasum  
Reticulum Rumen



**BarnTalk**

**Shooting the Breeze**

- What are the major parts of a ruminant's digestive system?

**Show Me the Beef**

- Why do beef animals chew their cud?
- What may happen if your animal did not eat enough hay?

**Where's the Beef?**

- Why can a cow eat large amounts of hay and a pig can't?

**Beef's Future**

- What did you learn in this activity to help you better manage your beef project?



**Functions**

- Food intake
- Storage
- Digestion
- Absorption
- Elimination of waste

**The Digestive System of the Beef Animal**

As the food moves through the digestive tract all feedstuffs are broken into smaller and smaller units so they can be used or eliminated. Much of this "breakdown" is done by the microbial population (bugs) in the ruminant's stomach. Normally, about four days are required for feed to pass through the digestive tract of ruminants.

Here are the four compartments of the ruminant's stomach and what they each do.

**Rumen** - Functions as a storage area for food. Aids in the breakdown of coarse particles through bacterial action. It is the major site of fermentation by the bacteria.

**Reticulum** (honeycomb) - Honeycomb-like walls retain foreign materials that could injure the digestive system. Also called the hardware stomach. Functions are similar to the rumen.

**Omasum** - Liquid is removed from the feed by muscle contractions. Breaks up coarse particles in feed.

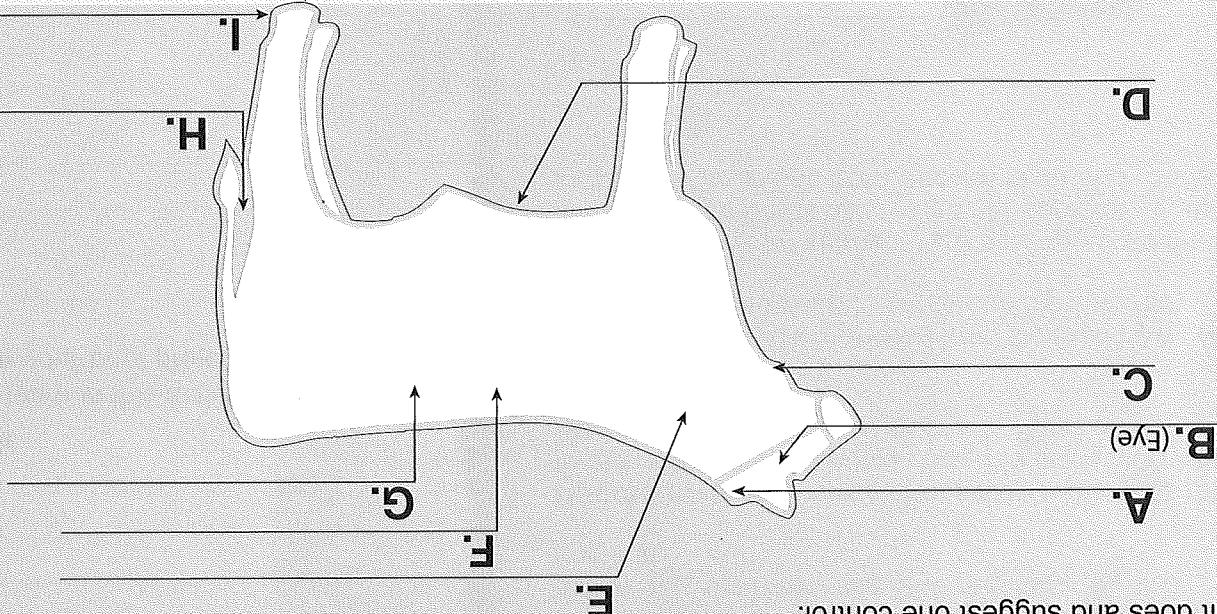
**Abomasum** (true stomach) - Digestive juices that are needed to break down food are secreted. These include: hydrochloric acid, pepsin, renin and lipase.

1. Give a presentation to your beef group how microorganisms are involved in the digestion of feed ingredients in the ruminant's stomach.



2. Describe to your helper how the ruminant's digestive system changes from the time of birth to maturity.

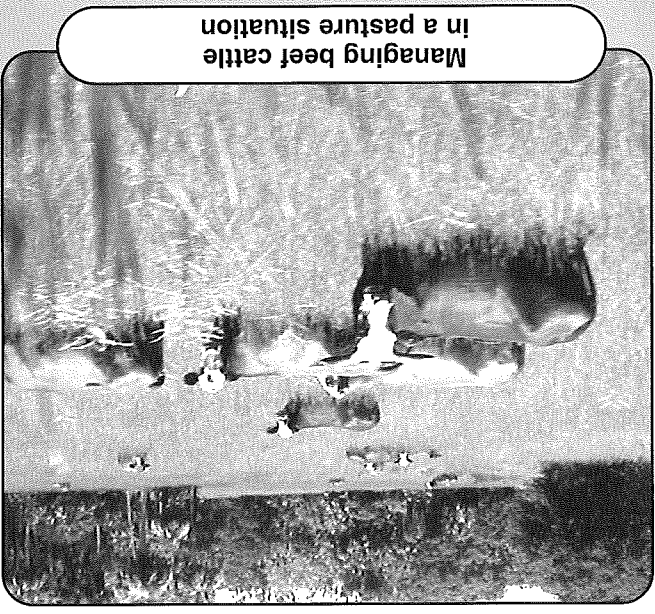
Parasites	Type of Damage	Control
1. Biting lice		
2. Sucking lice		
3. Black flies		
4. Horn flies		
5. Mosquitoes		
6. Heel flies		
7. Horse flies & deer flies		
8. Mange mites		
9. Ticks		



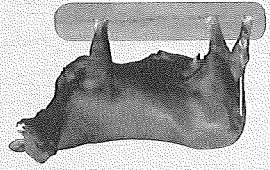
On the cattle diagram, place the number and name of each external parasite on the line that points to the area of the body where that parasite is usually found. Some parasites are found in multiple areas, so you can put some numbers on more than one line. Next to each parasite write what type of damage it does and suggest one control.

### Taking on the Challenge

**D** Do you have a younger sibling who constantly pesters and annoys you? (Maybe YOU pester someone else!). Animals have pests, too—they are called parasites. Some live inside the body, some live outside. This activity will help you discover the negative effects of external parasites on cattle health. You'll also figure out how to reduce stress for both your animal and yourself!

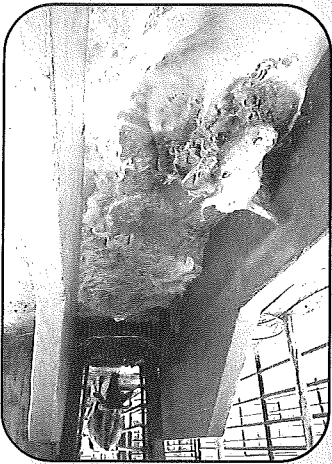


## Mange on the Range



**Beef Project Skill:** Identifying and controlling external parasites of cattle  
**Life Skill:** Stress management  
**Education Standard:** NS 5-8.3  
**Success Indicator:** Describe control of common external pests of cattle.

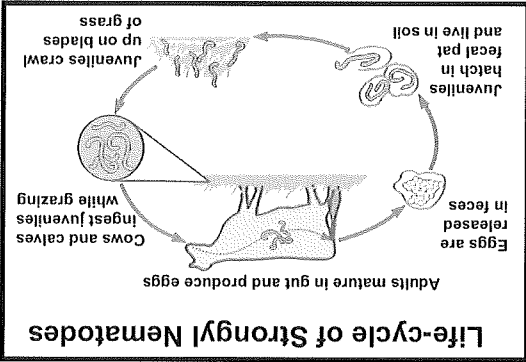
# Beef External Parasites



In some parts of the U.S., cattle dipping vats are an effective way to control important parasites such as ticks.

You don't like to be bothered by flies and mosquitoes and neither do cattle! Common external parasites of cattle include biting and sucking lice, ticks, mites, heel flies, horn flies, black flies, mosquitoes, horse flies and deer flies. Even fleas can be a problem sometimes.

Effects of these pests include blood loss, disease transmission, skin wounds, infections, pain, "worry" and stress. If animals are being bitten by pests, they kick or stamp their feet, swish their tails, throw their heads, flee the area and so on. All this activity uses up energy and interferes with eating, gaining or other production. Animals can injure themselves, other animals or even their caretakers as they try to avoid external pests.



Control measures include good manure management, removing garbage and wastes, using approved external insecticides, using fly control ear tags, using injectable wormers at specific times, providing shelter, preventing water stagnation, keeping animals dry, making sure animals are exposed to sunshine and isolating affected animals. Do what it takes to reduce the stress caused to your cattle by external parasites—they will reward you with faster gains and greater production. Plus, it is just the right thing to do!

## Beef It Up!

1. Collect examples of external parasites. Preserve and label them. Then show your collection to others.
2. Check local farm supply stores for over-the-counter parasite control products. How are they applied? What parasites do they control? How much do they cost? What is the withdrawal time?
3. Create a chart and share it with your group.

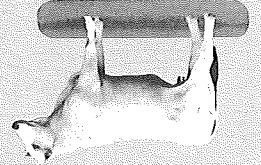
## BarnTalk

- ### Shooting the Breeze
- What parasites are a problem for your animal?
  - What new parasites did you learn about?
  - Show Me the Beef  
What are some consequences of having parasites on your animals?
  - Why is it important to understand the life cycle of parasites?

- ### Where's the Beef?
- What are some sources of stress in your life?
  - How do you manage or deal with stress?

- ### Beef's Future
- What parasite control program will you now develop to reduce your animal's stress?
  - How can you reduce other sources of stress for your animal?

# Live Long and Prosper



**Beef Project Skill:** Identifying safety concerns  
**Life Skill:** Personal safety  
**Education Standard:** NS.5-8.6 Personal and Social Perspectives  
**Success Indicator:** Identify livestock safety hazards.

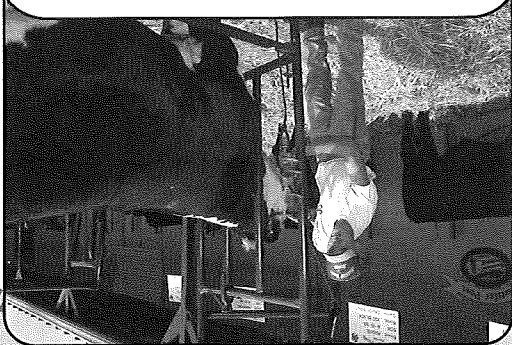
Have you ever seen someone get kicked and wonder why? Have you been working around your animal and tripped and fell because something was in your way? These accidents sometimes happen, but did you know that you could help prevent them? By participating in this activity you could do just that!

## Taking on the Challenge

You are the safety chief and it is time for an inspection. Take a moment and think about some places where safety is important for you, your family, your friends and your beef animals. These places include the barn, pasture, grooming area, storage and many other locations. Make a list of as many of these places as you can think of. Inspect a work area for beef cattle and write the

list of safety concerns about that work area. Pick one area and design a poster that contains safety guidelines for everyone in the work area. Hang the poster in or near the area and also share the poster with others. Repeat this activity for as many work areas as you wish to make safe. Show two of your posters in miniature below.

Restrain your animal securely to make sure that you can handle it safely.



Work Area Inspection

Places Safety Is Important

1. Take your poster or set up a booth at a county fair.
2. Contact an inspector and ask if you can go on an inspection with her.
3. Visit a fire or police station and ask how an inspection is done. Share with a group where you went, what you did and what you learned.

### Beef It Up!

- Safety Inspector Career Areas**
- Health
  - Safety
  - Food (Meat, Fruit, Vegetables, etc)
  - Farm Safety
  - Police
  - Security
  - OSHA

- Be calm, quiet and steady
- Always tie halters with a slipknot
- Avoid clutter and garbage in and around your work area
- Keep all facilities in good, working condition
- Have adults check all electrical wiring
- Train your cattle when they are young
- Tie only to a solid wall or post (avoid empty water tanks, flimsy gates, small trees, etc)
- Allow your animal to get used to the different sites and sounds of people before a show
- Never tie a halter around your hand
- Water and electricity do not mix
- Have a professional trim your animal's hooves
- Use the proper equipment for each job
- Never leave an animal unattended



## Safety Tips

## BarnTalk

### Shooting the Breeze

- What areas did you select?
- What did you learn about inspecting an area?

### Show Me the Beef

- How did your guidelines help others to be more aware?
- Why is it important to identify and practice safety measures?

### Where's the Beef?

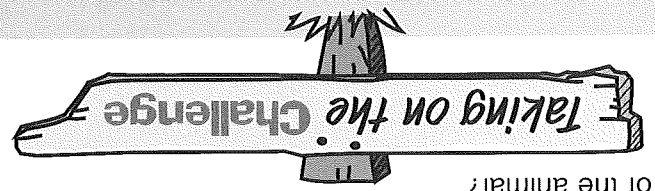
- What other safety inspections can you do to make things safer for you, your family, your friends, or your animals?

### Beef's Future

- How can you share safety concerns and issues with others?

What I Believe		Situation	OK	Not OK
	Clipping your steer/heifer for the show			
	Trimming your calf's hooves			
	Registering a calf born December 28 <sup>th</sup> as January 1 <sup>st</sup> for show			
	Painting black hooves black			
	Tranquilizing your calf due to its temperament			
	Holding a steer off water for two days to make weight			
	Painting white legs black			
	Giving your steer steroids to improve its muscling			
	Using ointment from your home medicine cabinet on your animal			
	Having a professional fit your steer/heifer for you			
	Using fake hair when fitting your animal			
	Use a painkiller to help your animal walk better at a show			
	Use a painkiller at home to help your animal walk better			
	Help an animal get over a runny nose by using a painkiller two days before the fair			
	Injecting air or another substance under the skin to produce a thicker animal			
	Feeding nutrient supplements in your feed			
	Paying someone else to care for and feed your animal			
	Dehorning and castrating animals			
	Inserting genes and growth stimulants			
	Forcing water in the stomach of an animal to meet the weight requirement			

Listed below are some situations that you may have experienced already. Decide for yourself if each one is OK or Not OK. Share this with another person who is familiar with beef cattle. Discuss why you believe what you do.

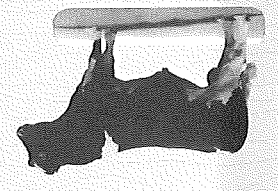


Ethics are the moral principles that identify actions as acceptable or unacceptable. Throughout your participation in the beef project you are faced with many decisions. Some are easier than others. If you are not sure, ask yourself these three questions; does it violate the Food and Drug Administration Law, is it fraud and does it compromise the welfare of the animal?



These youth are working as a team to make this beef animal look great.

# Becoming Ethically Enlightened Forever



- Beef Project Skill:** Determining and forming the basis for a moral
- Life Skill:** Thinking critically
- Education Standard:** NSS, C.K-4.5 Roles of the Citizen
- Success Indicator:** Make an ethical decision.



# BARNtalk

## Shooting the Breeze

- What do you believe about each situation?

## Show Me the Beef

- How did you decide which was ethical or unethical?

## Where's the Beef?

- Animal welfare/rights are being discussed more and more.
- What are the concerns the public is interested in?
- Discuss why it has become an issue?
- What did you learn about yourself as you discussed the issues?

## Beef's Future

- How will you act differently in the future?

Adapted by Wendy Sorrell, University of Vermont Extension from original activity *Practicing Ethical Behavior* by Larry Tibbs and Josh Merrill.

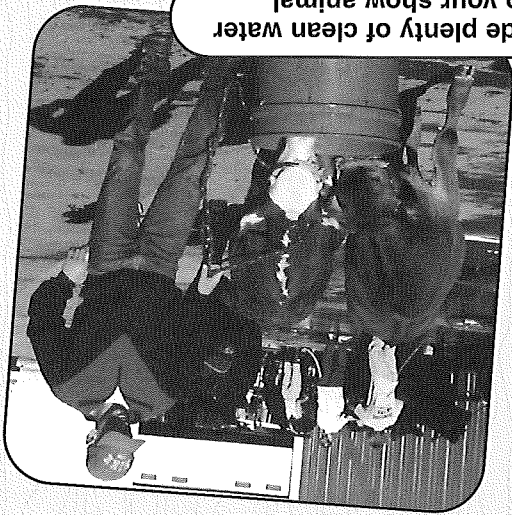
# FACTS

## Animal Welfare

Society has generally accepted the use of animals for biomedical research, food, fur, fiber and as companions. Acceptance of animal use has been based on the potential benefits that each use could yield for human suffering from disease, increasing the availability of high-quality protein, clothing and companionship. Along with acceptance of the use of animals has come the responsibility of providing appropriate and humane care. Humane care includes proper husbandry, health care, alleviation of pain and suffering and other obligations to the animal.

In principle, farmers and ranchers advocate humane care for the welfare of their animals. Historically the public has entrusted them with making appropriate decisions regarding animal care and use. However, the change in scale of many operations have caused concern for the individual care animals may or may not receive and whether current dedication to animal welfare will be compromised for economic efficiency and growth.

Provide plenty of clean water to your show animal.



1. Tour a local university where animal research is being conducted.
2. Discuss with your helper, beef group or family your beliefs about animal rights and animal welfare.

## Beef It Up!


The guesses of your partner

Record what you did here

The word on the card



Meeting a beef animal's basic needs can result in a winning animal.

Observe your calf when you come to feed it, or when you bed clean straw, or when you stroke it gently on its neck, or when you have accidentally surprised it. Write down on small cards one word to describe different situations like: hot, cold, thirsty, hungry, scared, surprised, content, etc. Select a partner or your helper and ask them to guess the word by your actions as if you were the calf when you pick a card from the stack. Then talk about what you were trying to show and what you observed calves doing in that situation.

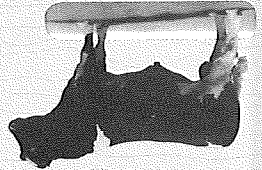
### Taking on the Challenge

You know what makes you happy or sad, hot or cold, what hurts and what feels good. You can share your feelings by talking to someone, but your calf can not. Your calf communicates through actions. You can

observe your calf on how it reacts to hunger, weather changes, or environmental situations. The safety, comfort and happiness of your calf depends on how you care for it.

**Beef Project Skill:** Meeting animal's basic needs  
**Life Skill:** Empathy  
**Education Standard:** NS.K-4.3 Life Science  
**Success Indicator:** Interpret animal behavior to provide needed care

## Be Nice to Beef



# BARN TALK

## Shooting the Breeze

- How did you feel when you were trying to show the situation as if you were a calf?
- What was easy about it? What was difficult?

## Show Me the Beef

- How did you decide what action to do when you picked a card?

## Where's the Beef?

- What are the calf's basic needs?
- Why is it important for you to take care of your calf?

## Beef's Future

- How will understanding the calf's needs help you take better care of it?
- What can you do to teach others about the needs of animals?

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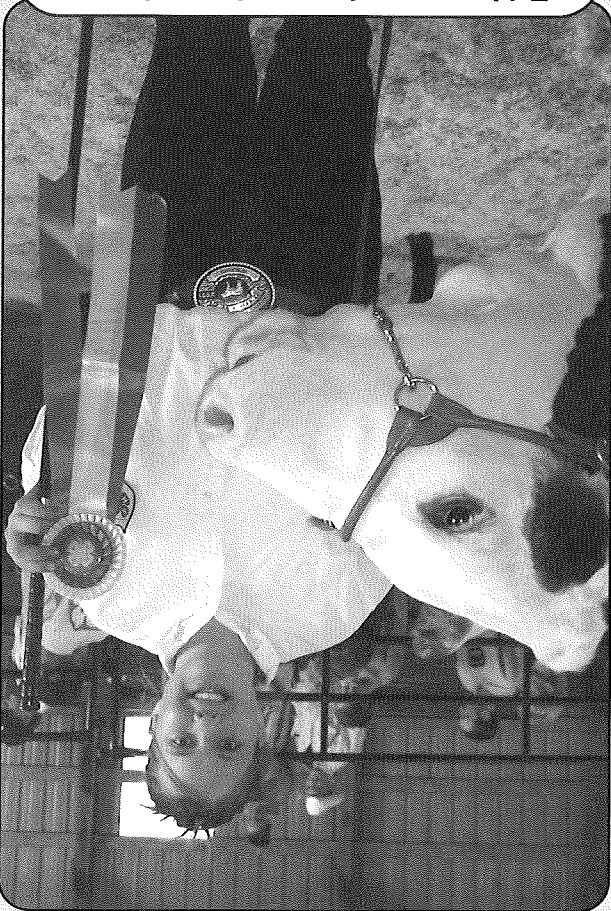


## Basic Animal Care

Every animal has basic needs: food, water, shelter and comfort.

Beef animals rely on their owners to provide all these needs. They let you know what they want and how they feel by the way they act. By watching your beef, you will know what they need.

Taking good care of your animal is simply the right thing to do.



Taking care of my project animal is rewarding.

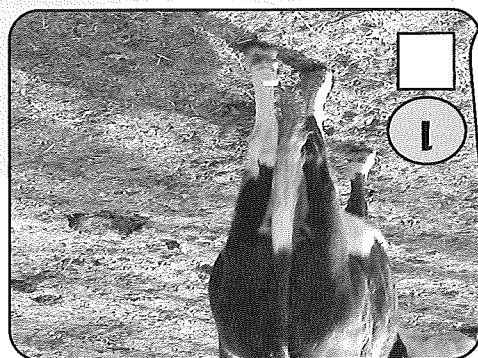
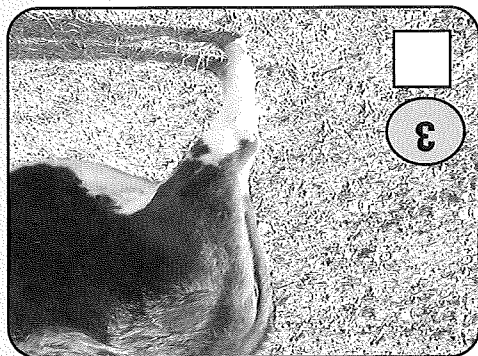
## Beef It Up!

1. Talk to beef producers, veterinarians, or others who raise beef about caring for their animals. Find out how they keep the animals clean and content. Share what you learned with other Beef Project members.



**Beef Talk Words**

Calf kneed, Knock-kneed, Pigeon-toed, Sickle hocked, Splay footed



**Reasons Note Card**

Class \_\_\_\_\_

I placed this class of \_\_\_\_\_ over \_\_\_\_\_ in the top pair because \_\_\_\_\_

I placed \_\_\_\_\_ over \_\_\_\_\_ in the bottom pair because \_\_\_\_\_

I admit \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

I grant \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

Going to the middle pair, I placed \_\_\_\_\_ over \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_ and placed him last because \_\_\_\_\_

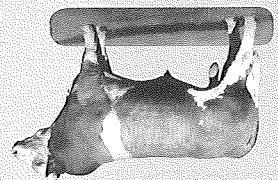
However, I faulted \_\_\_\_\_

Match the correct description number to the correct drawing. Then, write reasons judging and comparing the leg structures of the four animals.

**Taking on the Challenge**

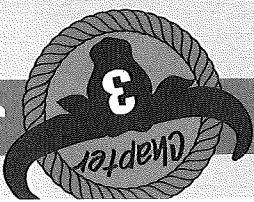
In order for a beef animal to grow properly, and be successful in the show ring, they must have the correct leg structure and placement. This activity will help you identify and evaluate leg structures.

- a Post-legged Set of Feet & Legs
- b Correct Set to Feet & Legs
- c Cow-hocked Set of Feet & Legs
- d Sickle-hocked Set of Feet & Legs



**Evaluating Leg Structure**

**Judging Beef**

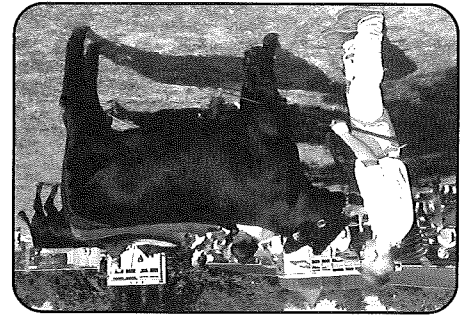


**Beef Project Skill:** Evaluating beef leg structure

**Life Skill:** Making decisions

**Education Standard:** N S 5-8.3

**Success Indicator:** Identify and evaluate beef leg structures.



Setting the feet correctly is important when exhibiting your beef animal.

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● How are you going to use this information in selecting your next animal?

### Beef's Future

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● How do you make decisions when you have several alternatives to select from?

### Where's the Beef?

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● How would you describe a correct leg structure?

### Show Me the Beef

● How did you determine which picture went with which description?

### Shooting the Breeze

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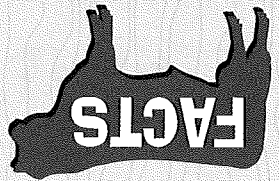
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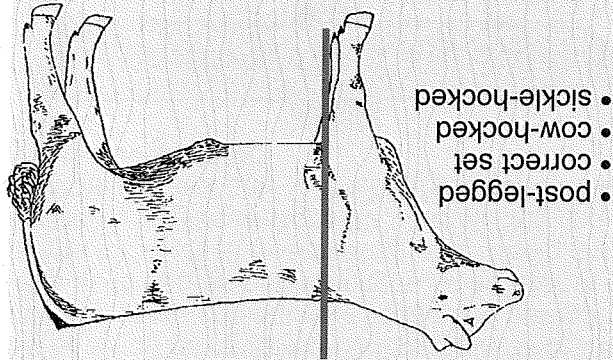
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# BARNtalk

## Ideal Feet and Legs

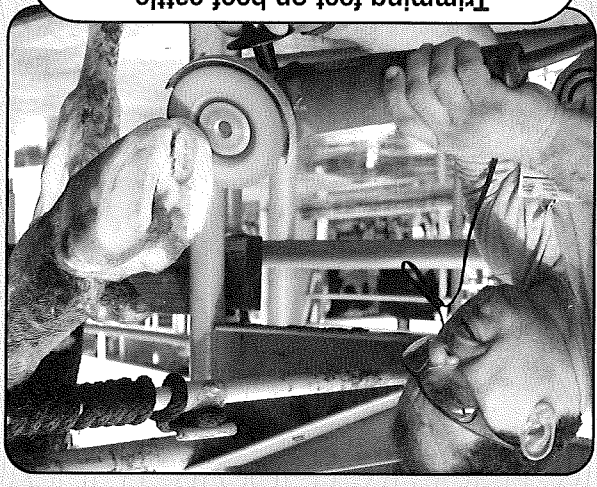


On an ideal animal viewed from the side, you can draw a straight vertical line from the top point of the shoulders down through the knee, pastern and hoof of the front leg.



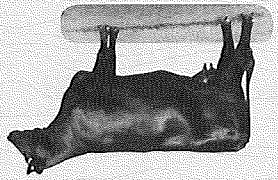
The legs need to be straight and set down square when viewed from the front. The same is true for the rear legs when viewed from behind. From the side the rear legs should be fairly straight with just enough bend at the hock joint to ensure freedom of movement. It is important that the legs don't set too far under or behind the calf to allow a long easy stride that follows in the track left by the front legs.

Trimming feet on beef cattle can correct minor feet and leg structure problems.



## Beef It Up!

1. Observe someone who is trimming feet and explain the technique to your helper.



# Judging Breeding Heifers

**Beef Project Skill:** Judging beef cattle and presenting oral reasons and persuasion

**Life Skill:** Communicating through presenting oral reasons and persuasion

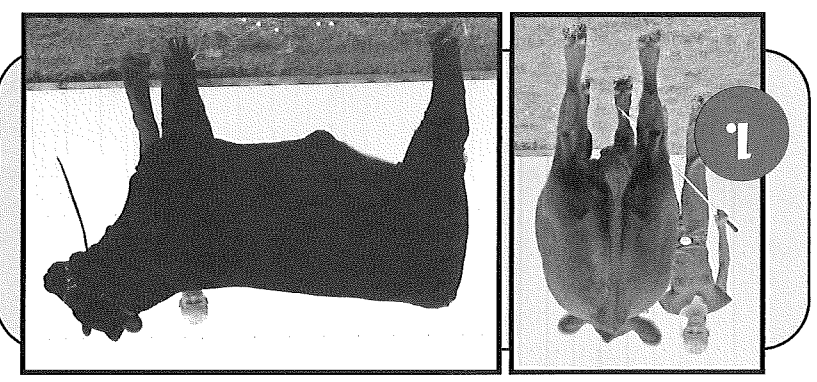
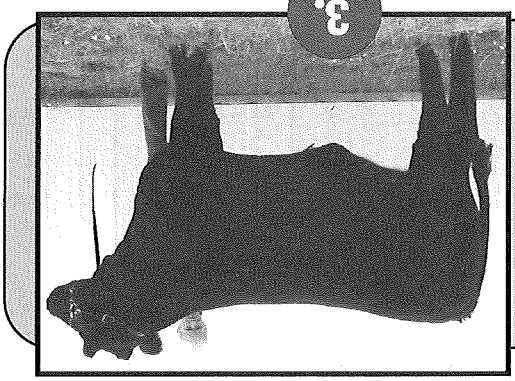
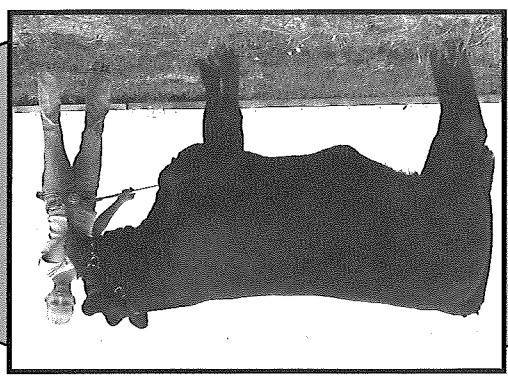
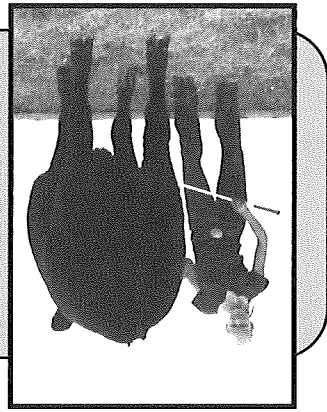
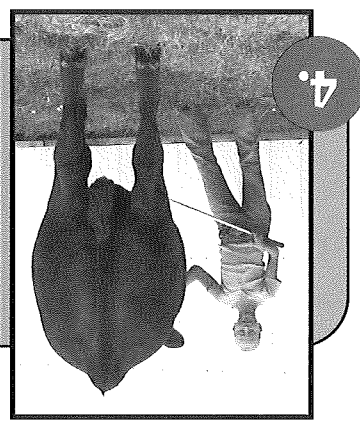
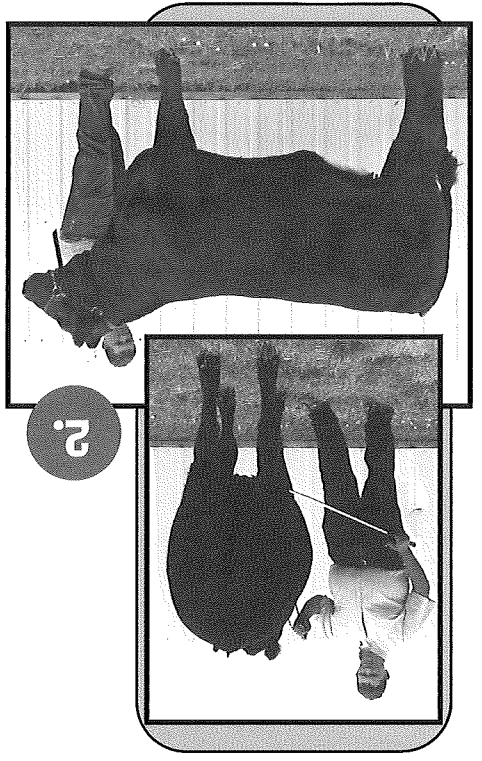
**Education Standard:** NL-Eng.K-12.3

**Success Indicator:** Place a class of animals and present reasons.

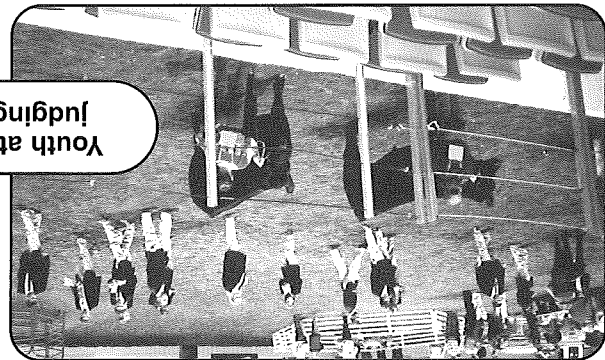
By now you have learned the body parts of beef animals, some comparative terms and perhaps have even had an opportunity to select steers or heifers for yourself or someone else. Being able to judge and give reasons for your placing is a valuable skill not only in the beef project but also in your everyday life.

## Taking on the Challenge

Record your placings of this class of Shorthorn Heifers. Write your notes on the reasons card, practice your reasons and then present them to your helper without notes. Then, place a class of live heifers and present your reasons. Ask your helper to give you feedback on accuracy, delivery, completeness, length and use of comparative terms. Have fun!



### Limousin Heifer Class



Youth at a national Judging contest.

# BARN TALK

## Shooting the Breeze

- How did you place the heifers?
- How did you place the heaviest muscled animal, the longest bodied animal, the most structurally incorrect animal?

## Show Me the Beef

- What differences did you notice between each pair of heifers?
- What terms did you use to describe these differences?

## Where's the Beef?

- What criteria did you use to select your own animal?

## Beef's Future

- How has learning to judge and giving reasons helped you communicate better with others?

## Reasons Note Card

Class \_\_\_\_\_

I placed this class of \_\_\_\_\_

I placed \_\_\_\_\_ over \_\_\_\_\_ in the top pair because \_\_\_\_\_

I grant \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

Going to the middle pair, I placed \_\_\_\_\_ over \_\_\_\_\_ because \_\_\_\_\_

I admit \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

I placed \_\_\_\_\_ over \_\_\_\_\_ in the bottom pair because \_\_\_\_\_

I realize \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

However, I faulted \_\_\_\_\_ and placed her last because \_\_\_\_\_

# FACTS

## Comparative

## Terms for Judging

## Beef Heifers

Successful judges use comparative rather than descriptive terms. Negative terms are listed in italics.

### Frame and Growth

- Growthier/earlier maturing
- Longer framed/shorter framed
- Larger outlined
- Wider based/narrower based

### General Appearance

- Stronger topped/weaker topped
- Smoother shouldered/coarser shouldered
- Higher volumed
- Deeper ribbed
- More (width, spring, arch, shape) through (upper, middle, lower) portion of rib

### Muscle

- Greater dimension of muscling
- Heavier boned/lighter (ruggedness of bone)
- More width from stifle to stifle
- Expressively muscled
- Natural muscling

### Condition

- Cleaner, trimmer/wastier
- Cleaner brisket/heavier brisket

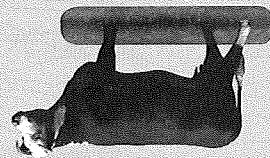
### Lead in granting terms

- However, I will grant...
- On the other hand...
- I did recognize that...
- Admittedly...

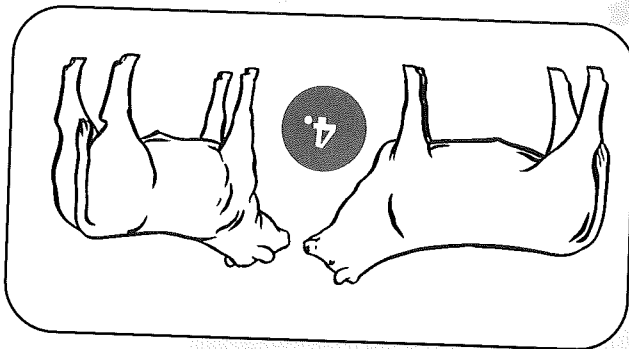
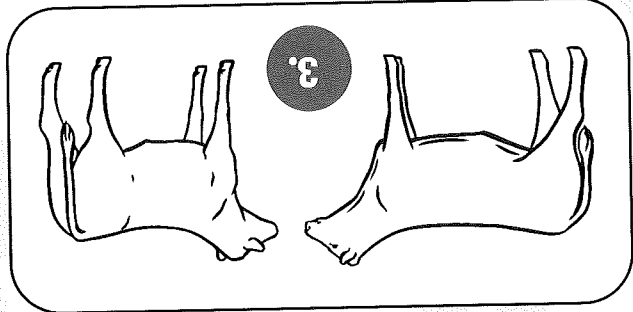
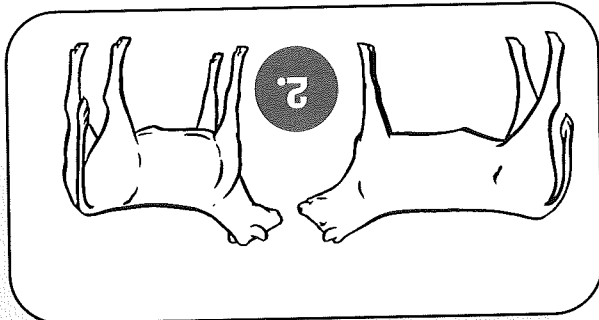
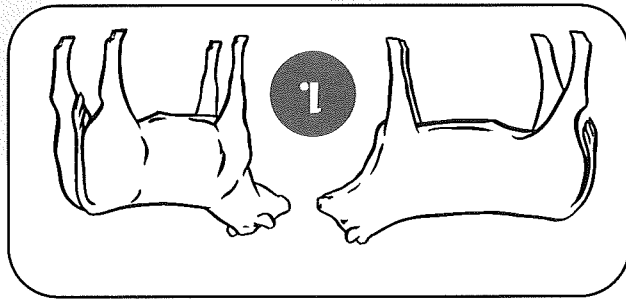
## Beef It Up!

1. Participate as a member of a beef judging team.
2. Assist a younger member to select a younger member to select an animal.
3. Present a set of reasons on a class of beef animals to a group.

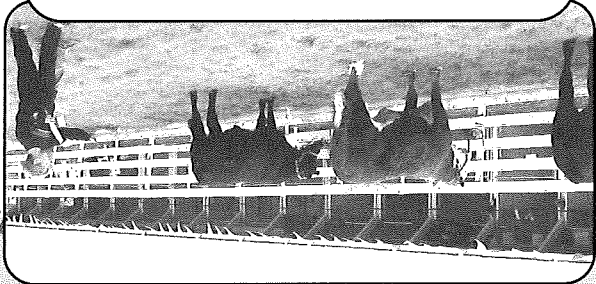
# Presenting Oral Reasons



In the beef project you have probably had several opportunities to practice judging beef cattle. Are you able to give good oral reasons to explain your placings? You've had practice learning the parts, placing animals and writing short reasons in this beef series. If you would like to become an even better judge and perhaps judge professionally this activity will help you.



**Beef Project Skill:** Judging beef cattle  
**Life Skill:** Communicating with others  
**Education Standard:** NL-Eng K-12.3  
**Success Indicator:** Present oral reasons on a heifer class.



Evaluating a class of market steers.

## Taking on the Challenge

Place the class of heifers and write your own set of reasons on the class. Also, determine what cuts (differences) you would give to each pair. In the Beef Facts section are tips for each part of a set of reasons. After you have written your reasons, practice giving the reasons without notes to your helper or another family member.

### Reasons Note Card

Class \_\_\_\_\_

I placed this class of \_\_\_\_\_

I placed \_\_\_\_\_ over \_\_\_\_\_ in the top pair because \_\_\_\_\_

I grant \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

Going to the middle pair, I placed \_\_\_\_\_ over \_\_\_\_\_ because \_\_\_\_\_

I admit \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

I placed \_\_\_\_\_ over \_\_\_\_\_ in the bottom pair because \_\_\_\_\_

I realize \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

However, I faulted \_\_\_\_\_ and placed her last because \_\_\_\_\_



# BARN TALK

## Shooting the Breeze

● How did you organize your reasons?

## Show Me the Beef

● What makes a good set of oral reasons?

## Where's the Beef?

● How can learning to give oral reasons help you be a better communicator?

## Beef's Future

● In what future careers could you use your judging skills?

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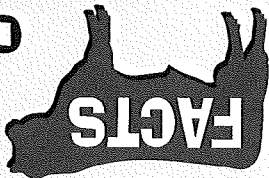
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## Organizing Reasons



A judging class is made up of four animals. Reasons are given by comparing three pairs of animals: top pair, middle pair, bottom pair and explaining why one animal is better than another.

Organization of reasons is a must if all differences are to be discussed in a logical order. Reasons are divided into the following sections:

- Introduction
- Top pair paragraph
- Middle pair paragraph
- Bottom pair paragraph
- Bottom individual paragraph

**Introduction**  
The introduction to a set of reasons is usually the same except for the name of the class and the placing. Example: for a class of yearling heifers placed 4-3-2-1, the introduction might be as follows: "I placed this class of yearling heifers 4-3-2-1."

### Top, Middle and Bottom Paragraphs

The three paragraphs within a set of reasons are all organized in much the same manner. Each paragraph is composed of a series of sentences which compares the two beef animals in the particular pair.

The first part of the paragraph is the introduction which introduces the paragraph. Continuing the example of the yearling heifer class, the introduction would be, "In my top pair I placed 4 over 3 because..."

The next part of the first sentence is the topic sentence and should contain the most important factor involved in the placing. "...because 4 was larger framed and longer legged." This sentence should leave no doubt in the reason taker's mind that 4 was larger than 3 and that difference was the most important factor involved in placing that pair of heifers.

The furthermore sentence is devoted to the next largest difference between the two animals and our example class might read, "Furthermore, 4 was a more feminine heifer showing more refinement about her head, a cleaner, neater throat and a longer, cleaner neck." Because of the way in which it is said, it is obvious that you feel that 4 is a more refined heifer. Yet by putting this statement second, you have said differences in femininity are not as large as differences in frame.

Continued on next page



1. Serve as the judge or apprentice judge at a club or county beef show or pre-fair event.
2. Conduct a practice judging day for youth in your county.

**Organizing Reasons (continued)**

**In Addition Sentence**

The in addition sentence may be used alone or along with an also sentence. Whether one or both are used depends on whether the remaining differences between the animals are large enough to justify the use of both sentences. Assuming in the class of heifers, number 4 is an easy top, these sentences might read:

*"In addition 4 was a more level, stronger topped heifer that stood wider when viewed from behind."*

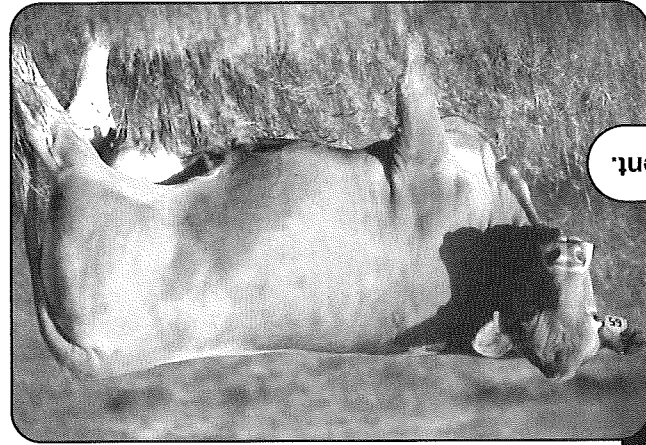
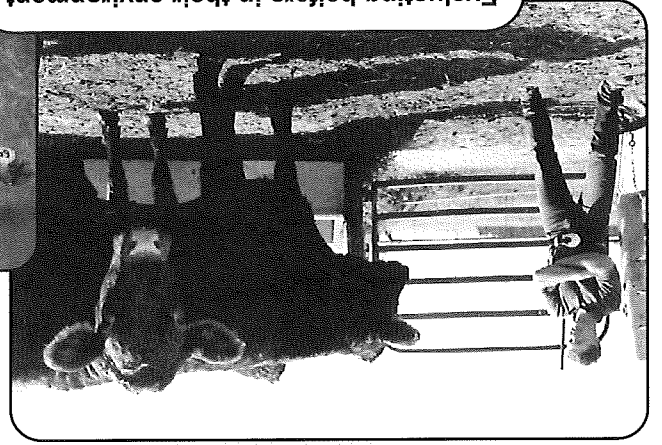
**Grant Sentence**

Next is the grant sentence. The grant sentence admits that the lower placed animal in the pair has some traits superior to the higher placed animal. The grant sentence may well be the most important sentence in the paragraph, particularly in a close placing where others may have switched the pair.

If the differences or points in which the bottom animal in a pair was superior are all brought out and the reason taker realizes that you saw the difference, but simply switched the pair, he or she may not take off many points. On the other hand, if the member switched the pair and had no grant sentence or a very weak one, then probably the reason taker would take off more points.

A well worded grant sentence is essential. In the heifer class, if the pair was not close the grant sentence may read: *"I grant, however, that 3 showed more depth of heart and hind rib indicating more body capacity."*

Evaluating heifers in their environment.



*"Realizing I was adequately muscled, I nonetheless fault her and left her at the bottom of the class because she was coarse about her head and neck, short and bunchy in her muscle and stood extremely cow hocked when viewed from behind."*

**Bottom Individual Paragraph**

If the bottom animal was an easy last place and grants over the third place animal are very minimal, then the last place animal should be criticized to let the judge know you really saw the animal. Remember that, although they might be hard to find, all animals have some strong points. Call that a grant to the class. A typical bottom individual paragraph might read:

After having finished the discussion of the top, middle and bottom pairs, all that remains is a description of the bottom individual and the closing statement.

**Bottom Individual Paragraph**

If the bottom animal was an easy last place and grants over the third place animal are very minimal, then the last place animal should be criticized to let the judge know you really saw the animal. Remember that, although they might be hard to find, all animals have some strong points. Call that a grant to the class. A typical bottom individual paragraph might read:

*"In my middle pair, I placed 3 over 2, because..."*

*"In regard to my bottom pair, I placed 2 over 1 because..."*

The paragraphs pertaining to the middle and bottom pair are composed in the same manner as the top paragraph except with different introductory statements.

The introduction of these two paragraphs might read:

*"In my top pair, I placed 4 over 3 because 4 was larger framed and longer legged. Furthermore, 4 was a more feminine heifer showing more refinement about her head, a cleaner, neater throat and a longer, cleaner neck. In addition 4 was a more level, stronger topped heifer that stood wider when viewed from behind. I grant, however, that 3 showed more depth of heart and hind rib indicating more body capacity. However, I criticize 3 as she is short legged and small framed."*

The paragraphs pertaining to the middle and bottom pair are composed in the same manner as the top paragraph except with different introductory statements.

The introduction of these two paragraphs might read:

*"In my top pair, I placed 4 over 3 because 4 was larger framed and longer legged. Furthermore, 4 was a more feminine heifer showing more refinement about her head, a cleaner, neater throat and a longer, cleaner neck. In addition 4 was a more level, stronger topped heifer that stood wider when viewed from behind. I grant, however, that 3 showed more depth of heart and hind rib indicating more body capacity. However, I criticize 3 as she is short legged and small framed."*

**Put it All Together**

If all the sentences are put together, the top paragraph would read:

*"...In my top pair, I placed 4 over 3 because 4 was larger framed and longer legged. Furthermore, 4 was a more feminine heifer showing more refinement about her head, a cleaner, neater throat and a longer, cleaner neck. In addition 4 was a more level, stronger topped heifer that stood wider when viewed from behind. I grant, however, that 3 showed more depth of heart and hind rib indicating more body capacity. However, I criticize 3 as she is short legged and small framed."*

**Criticize Sentence**

The last sentence is the criticize sentence. This sentence is important because if there is a fault in the second animal it should be brought out. In the heifer class the criticize sentence might read: *"I criticize 3 as she is short legged and small framed."*

# Comparative Terms

## Breeding Beef Cattle

### Skeletal Size, Structure and Soundness

#### Desirable

More correct set to feet and legs  
Sounder, freer, easier in movement  
Stronger topped

Longer, leveler rump

More size, larger frame, more bodymass, more correct in length  
Longer, leveler rump

#### Undesirable (Criticisms)

Post legged, knock-kneed, cow hocked, sickle hocked

Weaker topped, more sway backed

Shorter, steeper rump

Smaller, smaller frame, shorter bodied, shorter legged, too long legged, less body mass

#### Muscling

Longer muscling in round

Smother more functional muscles

Not as thick and bunched muscles

More refined in her muscling

#### Desirable

Wider and fuller in stifle

Thicker quarter

Longer muscled

Stands and walks wider

Thicker, more muscular round

Heavier muscled loin or more evidence of muscle in loin

#### Undesirable

Flatter, more narrow stifle

Flatter quarter

Shorter muscled

Stands and walks narrow

Thinner, lighter muscled round

Lighter muscled loin or more narrow, flatter muscled loin

#### Condition

Less predisposition to waste

No excess fat along underline

Trimmer, less wasty brisket, rear flank

Exhibits more fleshing ability

#### Sex Characteristics

More refined

More feminine about head and neck

Longer, leaner neck

Smother shoulder

Stronger udder attachment

Better balanced udder

Smaller teats, more correct teat size

More correct udder development

More well developed vulva

#### Performance

More weight per day of age

Superior growth rate

More efficient feed utilization

Gained faster

More weight at a younger age

Less feed per pound of gain

#### Transition Words for Oral Reasons

Furthermore Even so Nevertheless

However And Moving to

Therefore Admit Grant

## Market Beef Cattle

### Skeletal Size, Structure and Soundness

#### Desirable

More correct set to feet and legs  
Sounder, freer, easier in movement  
Stronger topped

Longer, leveler rump

More size, larger frame, more bodymass, more correct in length and height of body, more correct length of leg, more massive

#### Undesirable (Criticisms)

Post legged, knock-kneed, cow hocked, sickle hocked

Weaker topped, more sway backed

Shorter, steeper rump

Smaller, smaller frame, shorter bodied, shorter legged, too long legged, less body mass

#### Finish (finess)

#### Desirable

More correctly finished

More uniform in finish

Trimmer in brisket, rear flank and twist

Less predisposition to waste

No excess fat along underline

Trimmer, less wasty brisket, rear flank

More evenly distributed finish or more uniformly finished

More desirable finish

Less fat in udder

No excessive fat deposits

Exhibits more fleshing ability

#### Undesirable

Over finished (more than .6 inch of fat at the 12th rib)

Less uniformity of finish, patch finish

Wasty in brisket, rear flank and twist

#### Muscling

#### Desirable

Wider and fuller in stifle

Thicker quarter

Longer muscled

Stands and walks wider

Thicker, more muscular round

Heavier muscled loin or more evidence of muscle in loin

#### Undesirable

Flatter, more narrow stifle

Flatter quarter

Shorter muscled

Stands and walks narrow

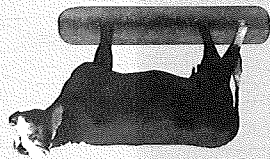
Thinner, lighter muscled round

Lighter muscled loin or more narrow, flatter muscled loin

#### Performance

Yield more pounds of retail cuts per day of age

# Determining Frame Scores

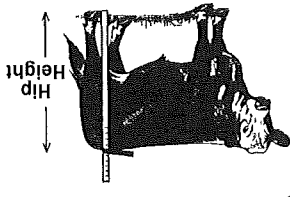


**Beef Project Skill:** Determining frame scores  
**Life Skill:** Making projections  
**Education Standard:** NS.9-12.3 Life Science  
**Success Indicator:** Determine the frame score of a calf.

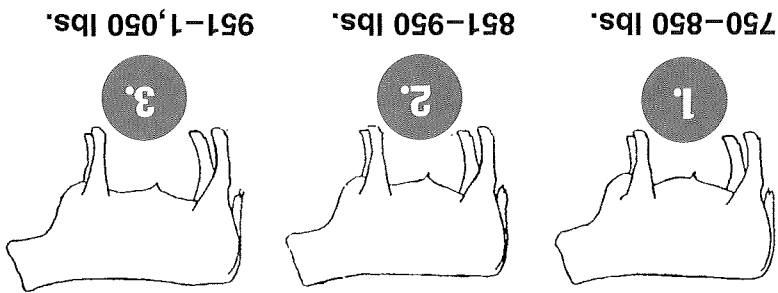
Cattle come in all shapes and sizes. The height of a calf at a certain age is called its frame score. You measure this using a level and a measuring tape (or stick) at the calf's hip bone. This measurement can be checked on a chart developed by the Beef Improvement Federation to determine the calf's frame score and potential target weight at 15 months.



Measuring hip height determines frame score.



## Frame Score Types and Weights



1,051-1,150 lbs. 1,151-1,250 lbs. 1,251-1,350 lbs. 1,351 and above lbs.

4. 5. 6. 7.

750-850 lbs. 851-950 lbs. 951-1,050 lbs.

1. 2. 3.

Use the chart in Beef Facts and pictures to answer these questions.

What frame score is best to achieve a 1250 lb. finished steer?  
 At weaning time (seven months) a steer measures 44 inches. What will he weigh at 15 months?  
 What is the frame score of a calf at the age of 18 months and a hip height of 52.07?  
 What is the frame score of your calf?



# BARN TALK

## Shooting the Breeze

- What was most difficult about measuring hip height? Why?

## Show Me the Beef

- Why is it important to know the projected market weight, pounds of gain, cost of gain and pounds of feed needed for your steer to reach market weight?

## Where's the Beef?

- Why is it important for you to make predictions and set goals for your life?

## Beef's Future

- What will you do differently next year as a result of this experience?



Frame Score

Adapted by Josh Merrill, Larry Tibbs, and Jackie Buckley from the Kansas 4-H Beef Curriculum Notebook.

# Frame Scores



Selection of a quality market animal can be enhanced by an understanding of how to use frame scores. Frame scores help to project the final weight of the market animal and how much the animal will have to gain on a daily average.

## Steps

1. Determine hip height
2. Know age of your animal
3. Use the frame score table to determine the animal's frame score.

For example, think of buying a seven-month old calf from your neighbor. It measures 40 inches at the hip. Look at the left hand column of the chart to find its age (seven months). Then, look across the row until you find its height (40 inches). This number falls into the column for an animal with a frame score of 3. What does this mean? Look at the figure entitled Frame Score Types and Weights. Seven frame score types are pictured. Imagine you are looking at a calf and it is 140 days until the fair. The average beef animal can gain about 2.6 pounds per day, your calf could put on 365 pounds in that time. 140 days x 2.6 pounds per day = 365 pounds

The calf needs to have a starting weight of 635 pounds when you buy it in order to finish close to the expect finished weight of 1,000 pounds (1,000 pounds - 365 pounds = 635).

With an average feed efficiency (conversion of pounds of feed to a pound of meat) of 7 to 1, you will need to count on feeding 2,555 pounds of feed to get a 365-pound gain. Knowing the average cost of a pound of feed, you can determine how much you will have to spend over the next 140 days to feed your animal.

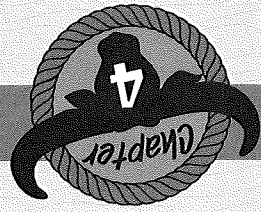
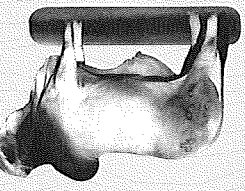
Frame Score Table

Measure height at hip or hooks.  
Point of measurement is at hook bones (hip and level with center of back)

Age in Months	1	2	3	4	5	6	7
Frame Score	34	36	38	40	42	44	46
Frame Score	37	39	41	43	45	47	49
Frame Score	40	42	44	46	48	50	52
Frame Score	41	43	45	47	49	51	53
Frame Score	42	44	46	48	50	52	54
Frame Score	43	45	47	49	51	53	55
Frame Score	44	46	48	50	52	54	56
Frame Score	45	47	49	51	53	55	57
Frame Score	46	48	50	52	54	56	58
Frame Score	47	49	51	53	55	57	59
Frame Score	48	50	52	54	56	58	60
Frame Score	49	51	53	55	57	59	61
Frame Score	50	52	54	56	58	60	62
Frame Score	51	53	55	57	59	61	63
Frame Score	52	54	56	58	60	62	64
Frame Score	53	55	57	59	61	63	65
Frame Score	54	56	58	60	62	64	66
Frame Score	55	57	59	61	63	65	67
Frame Score	56	58	60	62	64	66	68
Frame Score	57	59	61	63	65	67	69
Frame Score	58	60	62	64	66	68	70
Frame Score	59	61	63	65	67	69	71
Frame Score	60	62	64	66	68	70	72
Frame Score	61	63	65	67	69	71	73
Frame Score	62	64	66	68	70	72	74
Frame Score	63	65	67	69	71	73	75
Frame Score	64	66	68	70	72	74	76
Frame Score	65	67	69	71	73	75	77
Frame Score	66	68	70	72	74	76	78
Frame Score	67	69	71	73	75	77	79
Frame Score	68	70	72	74	76	78	80
Frame Score	69	71	73	75	77	79	81
Frame Score	70	72	74	76	78	80	82
Frame Score	71	73	75	77	79	81	83
Frame Score	72	74	76	78	80	82	84
Frame Score	73	75	77	79	81	83	85
Frame Score	74	76	78	80	82	84	86
Frame Score	75	77	79	81	83	85	87
Frame Score	76	78	80	82	84	86	88
Frame Score	77	79	81	83	85	87	89
Frame Score	78	80	82	84	86	88	90
Frame Score	79	81	83	85	87	89	91
Frame Score	80	82	84	86	88	90	92
Frame Score	81	83	85	87	89	91	93
Frame Score	82	84	86	88	90	92	94
Frame Score	83	85	87	89	91	93	95
Frame Score	84	86	88	90	92	94	96
Frame Score	85	87	89	91	93	95	97
Frame Score	86	88	90	92	94	96	98
Frame Score	87	89	91	93	95	97	99
Frame Score	88	90	92	94	96	98	100

# Beef It Up!

1. Attend your county beef weigh-in, measure hip heights and project the finish weights.
2. Spend a day with a cattle buyer in your area. What frame type does the buyer prefer? Why?
3. Explain to your helper how you would calculate the amount of feed a 500 pound calf with a frame score of 4 would need to reach 1000 pounds.



# Locating and Identifying Beef Cuts

**Beef Project Skill:** Identifying meat cuts  
**Life Skill:** Making decisions  
**Education Standard:** NL Eng K-12.3  
**Success Indicator:** Locate meat cuts on a beef carcass.

**D**o you know what each of the beef cuts looks like? Can you locate a round steak or a porterhouse steak or a blade roast on a beef animal or a beef carcass? Knowing where each of the meat cuts is found will help you be a better consumer and judge of beef cattle. In this activity you will also learn where the most important muscle groups are and the skeletal bones that support them.



In order for you to obtain a good understanding of the beef carcass, you must know where the seven primal cuts are located. The location of a cut determines the amount or type of muscle that is present. Knowing this can help you select animals that will be successful in the showring.

Match each primal (or wholesale) cut, with its correct bone in the skeleton and its retail cut. Then number where the primal cuts are found on the beef animal shown.

## Primal Cuts (or Wholesale)

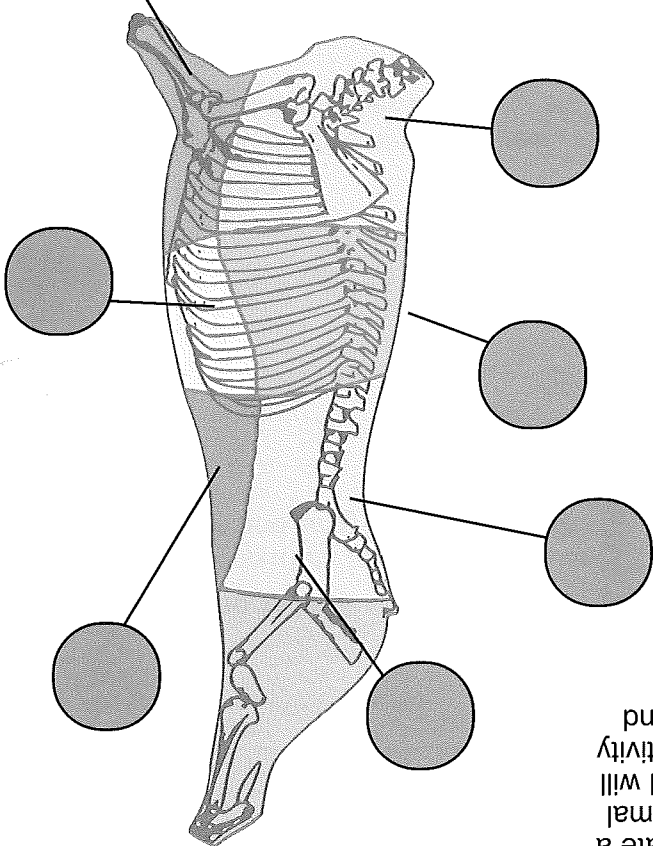
1. Round
2. Short Loin and Sirloin
3. Fore Shank and Brisket
4. Chuck
5. Rib
6. Flank
7. Short Plate

## Bones in Skeleton

- a. Leg Bone
- b. Hip Bone
- c. Breast Bone
- d. Blade and Arm Bone
- e. Back Bone
- f. Rib Bone
- g. Breast and Shank Bone

## Retail Cuts

- a. Round Steak
- b. Rib Eye Roast
- c. Arm Pot Roast
- d. T-bone Steak
- e. Skirt Steak
- f. Brisket
- g. Sirloin Steak
- h. Short Ribs
- i. Back Ribs
- j. Chuck Eye Roast



# BARNtalk

## Shooting the Breeze

- What surprised you about where some of the meat cuts came from?
- How did you find where the meat cuts come from?

## Show Me the Beef

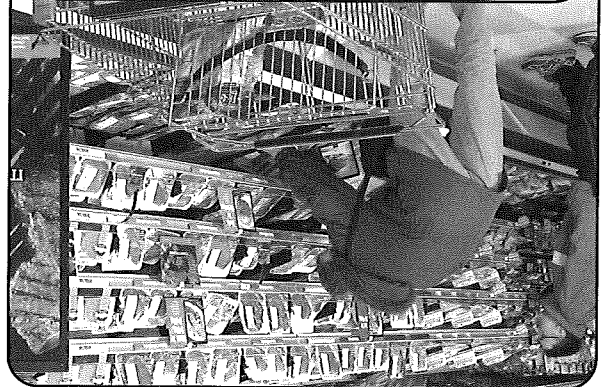
- Which cuts of meat are the most expensive? Why?
- Which cuts are the least expensive? Why?

## Where's the Beef?

- What is your favorite cut of beef to eat?
- How can you use your knowledge of beef skeletal structure and wholesale cuts of beef?

## Beef's Future

- How will you use this information in selecting your next steer?



Consumers selecting a lean high quality product that beef producers provide.

Adapted from the National Livestock and Meat Board, National 4-H Council, National Meat Science Series—Meat Identification Activity by Larry Tibbs and Jackie Buckley.

# Beef Skeletal Structure

## FACTS

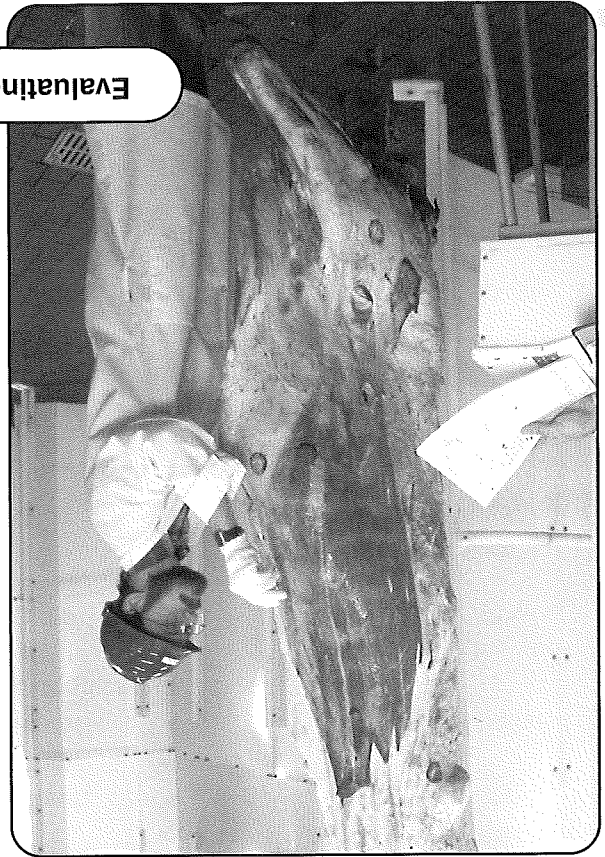
The bone structure determines the amount and type of muscle that will be present on a steer.

Common Name      Technical Name

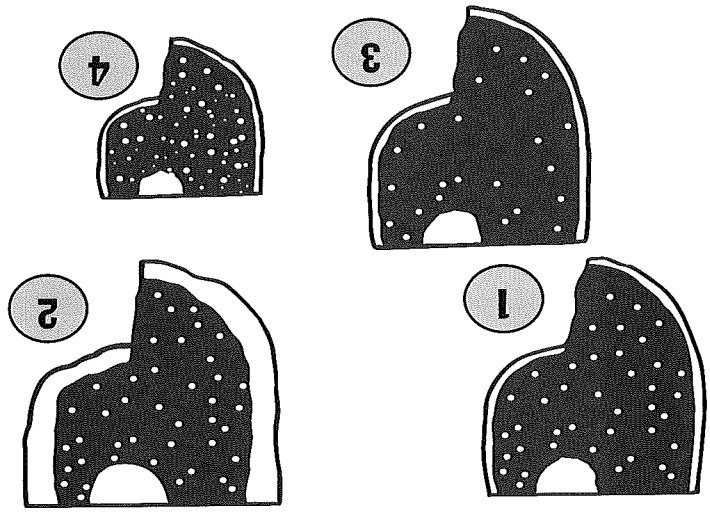
Neck bone	Cervical vertebrae
Atlas	First cervical vertebrae
Backbone	Thoracic vertebrae (1-13)
	Lumbar vertebrae (1-6)
	Sacral vertebrae (1-5)
Button	Cartilage of spinous process
	Spinous process
Feather bone	Transverse process
Chine bone	Body of vertebrae
Slip joint	Sacroiliac disthrosis
Tail bone	Caudal vertebrae (2-6)
Blade bone	Scapula
Arm bone	Humerus
	Foreshank bone(s)
	Ulna and radius
Elbow bone	Olecranon process
Breast bone	Sternum
Rib cartilage	Costal cartilage
Rib	Rib
Pelvic bone	Pelvis
Hip bone	Ilium
Rump bone or Aitch bone	Ischium
	Symphysis pubis
Leg (round) bone	Femur
Knee cap	Patella
Stifle joint	Femero-tibial articulation
Hind shank bone	Tibia-fibula
Hock bone	Parts of the tibia and fibular tarsal bones

## Beef It Up!

1. Tour a processing plant or local butcher shop in your area.
2. Visit a retail store or butcher shop and view the meat case.
3. Participate in a county meat judging contest.
4. Observe preparation and packaging of retail cuts at a supermarket or butcher shop.
5. Present a demonstration on identifying retail cuts at the county or club level.



Evaluating meat on the rail.



Do you help shop and select meat for your family? Meat purchased at retail makes up about 30 percent of the average consumer's food expenditures. Selection decisions at the meat counter are difficult because of the large variety of cuts available, and because of so much variation between cuts of the same type. This activity gives you the "hands-on" experience in evaluating and ranking retail meat cuts.

Class \_\_\_\_\_

I placed this class of \_\_\_\_\_

I placed \_\_\_\_\_ over \_\_\_\_\_ in the top pair because \_\_\_\_\_

I grant \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

Going to the middle pair, I placed \_\_\_\_\_ over \_\_\_\_\_ because \_\_\_\_\_

I admit \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

I placed \_\_\_\_\_ over \_\_\_\_\_ in the bottom pair because \_\_\_\_\_

I realize \_\_\_\_\_ was \_\_\_\_\_ than \_\_\_\_\_

However, I faulted \_\_\_\_\_ and placed it last because \_\_\_\_\_

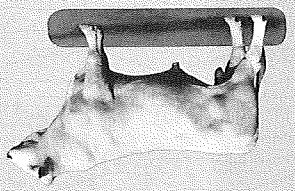
### Reasons Note Card

**Taking on the Challenge**

Place the class of retail cuts from the pictures provided and then write a set of reasons as to why you placed them the way you did.

**Beef Project Skill:** Judging retail beef cuts  
**Life Skill:** Making decisions  
**Education Standard:** NS.5-8.1 Science as Inquiry  
**Success Indicator:** Judge retail beef cuts and present reasons.

# Making the Cut





# Meat Judging Terminology

Meat judging can complete your education in agriculture through teaching how the final end product is evaluated, fabricated and marketed. By participating in meat judging, you are exposed first hand to the livestock and meats industry throughout the United States which may enhance employer contacts for future job opportunities. Meat judging also instills in you a life long skill that includes decision making, communication and writing skills, confidence, motivation and leadership.

In the lists below are some meat judging terms that will be helpful when judging a class of beef loins.



## Advantages

- Large loin eye
- More square inches of ribeye
- More total red meat at the sirloin face
- Larger top butt
- Larger bottom sirloin (Tip of Knuckle)
- More depth of muscle

## Quality

- More marbling
- More evenly distributed marbling
- Deeper red color
- Finer texture to the meat

## Disadvantages

- More seam fat at the sirloin edge
  - More fat at the flank edge
  - More kidney fat
  - More fat on the ribeye end
  - More fat at the tail region
- ## Muscle
- Smaller ribeye
  - Less total square inches of ribeye
  - Less total muscle at the sirloin end



## Beef It Up!

1. Visit your local meat counter and look at the different cuts available and then assist your parent in selecting the best cut to buy.
2. Participate in a meat judging contest.

# BARNtalk

## Shooting the Breeze

- How did you place the cuts of meat?
- Show Me the Beef
- What were the biggest differences among the cuts?

## Where's the Beef?

- When you purchase beef what do you look for?

## Beef's Future

- How did this activity help you become a better consumer?

# Beef Talk 2

This is the second of three Beef Talk glossaries for you to use to increase your beef vocabulary. See how many of the words you can find in the word find.

## A

**Abomasum** - The fourth

compartment of the stomach

of a cow, sheep or goat where

enzymatic digestion occurs.

Often called the true stomach.

**Absorption** - The process in

which nutrients and other materials

pass through the walls of the

digestive tract into the blood.

**Antibiotic** - Product produced

by living organisms such as yeast

that destroys or inhibits the growth

of other organisms, especially

bacteria.

**Auctioneer** - The person who

verbally does the selling of the

animal.

**Auction** - A sale where bids are

received and the animal is sold

to the highest bidder.

## B

**Bangers** - Cows that show

reaction to a brucellosis or

Bang's Disease test.

**Beef belt** - Area of the United

States where commercial beef

production, slaughtering and

processing are concentrated.

**Beef check-off program** - Beef

Promotion and Research Act

established in October 1986.

Each time cattle are marketed,

\$1 per head is paid by the seller

to the Beef Industry Council (BIC).

Money is used in promotion,

research and education.

Generates approximately

\$70 million per year.

**Birth weight** - Calf weight taken

at birth.

**Bloat** - Disorder characterized by

gas distention in the rumen, seen

on the animal's left side.

**Boxed beef** - Cuts of beef put in

boxes for shipping from packing

plant to retailers. These primal

(round, loins, ribs and chuck) and

subprimal cuts are intermediate

cuts between the carcass and

retail cuts.

**Broody** - Shows the appearance

of being a good mother cow.

**Brucellosis** - Contagious

bacterial disease that results in

abortion; also called Bang's

disease.

**BSE** (Bovine Spongiform

Encephalitis) - Mad Cow Disease

Condition in which

the front knees extend too far

forward.

## C

**Calf kneed** - Condition in which

the front knees are too far back

(sickle shaped on front legs).

**Castrate** - To remove the testes

of male animals.

**Chuck** - Wholesale cut (shoulder)

of the beef carcass.

**Complete mixed ration** - A feed

where all ingredients are blended

together with the exception of

water. Also called total mixed

ration (TMR).

**Composition** - Usually refers

to the carcass composition of fat,

lean and bone.

**Concentrates** - Any feed high in

energy (usually grain); also refers

to a protein feed.

**Condition** - The level of health

or the level of fatness of a beef

animal.

**Cost of gain** - Total of all costs

divided by the total pounds

gained; usually expressed on a

per-pound basis.

**Crude fiber** - A percentage

measure of the complex

carbohydrate in feedstuffs for

cattle.

**Crude protein** - The content of

nitrogen in a feed or animal

tissue or excreta multiplied by a

factor of 6.25 since most protein

is 16 percent nitrogen, to provide

an estimate of protein content.

**Cryptorchids** - Male cattle with

undescended testes.

## D

**Digestible** - The ability of an

animal to obtain nutrients from

a feedstuff.

**Digestibility** - The amount of

a nutrient absorbed or used; the

difference between amount of

nutrient fed and amount found

in feces.

**Digestion** - The process in which

complex nutrients such as starch,

fats and proteins are chemically

broken down in the digestive

system into simple nutrients such

as glucose, fatty acids and amino

acids that can be absorbed and

used by the body.

**Disposition** - The temperament

of an animal.

**Dressing percentage** -

Percentage of the live animal

weight that becomes the

carcass weight at slaughter.

It is determined by dividing the

carcass weight by the liveweight

then multiplying by 100.

**Dry (cow)** - Refers to a

nonlactating female.

**Dry matter** - The portion or

percentage of a feed that is

not water.

**Feed efficiency** - Ability to get the desired output with the least expense of time, feed, labor or money.

**Finished cattle** - Fed cattle whose time in the feedlot is completed and are now ready for slaughter.

**Fly worry** - Stress and nervous activity.

**Founder** - Nutritional ailment due to overeating; founder animals become lame with sore front feet and excessive hoof growth.

**Frame score** - A measure of hip or shoulder height used to determine skeletal size of cattle.

**Freemartin** - Heifer born twin to a bull; incapable of reproducing.

## G

**Gene** - Segment of DNA in the chromosome that codes for a trait and determines how a trait will be passed on and expressed.

**Genotype** - Genetic makeup of an animal.

**Grade and yield** - Marketing transaction whereby payment is made on the basis of carcass weight and quality grade.

**Grass tetany** - Magnesium deficiency of grazing cattle. Insures the contents of key nutrients like crude protein.

**Guaranteed analysis** - The chemical listing of a feed that insures the contents of key nutrients like crude protein.

## F

**Feed efficiency** - Ability to get the desired output with the least expense of time, feed, labor or money.

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## I

**Intermuscular fat** - Fat located between muscle systems. Also called seam fat.

**Intramuscular fat** - Fat within the muscle, also called marbling.

## K

**Knock kneed** - Condition when the front knees are too close together (opposite of bow-legged).

**Kosher meat** - Meat from ruminant animals (with split hooves) that have been slaughtered according to Jewish law.

## L

**Leanness** - Refers to the amount of muscle an animal has.

**Loin eye area** - Area of the rib eye at the 12th rib; used in carcass evaluation to help determine meatiness of carcass; same as rib-eye area.

**Long yearling** - Animal between 19 months and two years of age.

## M

**Marbling** - The small flecks of fat within a muscle.

**Medicated** - A feed that contains a medicine.

**Middle meats** - Rib and loin of a beef carcass. These primals generally yield the highest-priced beef cuts.

**Milking ability** - Amount of milk produced.

## N

**Net energy** - The total amount of energy received from digestion and metabolism of a feedstuff.

**Nose print** - An ink print of an animal's nose used for identification.

**Nutrients** - Chemical substances found in feed materials that are used for maintenance, production and health of animals. The major classes of essential nutrients include carbohydrates, fats, proteins, minerals, vitamins and water.

**Omasum** - The third compartment of the ruminant stomach located between the reticulum and the abomasum. Often called the many piles, it grinds feedstuffs into smaller particles and absorbs water.

## O

**Long yearling** - Animal between 19 months and two years of age.

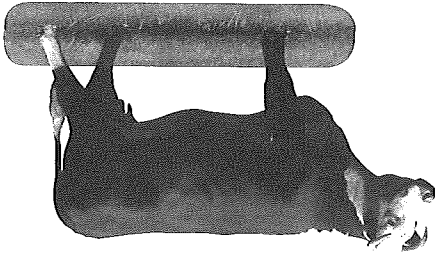
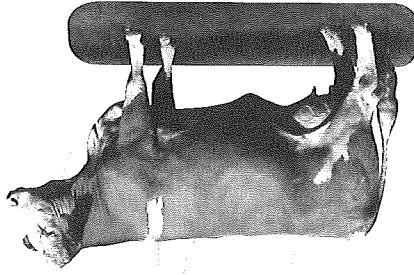
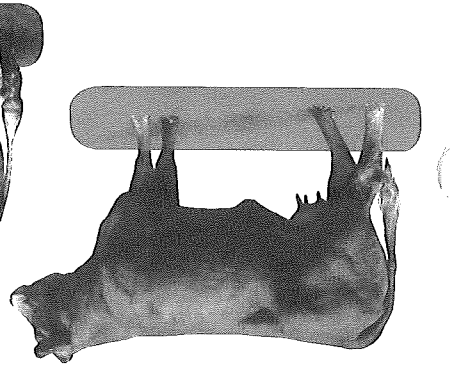
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**Medicated** - A feed that contains a medicine.

**Middle meats** - Rib and loin of a beef carcass. These primals generally yield the highest-priced beef cuts.

**Milking ability** - Amount of milk produced.



**Palatability** - The degree to which a feed is liked or accepted by an animal.

**Parasite** - An organism that lives at the expense of another organism and does harm to an animal.

**Pedigree** - A record of the ancestry of an animal.

**Performance data** - Information that measures an individual's performance in traits such as weaning weight.

**Performance text** - Measure of performance, usually on bulls to determine their rate and efficiency of growth and carcass traits.

**Phenotype** - What an animal physically looks like.

**Pigeon-toed** - When the front toes point in.

**Polygastric** - Having many stomach compartments, like the ruminant animal.

**Preconditioning** - Preparation of feeder calves for marketing and shipment, may include vaccinations, castration and training calves to eat and drink in pens.

**Preparation method** - A method to cook meat, such as broiling, braising, grilling, simmering, stir-frying and roasting.

**Quality grades** - Grades such as Prime, Choice and Select that group slaughter cattle and carcasses into value and palatability-based categories. Grades are determined primarily by marbling and age of animal.

**Reactor** - Animal that shows a positive reaction to the test for bang's disease or tuberculosis.

**Registration number** - Number assigned to each animal when registered.

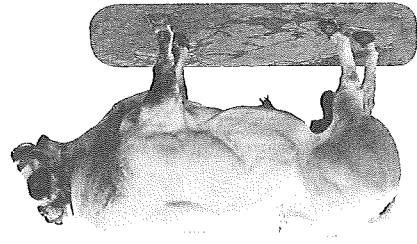
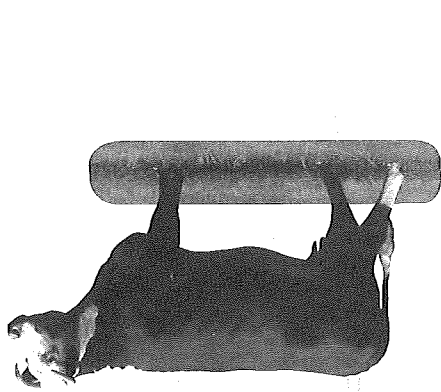
**Retail cut** - Further subdivided wholesale cuts. These cuts are bought by consumers.

**Reticulum (honeycomb)** - Honeycomb-like walls retain foreign materials that could injure the digestive system. Also called the hardware stomach. Functions are similar to the rumen.

**Rib eye area** - A measurement in square inches of a cross section of the loin muscle taken at the twelfth rib.

**Roughage** - A type of feed ingredient consisting of the leaves and stems of plants that is high in fiber content.

**Rumen** - A compartment of the ruminant stomach that is similar to a large fermentation pouch where bacteria and protozoa break down fibrous plant material swallowed by the animal. Sometimes referred to as the paunch.



**Scours** - Persistent diarrhea.

**Sickle hocked** - When the rear leg has too much curve at the hock joint.

**Sire summary** - Publication by a breed association that contains genetic trait information.

**Splay footed** - When the front toes point out.

**Stocker** - Weaned cattle that are fed high-roughage diets (including grazing) before going into the feedlot.

**Substance** - Desirable combination of bone, frame and musculing.

**Subcutaneous** - Under the skin, placement for some injections.

**Supplement** - A feed or feed additive given to animals to provide nutrients such as protein, energy, minerals or vitamins that were lacking in the basic ration.

S

Q

P

# Beef Glossary Word Find

E P Y T O N E H P E N A M S G  
 E T A R T S A C N E S B L C E  
 R E T I C U L U M R X O N O N  
 O C A F B H T Y E G C M O U E  
 A Y I L R R U G R I N A I R D  
 E U O R I E N C T D E S T S E  
 W A C E T A E O K E R U P T T  
 T H N T B S I M E P R M R R A  
 Y T I L I B A T A L A P O I C  
 S X P O I O K G C R B P S N I  
 L D P T A P N M Y I T B B G D  
 G E N O T Y P E U L A I A H E  
 N A P N O I T I D N O C N A M  
 D I G E S T I B L E Y P N L E  
 N O S E P R I N T E S B K T T

## Word Bank

- Abomasum
- Absorption
- Antibiotic
- Auction
- Bangers
- Barren
- Bloat
- BSE
- Castrate
- Chuck
- Condition
- Digestible
- Dry
- Freemartin
- Gene
- Genotype
- Medicated
- Nose print
- Nutrients
- Open
- Palatability
- Pedigree
- Phenotype
- Polygastic
- Reticulum
- Scours
- Stringhalt

**Yield grade** - A numeric value assigned to a carcass that signifies the amount of muscle the carcass contains in comparison to the amount of fat. The value ranges between one and five.

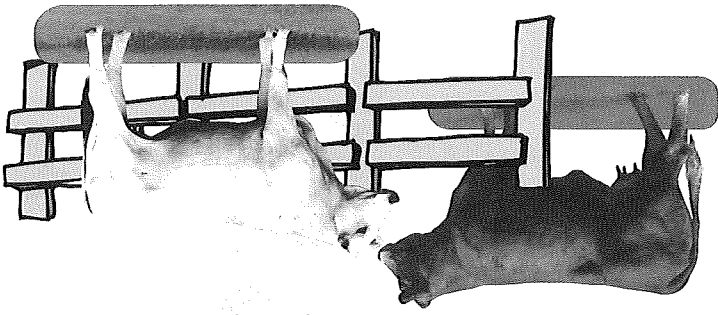
**Viscera** - The internal organs and cavities of an animal.

**Weaning weight** - Calf weight when taken away from the cow. (Normally 205 days of age.)  
**Weight per day of age** - Calculated weight of a calf for each day of its life.

**Withdrawal** - Amount of time that must pass after administering a medication before food products from the animal can be safely used by humans.

**Terminal sires** - Sires used in a crossbreeding system in which all their progeny, both male and female, are marketed. For example, crossbred dams could be bred to sires of a third breed and all calves marketed.

**Tray-ready beef** - Retail cuts that are cut and packaged at the packing plant for retail.



# Beef Project Resources

The following are examples of resources to help you complete the activities and learn more about this exciting project. The Extension Service does not endorse any non-extension resources.

- **4-H National Juried Beef Publications**  
National 4-H Curriculum  
Beef Publications
- **Beef 1: Bite Into Beef**  
BU-08143
- **Beef 2: Here's the Beef**  
BU-08144
- **Beef 3: Leading the Charge**  
BU-08145
- **Beef Helper's Guide**  
BU-08146

**Kansas 4-H Beef Curriculum Notebook Kansas Cooperative Extension Service** - 4-H  
201 Umberger Hall  
Manhattan, KS 66506-3404

## Beef Magazines

**Beef Today**  
Farm Journal, Inc.  
230 W. Washington Square  
Philadelphia, PA 19160

**Drovers Journal**  
Circulation Dept.  
P.O. Box 1417  
Lincolnshire, IL 60069

**Farming Magazine**  
43 S. Water St. E.  
Fort Atkinson, WI 53538-0809

**Breed Associations**  
**American Angus Association**  
3201 Frederick Blvd.  
St. Joseph, MO 64506

**Beefmaster Breeders United**  
6800 Park Ten Blvd., Ste. 290W  
San Antonio, TX 78213-4204

**American Brahman Breeders Association**  
1313 La Concha Lane  
Houston, TX 77054

**International Brangus Breeders Association**  
P.O. Box 696020  
San Antonio, TX 78269-6020

**Braunvieh Association of America**  
P.O. Box 6396  
Lincoln, NE 68506-0396

**American-International Charolais Association**

**Association**  
P.O. Box 20247  
Kansas City, MO 64195

**American Chianina Association**

**Association**  
P.O. Box 890  
Platte City, MO 64079

**American Gelbvieh Association**

**Association**  
10900 Dover St.  
Broomfield, CO 80021

**The American Hereford Association**

**Association**  
1501 Wyandotte Street  
P.O. Box 014059  
Kansas City, MO 64101

**American Highland Cattle Association**

**Association**  
200 Livestock Exchange Building  
4701 Marion  
Denver, CO 80216

**North American Limousin Association**

**Association**  
7383 South Alton Way  
P.O. Box 4467  
Englewood, CO 80155

**Texas Longhorn Breeders Association of America**

**Association**  
Box 4430  
Fort Worth, TX 76164

**American Maine-Anjou Association**

**Association**  
528 Livestock Exchange Building  
Kansas City, MO 64102

**American Polled Hereford Association**

**Association**  
11020 NW Ambassador Drive  
Kansas City, MO 64153

**Red Angus Association of America**

**Association**  
4201 N. Interstate 35  
Denton, TX 76207-3415

**American Sellers Association**  
19590 E. Main Street #202  
Parker, CO 80138

**American Shorthorn Association**

**Association**  
8288 Hascall Street  
Omaha, NE 68124

**American Simmental Association**

**Association**  
One Simmental Way  
Bozeman, MT 59718

**North American South Devon Association**

**Association**  
19590 E. Main Street #202  
Parker, CO 80138

**American Tarentaise Association**

**Association**  
P.O. Box 34705  
Kansas City, MO 64116

**National Cattlemen's Beef Association**

**Association**  
9110 E. Nichols Avenue Ste. 300  
Centennial, CO 80112

**R-CALF United Stockgrowers of America**

**Association**  
P.O. Box 30715  
Billings, MT 59107

**State Cattlemen's Associations**

**County Cattlemen's Associations**

**State Beef Councils & Commissions**

## Web Sites

**Beef Magazine web sites**

**Beef Breed Association web sites**

**National Cattlemen's Beef Association web site**

**General Beef Management**

Find more about **Beef Cattle** and other projects online at:

**Science, Engineering and Technology**

- Agricultural Science
- Afterschool Agriculture
- Animal Science
- Beef
- Cat
- Dairy Cattle
- Dairy Goat
- Dog
- Embryology
- Entomology
- Exploring Farm Animals
- Exploring 4-H Robotics
- Geospatial
- Sewing Expressions
- Small Engines
- Woodworking Wonders
- Environmental Science
- Exploring Your Environment
- Forestry—Forests of Fun
- Fishing for Adventure
- Outdoor Adventures
- Plant Science
- Down-to-Earth—Gardening in the Classroom
- Gardening
- Science Discovery Series

**Healthy Living**

- Health and Fitness
- Bicycle Adventures
- Child Development—Kids on the Grow
- Keeping Fit and Healthy
- Nutrition
- Foods
- Microwave Magic

**Citizenship**

- Communication and Expressive Arts
- A Palette of Fun
- Communications—Express Yourself!
- Photography
- Qué Rico! Latino Cultural Arts
- Theatre Arts
- Visual Arts
- Community Action
- Citizenship—Public Adventures
- Service Learning
- Leadership
- Exploring 4-H
- Step Up To Leadership
- Personal Development
- Consumer Savvy
- Financial Champions
- Workforce Preparation
- Be the E—Entrepreneurship
- Get in the Act!

**Resources**

- Experiential Learning Video

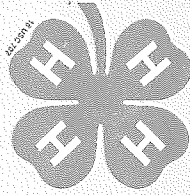
Discover over 180 National 4-H Curriculum titles in mission areas of Science, Engineering and Technology; Healthy Living; and Citizenship. Youth activity guides are filled with fun, engaging experiences that cultivate abilities youth need for everyday living as they progressively gain knowledge about subjects that interest them.

All titles have been reviewed and recommended by the National 4-H Curriculum Jury Review process, signifying their excellence in providing hands-on learning experiences for youth.



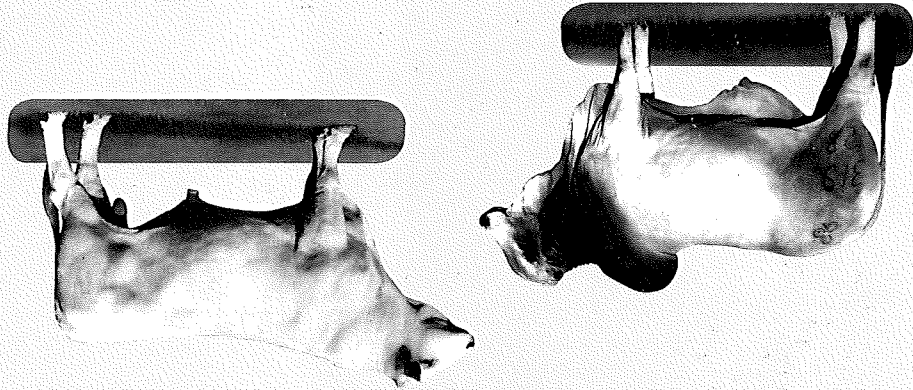
[www.4-hcurriculum.org](http://www.4-hcurriculum.org)

Explore more curriculum  
projects online at:



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.

## THE 4-H PLEDGE



HERE'S THE BEEF

BEEF 2