



# HERE'S THE BEEF

Beef

2



## Beef Youth Activity Guide

Name \_\_\_\_\_

County \_\_\_\_\_



REVIEWED & RECOMMENDED  
National 4-H Curriculum





# 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

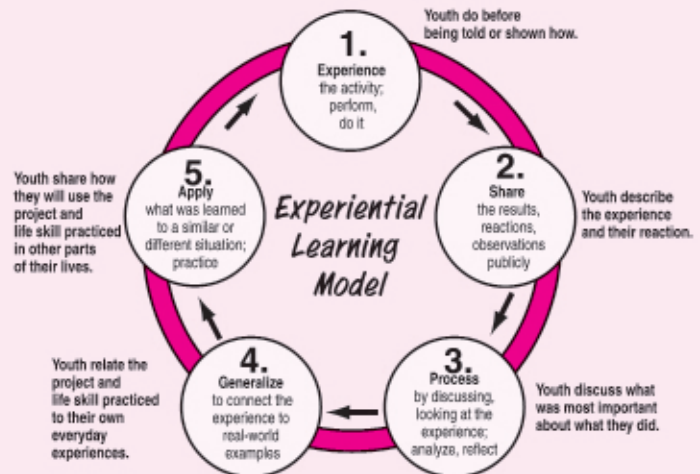
## The Beef "Skills for Life" Series

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 Annuals" © 1983 John Wiley & Sons, Inc. Reprinted with permission of John Wiley & Sons, Inc.

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.

**Good luck in your role as Project Helper!**

## Acknowledgments

**2005 Revision Team:** Jackie Buckley, Coordinator, ND; Stephen Schafer, Liaison, WY; Wendy Sorrell, VT; Carrol Rodgers, IL; Sandy Yarger, IN; Susan Kerr, WA.

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

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



<b>Chapter 1 - Know Your Beef</b>
Identifying Beef Brands
Locating Beef Parts
Doing the Right Thing IS the Right Thing
Planning Your Work, Working Your Plan
<b>Chapter 2 - Animal Health</b>
Recognizing a Healthy Animal
Picking Feed Ingredients
Where, Oh Where Is My Calf?
<b>Chapter 3 - Beef and Beef Products</b>
Judging Beef
Shopping for Beef
Recognizing Beef By-products
<b>Chapter 4 - It's Showtime!</b>
Halter Breaking Your Calf
Fitting a Steer
Showing Beef Cattle

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



<b>Chapter 1 Animal Nutrition and Health</b>
Surf 'N Turf
Balancing a Beef Ration
Let's Talk Hay
Read It on the Label
Blocking Bovine Bugs
<b>Chapter 2 Showing Beef</b>
Fitting for Show
<b>Chapter 3 Meat Evaluation</b>
Evaluating a Beef Carcass
Yielding the Grade
<b>Chapter 4 EPDs</b>
Selecting a Sire
<b>Chapter 5 Reproduction</b>
Exploring Beef Reproductive Systems
The Heat Is On
A Womb with a View
The LaMOOze Method
<b>Chapter 6 Exploring Careers</b>
Looking Ahead

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



Youth Learning Characteristics
Developing Life Skills
Teaching and Learning Experientially
<b>Chapter 1 Front and Center</b>
Producing a Beef Commercial
Planning the Beef Project Year
Show What You Know
Demonstrating Fitting Equipment
<b>Chapter 2 Word Games</b>
Playing BEEFagories
Beef Talk Games
Fun with Beef Pyramid
Playing STEAK Bingo
<b>Chapter 3 Beef Management Practices</b>
Keep It Clean
Moo-rades
Investigating Medications
Tying the Knot
Accepting the End
<b>Chapter 4 Skill Building</b>
Conducting a Beef Quiz Bowl
Identifying Beef Parts
Practicing Sportsmanship
The 4-H Recognition Model
Answer Key
Beef Project Meeting Ideas

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# Having Fun with the Beef Project

**L**et'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: \_\_\_\_\_





# Goals and Highlights

## My Beef Project Goals

Name \_\_\_\_\_

What I want to do and learn in Beef 2 \_\_\_\_\_

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

## Before and After – What do I know?

Here is a great way to see if you learn something new and develop important skills in this project. Before you start doing the activities in this guide indicate what you know **NOW**. Then when you complete the *Here's the Beef* Achievement Program write down here what you know **AFTER**. You may be surprised to see what you learn! Share the results with your helper.

Begin each skill with the words "*I know how to...*" Then circle **1** (not at all), **2** (somewhat) or **3** (to a great extent).

<i>I know how to:</i>	Before	After
Identify proper injection techniques and location	1 2 3	1 2 3
Identify feed ingredients and their nutrient content	1 2 3	1 2 3
Identify parts of a ruminant's digestive tract	1 2 3	1 2 3
Describe control of common external pests of cattle	1 2 3	1 2 3
Identify livestock safety hazards	1 2 3	1 2 3
Make an ethical decision	1 2 3	1 2 3
Identify and evaluate beef leg structures	1 2 3	1 2 3
Place a class of animals and present reasons	1 2 3	1 2 3
Present oral reasons on a heifer class	1 2 3	1 2 3
Determine the frame score of a calf	1 2 3	1 2 3
Locate meat cuts on a beef carcass	1 2 3	1 2 3
Judge retail beef cuts and present reasons	1 2 3	1 2 3

## Beef Project Highlights

Date and list the exciting things you do and learn.



*A picture of my project animal and me.*









## Animal Health

# Beef Quality Assurance

<b>Beef Project Skill:</b>	Administering Injectable Animal Health Products
<b>Life Skill:</b>	Making decisions
<b>Education Standard:</b>	NS 5-8.3
<b>Success Indicator:</b>	Identify proper injection techniques and location.

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.

Proper injection site for beef animals.



### 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

1. Select a banana or orange, a syringe and bottle of colored water.
2. Fill the syringe and inject the water into the piece of fruit as you would give an **intramuscular** (IM) injection to your calf.
3. Now try a **subcutaneous** (SubQ) injection.
4. With your helper, slice open the fruit at the injection site and observe placement of the colored water.
5. Discuss the methods you used, and document the injection on your record sheet.

## BarnTalk

#### 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?

#### Beef's Future

- How are you going to use this information when you give your next injection?



## 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.

Beef Talk Words Intramuscular Subcutaneous



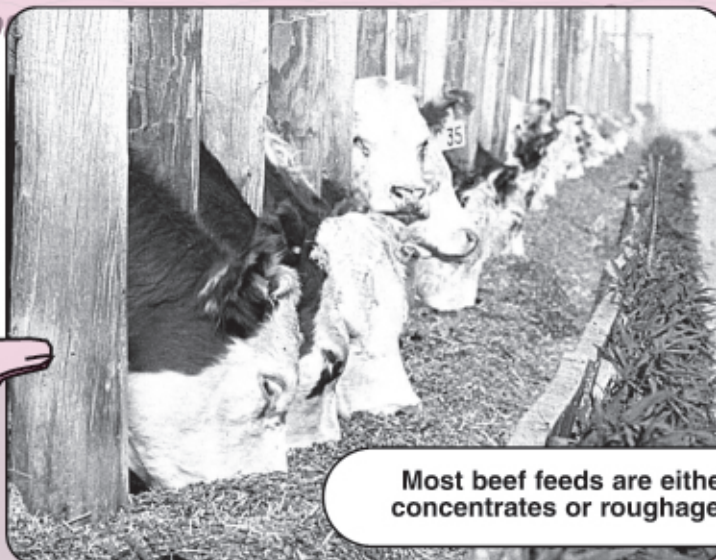
# Nutritional Needs

- Beef Project Skill:** Choosing feed ingredients for cattle
- Life Skill:** Learning to learn by asking questions
- Education Standard:** NS. 5-8.3 Life Sciences
- Success Indicator:** Identify different feeds and their nutrient content.

**W**hy can cows eat so many different kinds of feeds like grass, grain and silage? Remember that major nutrients are not made by a beef animal's body. They must be provided by you in the form of pasture, forage, hay, grain mix or supplements. To provide correct nutrition you need to know the animal's needs and to develop a feed plan that meets those needs.

## Taking on the Challenge

**W**hat do you feed your beef animal? Do you know what ingredients are included in the feed and what nutrients they provide? Some of the ingredients are listed here. Match each one with the correct definition. Then complete the table



Most beef feeds are either concentrates or roughages.

for those feed ingredients that are most used in your area. Check with a feed mill operator, a family member or your helper if you have questions.

### Feed Ingredients

### Definition

- |                                |   |
|--------------------------------|---|
| ___ 1. Oats                    | <b>A.</b> Grains high in carbohydrates that promote the fattening process.  |
| ___ 2. Corn or milo            | <b>B.</b> Added to feed to balance the ration, enhance digestibility and promote hair bloom.  |
| ___ 3. Sweet feeds             | <b>C.</b> Elements such as calcium and phosphorus that are required as structural components of the skeleton and often fed free choice. |
| ___ 4. Protein supplements     | <b>D.</b> Contains variety of grains mixed with molasses. Highly palatable.   |
| ___ 5. Cottonseed hulls or hay | <b>E.</b> Added to rations to increase protein content.   |
| ___ 6. Vitamin premixes        | <b>F.</b> Added to feedstuffs to prevent respiratory infections and promote feed consumption.   |
| ___ 7. Salt                    | <b>G.</b> Used free choice to maintain tissue integrity.  |
| ___ 8. Antibiotics             | <b>H.</b> Adds bulk and fiber to diet and stimulates rumen development.   |
| ___ 9. Minerals                | <b>I.</b> High in carbohydrates as well as protein and fiber but lower in energy than some other grains.                                |

### Beef Cattle Feed Ingredients

Type of Feed Ingredient	Name of Feed Ingredient	% Protein	Amount Fed Daily	Cost per 100 lbs.	Type of Nutrients Provided	Purpose	
						Growth	Fattening
Roughages							
Concentrates							
Protein Sources							



## 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

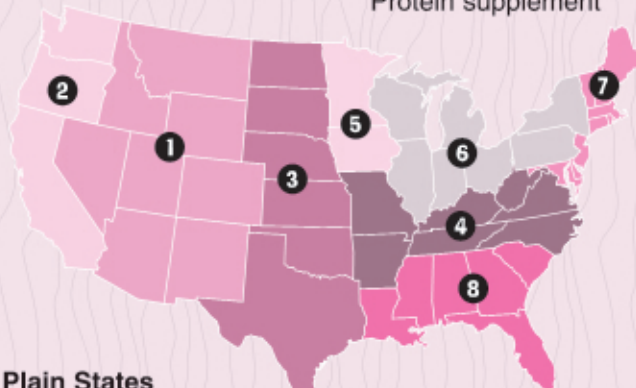
- What did you learn about rations that you can use with your beef animal?



## 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
<b>1. Western</b>		<b>5. Upper Midwest</b>	
Grass hay	7.0	Grass hay	5.0
Steam rolled or		Dehydrated alfalfa	0.5
Ground barley	4.0	Coarse ground corn	2.0
Protein supplement	1.5	Rolled oats	2.0
		Wheat	2.0
<b>2. West Coast</b>		Protein supplement	0.5
Alfalfa hay	5.0		
Steam rolled or		<b>6. Great Lakes Region</b>	
Ground barley	3.0	Alfalfa hay	6.0
Oats	2.0	Coarse ground corn	4.0
Dried beet pulp	1.0	Rolled oats	2.0
Cottonseed meal	0.5		
		<b>7. Upper Northeast</b>	
		Grass-legume hay	3.5
		Coarse ground corn	2.5
		Rolled oats	6.5
		Protein supplement	0.5



<b>3. Plain States</b>		<b>8. Southeast States</b>	
Grass-legume hay	6.0	Coastal Bermuda grass hay	7.0
Coarse ground corn	6.0	Ground corn or grain sorghum	5.0
Protein supplement	0.6	Cottonseed meal	1.0
<b>4. Mid-south States</b>			
Grass hay	5.0		
Dehydrated alfalfa	0.6		
Coarse ground corn	4.0		
Rolled oats	2.0		
Protein supplement	0.4		



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.



# Following Feed through the Digestive System

**Beef Project Skill:**

Understanding a beef animal's digestive system

**Life Skill:**

Learning to learn

**Education Standard:**

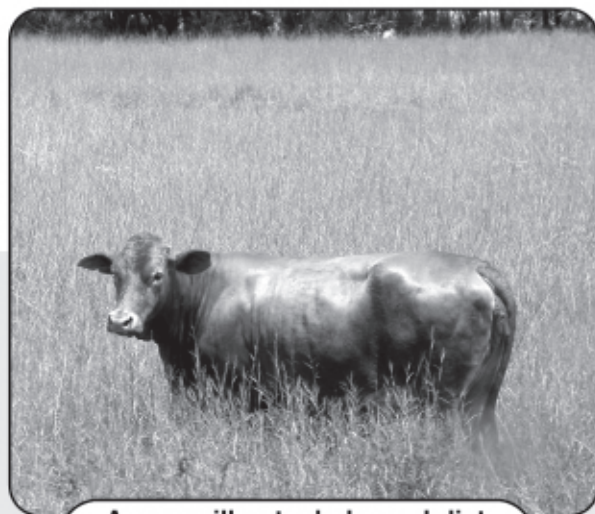
NS 5-8.3

**Success Indicator:**

Identify parts of a ruminant's digestive tract.

**W**hy 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.



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

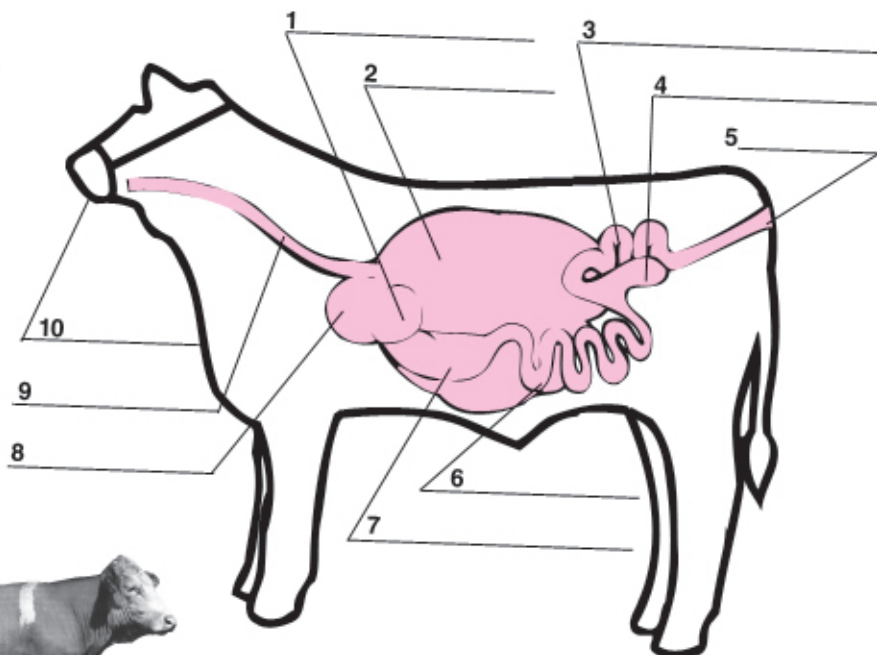
## Taking on the Challenge

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

### Ruminant Digestive System Parts

Abomasum  
Anus  
Cecum  
Esophagus  
Large intestine  
Mouth  
Omasum  
Reticulum  
Rumen  
Small intestine

### Beef Steer





## BarnTalk

### Shooting the Breeze

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

### Show Me the Beef

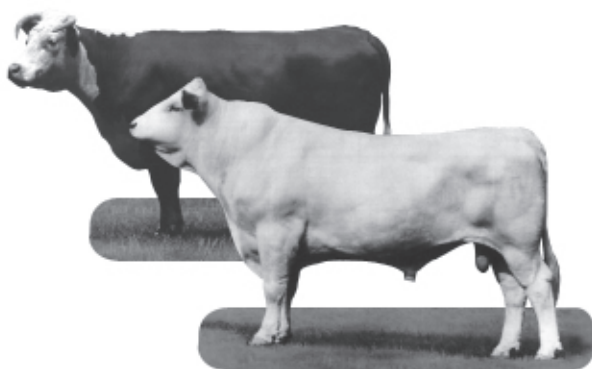
- Why do beef animals chew their cud?
- What may happen if your animal did not eat enough hay?

### 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?



Beef Talk Words  
Abomasum Omasum  
Reticulum Rumen



## The Digestive System of the Beef Animal

### Functions

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

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.

**Beef It Up!**





# Mange on the Range

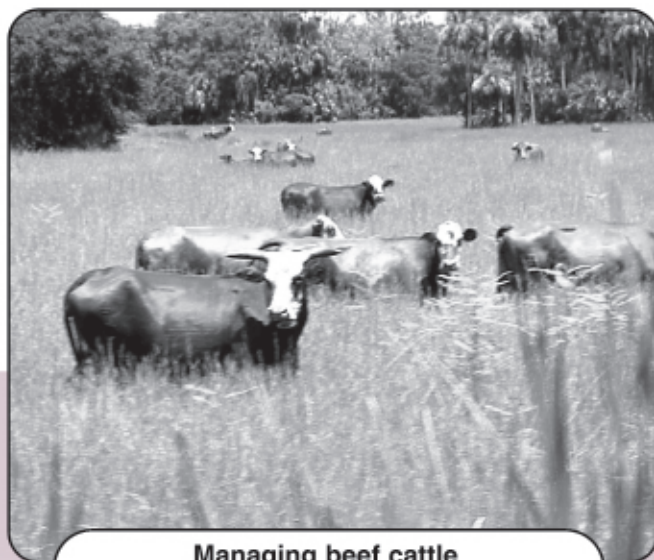
**Beef Project Skill:** Identifying and controlling external parasites of cattle

**Life Skill:** Stress management

**Education Standard:** NS 5-8.3

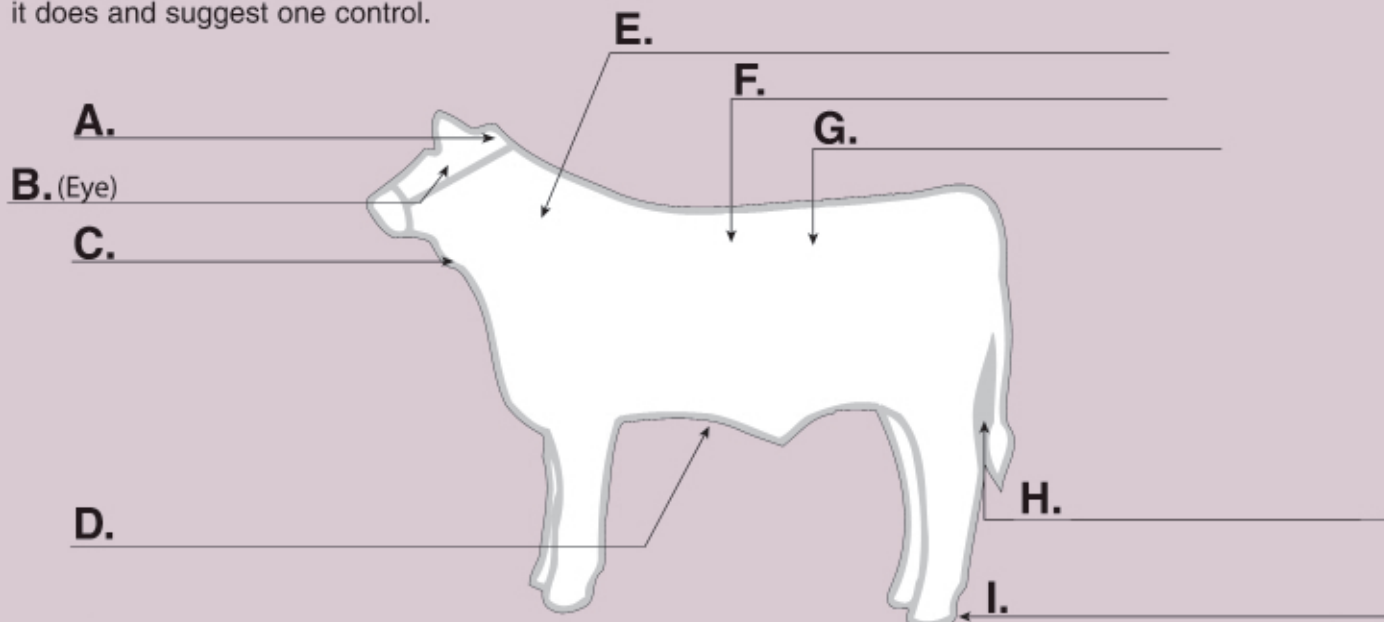
**Success Indicator:** Describe control of common external pests of cattle.

**D**o 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!



Managing beef cattle in a pasture situation

**O**n 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.



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		



## 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?



## Beef External Parasites

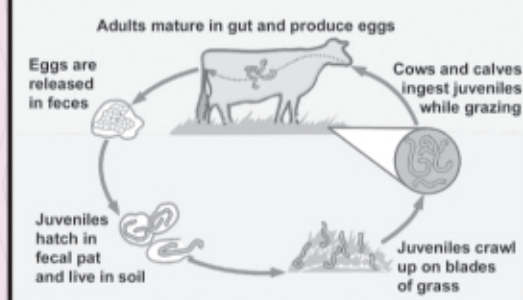
You don't like to be bothered by flies and mosquitoes and neither do cattle! Common external parasites of cattle include biting and sucking lice, ticks, mites, heel flies, horn flies, black flies, mosquitoes, horse flies and deer flies. Even fleas can be a problem sometimes.

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.



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

### Life-cycle of Strongyl Nematodes



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!

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.

**Beef It Up!**