Member and Leader Manual

This project is for members who are 12 - 13 years of age. Members will learn about the different breeds of beef, making rations for their calves, calving problems and other health concerns. Other topics will include manure management, animal welfare, ethics, carcass evaluation, markets and the consumer. Members can use a market steer or heifer, a breeding heifer, or a continuation heifer as their project animal.

- Draft 2017 -

Learning is 3D!
To help you get the most out of your learning, each project meeting has the following parts:
- **Dream it!** Plan for success
- **Do it!** Hands on learning
- **Dig it!** What did you learn?
What Skills Will You Learn?

To complete this project, members must:
- Spend a minimum of 15 - 20 hours completing the project work.
- Complete the listed activities, OR a similar activity that focuses on the same skills, as you and your members may plan other activities.
- Plan and complete the Showcase Challenge
- Complete the Portfolio Page.
- Participate in your club’s Achievement (see the inside back cover for more information about 4-H Achievement).

Achievement (project completion) requirements for 4-H Manitoba apply to this project and are described above. The amount of time spent on project work may exceed the minimum 15 hours, depending on the project that you have chosen and the activities within the project.

This project was selected to be offered by 4-H Manitoba because it provides members with the opportunity to meet Manitoba 4-H project learning objectives. These objectives include technical skills, communication, meeting management, leadership skills, as well as community involvement and real world experiences.

The project manual is a combined resource book, work book and animal record book. It provides material on a variety of topics related to raising beef.
Leader’s Information Page

4-H leader assessment of members will occur throughout the project as you observe the progress and learning of each member. Record what you see and hear. Your feedback should be positive and specific (not just “well done”). Share feedback with members often so they can act on your suggestions. How you choose to observe and record is up to you. Remember that members may improve throughout the project year and that records should be updated to reflect when they showed their best learning.

Projects promote technical, communication, meeting management, and leadership skills, as well as community involvement and real-world experiences. In addition to the specific skills members are to learn in each activity, these learning goals for members are important: Following instructions - Working with others - Using supplies safely - Using the key words - Improving with practice - Respecting timelines.

4-H LEADER TIPS FOR SUCCESS!

- Depending on time available, group size and member abilities, you may wish to break the activities in each section into more than one project meeting.

- The internet has lots of interesting websites and educational activities. We do not endorse any website or any products they may sell. Information/products will be used at your own discretion.

- Safety is a number one priority. Care has been taken to create safe, age appropriate activities throughout this manual. As leaders, it is important for you to emphasize safety rules and adapt activities to safely match your members’ abilities. Ensure members have a good understanding of safe practices when using tools, that they use the right safety equipment when necessary, and that good supervision is provided. A quality experience needs to be a safe experience.

- The multiple intelligences theory teaches us that people learn in at least 8 different ways. All individuals will be stronger in some ways of “intelligences” and weaker in others. It follows that the more ways we teach, the more members we will reach. Throughout this project, you will find a mix of teaching and learning methods. Teaching projects using a broad blend will help increase the learning potential of all members.

- Projects are designed to teach many skills, but the 4-H member is always more important than the subject matter. Stress cooperation in the activities to develop teamwork and cooperation skills. These are valuable life skills. Ensure the work is completed in a manner that members feel good about themselves and their efforts. This can be done by assigning tasks based on member’s individual abilities. Modelling and expecting supportive behaviour (i.e. no “put-downs”) in the group also contributes to a positive experience.

- There will be opportunity for experimentation and applying skills that members have learned throughout this project. Experimenting can be frustrating, but learning through trial and error is an important life skill. Explain to members that it is alright to either go on to the next activity or do the activity again if they need the practice. Help the members work through their challenges until they are satisfied with the final results. Creating inventive 4-H members will be very rewarding.

- Celebrating success is an important but sometimes overlooked part of our lives. We encourage you to use the final section to empower the members by celebrating all they have learned in a fun manner. Anything that you do to add to the spirit of fun and the sense of accomplishment of each member will likely be remembered as the highlight of their 4-H year.

Have fun and thanks for your belief in young people!
Showcase Challenge and My Portfolio Page

Showcase Challenge

The “Showcase Challenge” page gets members to think about their accomplishments and explain or demonstrate how they were successful. There is information to help them decide how they will best “Showcase” their learning to family and friends. Have members use their Member Manual to help them in organizing what they have learned. The form of the showcase can vary according to the wishes of the members and leaders, and the member’s ability. Information could be presented in many forms, some of which are: posters, pamphlets, written reports, speeches, computer presentations displays, etc. Suggestions are listed on the Showcase Challenge page at the back of the Member Manual. The best results are almost always obtained when members are allowed to present their information in the style of their choice.

Portfolio Page

Record Keeping is an important part of every 4-H project. “My Portfolio Page” is used to keep track of members’ 4-H experiences. As each member learns skills this is recorded on the portfolio page. When the Portfolio Page has been completed and confirmed by the leader, then it becomes a record of the member’s completion of the project and participation in other 4-H activities beyond the project.

As a final exercise in the project, members and leaders will pull together all this learning in completing the Portfolio Page in the Member Manual. Members and leaders must indicate how they know the member was successful at a particular skill. Leaders will find evidence if they think about what they have observed members doing, what discussions they have had with members, and what the members have produced. If leaders think that members need to go back and improve on any skill, this chart helps them clarify what needs to be done.
Unit 5

4-H Beef Making the Grade

Member’s Manual
Printed 2007

Manitoba Agriculture, Food and Rural Initiatives
www.gov.mb.ca/agriculture/
4-H Motto
Learn to do by doing

4-H Pledge
I pledge
My HEAD to clearer thinking
My HEART to greater loyalty
My HANDS to larger service
My HEALTH to better living
For my club, my community, and my country

4-H QUALITY EQUATION PRINCIPLES
Quality People
  Promote responsibility, respect, trust, honesty, fairness, sportsmanship, citizenship, teamwork and caring.
Quality Experiences
  Provide members with personal development and skill development experiences.
Quality Projects
  Promote and value quality effort.
  Promote high quality, safe food production within industry standards.

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We gratefully acknowledge the support of

Manitoba Agriculture, Food and Rural Initiatives

Agriculture and Agri-Food Canada.

Front Cover photo taken by Brenda Warrener
PROJECT COMPLETION REQUIREMENTS

FOR COMPLETION OF THIS PROJECT, EACH MEMBER MUST:

- Complete and display the "My 4-H Record" form at achievement.
- Complete all the exercises and activities in your project book that display the "Hamburger" icon. They can be found on pages 20, 23, 24, 25, 26, 27, 28, 29, 44, 52, 65, 66, 72, 73, 78, 86, 91, 109, 123, 124, 132. Pages for Market Animal, Heifer, Continuation Heifer or All Projects will be indicated at the top of each page.
- Display your project book at your Achievement.
- Display your 4-H project calf at your Achievement.
- You will need a book for each project animal you take. You do not have to redo all exercises and activities in additional books – only the ones for the specific project.

INTRODUCTION TO 4-H BEEF MAKING THE GRADE

In the Unit 5 Project you will learn about:

- Selecting, feeding, caring, and housing a beef calf
- Training, grooming, and showing
- Judging and Carcass Evaluation
- Marketing, Consumers, Ethics and Animal Welfare

IDEAS FOR ACHIEVEMENT:

- The Traditional 4-H Show, a Farm to Farm Achievement, a Skillathon Achievement, and an In the Pen Achievement. See pages 6 - 15 for more details.

BEEF TALK:

- The meaning of any words that are underlined and in italics can be found in the "Beef Talk" section at the back of your project book.

When you see the “Safe Farms” Logo and the information in the box, you will know that it is a safety tip or message.
LEADERS/PARENT PAGE

This book is for members who are twelve years old. It is written at a level that most twelve year olds will be able to read extra help. First time members may want to review the material in Units 1, 2, 3, and 4 before attempting Unit 5.

The books are a combination of manual, workbook, and record book. There are five main sections in all units of the books. They are Selection, Health, Nutrition, Facilities, and Handling. The title pages for each section are in the same format in all units. Hopefully this will be helpful when you are at a meeting and working with members who have different books. For example: they may all be working on slightly different material, but they will all be working in the Nutrition Section.

The ACTIVITIES at the end of each section are optional. Most require a minimum of preparation and resources. They can be completed in less than 30 minutes. Some are as short as 10 minutes. Hopefully they will offer leaders some new ideas for presenting and reviewing the material studied in the section. Each unit has different activities, so you can choose the ones you think are most suited to your group. Some of these activities can be done by an individual member on their own.

Take time to read over the Project Completion Requirements and Project Information with your members. Remind them that any exercise displaying the Hamburger icon has to be completed. Members who are taking more than one project animal will have to duplicate the required pages in the selection, health, nutrition, grooming, and summary. These are the pages that deal with feed and other costs. The meanings of words that are Bold, Underlined, and in Italics throughout the manual can be found in the Beef Talk section at the back of the book. There is also an answer key for the quizzes at the back.
IDEAS FOR ACHIEVEMENT

If you want to provide 4-H members with a learning experience that emphasizes all aspects of production you might want to use the scorecards on the following pages. They can be used to evaluate the total project year rather than just the live animal as it appears on show day. This method will recognize members for their learning and effort for the entire year. If we attempt to teach 4-H youth proper selection, care, and nutrition then we should reward them for their successes in those areas.

The scorecard gives several evaluations and weights for each category to determine a composite score. Members can be successful on one, two, and all three areas on the scorecard and by doing so can be successful without “winning” the class. Members are scored against set criteria, not against each other. Every member receives a copy of their scorecard back so they can see where they did well, and where they need to improve. The members receive recognition certificates based on their total score.

**Quality Equation**

- Quality People
- Quality Experiences
- Quality Projects
PROJECT ANIMAL SCORECARD

The Market Animal Scorecard evaluates in three different areas. The lean yield score emphasizes the importance of producing a high value carcass. The usefulness score evaluates the animal’s traits such as frame, muscling, trimness and correctness. The gain and quality grade score evaluates the rate gain and grade of the animal, which is an indication of how successful the member was at feeding the animal to reach the goal weight.

The Replacement Heifer Scorecard evaluates the various desirable traits and characteristics of a good heifer, the rate of gain, and the breeding success.

The Continuation Heifer (Cow/Calf Pair) Scorecard evaluates the various desirable traits and characteristics of a good cow, body condition, and the characteristics of the calf.

This program does not guarantee a winner in the show ring, but it does provide an opportunity for success for every 4-H member. (See scorecards on following pages)

Note: For more information on this method of evaluation, contact your local MAFRI GO Centre/Office or Rural Leadership Specialist.
## Market Animal Scorecard

<table>
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### ***LEAN YIELD***

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<td>Medium</td>
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<td>High 2</td>
<td>58.0-58.9</td>
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<td>Medium 2</td>
<td>56.0-57.9</td>
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<td>Low 2</td>
<td>54.0-55.9</td>
<td>8</td>
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<tr>
<td></td>
<td>&lt;53.9%</td>
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Maximum Score Available: 20

### ***USEFULNESS EVALUATION***

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<thead>
<tr>
<th>Trait</th>
<th>Low</th>
<th>Fair</th>
<th>Avg.</th>
<th>Good</th>
<th>Excellent</th>
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<tr>
<td>Total Muscling</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Total Trimness</td>
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<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Growth/Frame</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Structure/Balance</td>
<td>1</td>
<td>3</td>
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Maximum Score Available: 36

### ***GAIN & QUALITY GRADE***

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<th>B</th>
<th>A</th>
<th>AA or Better</th>
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<td>2.4 or &lt;</td>
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<td>2.6</td>
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<td>3.0</td>
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Maximum Point Spread/Grade: 11

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<tr>
<td></td>
<td>0</td>
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<tr>
<td></td>
<td>+3</td>
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<tr>
<td>&gt;1451</td>
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TOTAL (Max. 114)

Printed Sept. 2004
## Replacement Heifer Scorecard

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### ***USEFULNESS EVALUATION***

<table>
<thead>
<tr>
<th>Trait</th>
<th>Low</th>
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<th>Avg.</th>
<th>Good</th>
<th>Excellent</th>
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<tbody>
<tr>
<td>Muscling</td>
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<td>2</td>
<td>3</td>
<td>4</td>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Length</td>
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<td>4</td>
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<td>Head and neck</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Udder</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>Pins</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
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**Maximum Score Available 60 points**

### ***GAIN ***

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<td>BCS 2 or 3</td>
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<td>BCS 4 or 5</td>
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<td>BCS 6 or 7</td>
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<tr>
<td>BCS 8 or 9</td>
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**Maximum Score 30**

### ***BREEDING SUCCESS ***

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<tr>
<td>Breeding Attempted</td>
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<tr>
<td>Heifer Pregnant</td>
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**Maximum Score 20**

### TOTAL SCORE

Possible 110 points
# Continuation Heifer (Cow/Calf) Scorecard

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<tr>
<th>Number</th>
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<th>Scan Data</th>
<th>Weight of Calf</th>
<th>A.D.G.</th>
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### **USEFULNESS EVALUATION**

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<th>Avg.</th>
<th>Good</th>
<th>Excellent</th>
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<td>4</td>
<td>5</td>
</tr>
<tr>
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<td>3</td>
<td>4</td>
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<td>4</td>
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<td>Length</td>
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Maximum Score Available 50 points

**Score**

### **BODY CONDITION***

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<tr>
<td>BCS 2 or 3</td>
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<tr>
<td>BCS 4 or 5</td>
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<td></td>
</tr>
<tr>
<td>BCS 6 or 7</td>
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<tr>
<td>BCS 8 or 9</td>
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Maximum Score 30

**Score**

### **CALF USEFULNESS***

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Maximum Score 20

**Score**

TOTAL SCORE Possible 100 points

---

10
SKILLATHON ACHIEVEMENT

The Skillathon can be done in a competitive or non-competitive manner. It is an opportunity for the members to demonstrate the skills they have acquired. The following are some tips that could be helpful in organizing the event.

- Set up at least 4 stations relative to the project. (see next page)
- Make stations as hands-on as possible.
- Aim for approximately 5 minutes/station for each member to complete the station activities.
- Consider giving a participation token to each member.
- If scoring, 25 marks per station makes an easy score out of 100 (4 stations x 25 marks). Develop a clear system for allocating points at each station. This allows for faster and more consistent scoring.
- Avoid sharing of answers through station layouts or have multiple situations at the station so that everyone does not get the exact same scenario.
- Develop stations with different degrees of difficulty for junior, intermediate and senior participants OR (if ranking) only compare junior participant scores to other junior participants scores.
- Have members rotate through the stations doing their best at each station.

Skillathon Station Ideas

1. **Title:** Feed Quality

   **Supplies:** 4 flakes of different hay, judging cards, pencil, Hormel scorecard.

   **Set up:** Number the 4 flakes of hay and line up on a table.

   **Task:** Rank the quality of these 4 hay samples from highest quality to lowest quality. State your placings and reasons on a judging card.

   **Evaluation:** Have an “official hay judge” rank the hay samples and give reasons. Mark placings by comparing to the “official judging card”. Mark placings by using the Hormel scorecard. (If you want a more advanced level, have feed analyzed and display lab results for members to assess).
2. **Title: Feed Stuff Identification**

**Supplies:** 5 samples of feed stuff, 10 cards with feed stuff names (5 of which correctly name your feed samples) e.g. rolled oats, barley, trace mineral mix, alfalfa pellets, etc.

**Set up:** Place 5 samples of feed stuff in margarine tubs and line up on a table. Have a tub full of name cards.

**Task:** Identify the feed sample by placing a name card next to it.

**Evaluation:** Count the number of correct identifications.

3. **Title: Feed Labels**

**Supplies:** Collect copies of 10-15 beef feed tag labels. Write a question on the reverse of the tag that members can find the answer to by reading and understanding the tag. Example questions:
- What is the main ingredient in this feed?
- What type of beef cattle should this be fed to?
- What is the active drug ingredient in this feed?
- What is the crude protein level of this feed?
- How many kgs/lbs. of this feed should be fed daily?
- Are there any dangers with using this feed?
- How long prior to slaughter should this feed be removed?
- How many pounds of ingredients are included in this bag?

**Set up:** Tub with feed tags in it.

**Task:** Select 1-5 (you determine the exact number) feed tags from the bucket. Answer the questions on the reverse of the tag.

**Evaluation:** Count number of correct answers.

4. **Title: Meat Cut Identification**

**Supplies:** Draw a beef carcass on bristle board or enlarge and laminate a diagram of a beef carcass. Be sure to remove labels. Cut into pieces.

**Set up:** Place “carcass pieces” in a tub.

**Task:** Select 1-4 (you determine the exact number) carcass pieces from the bucket. Answer the following questions about each piece:

1. Name of the cut.
2. Where is the cut located on the animal’s body?
3. Quality of cut - low, medium or high.

**Evaluation:** Count the number of correct answers.
5. Title: Quality Assurance

Supplies: Copies of - A scenario for vet prescription - A poster of a steer

Example:
The steer you are planning on taking to the fair next month is lame in the left front leg. Today your veterinarian has diagnosed the steer's problem as foot rot and has given it an initial treatment at the time of the examination. The veterinarian has left additional medication with you to continue the treatment. The directions on the medication tell you to give the steer 1 cc per 50 kg. body weight once daily for four days, beginning tomorrow, and to give it by intramuscular injection. Your steer weighs 450 kg. Remember, your veterinarian treated the steer today, July 3, 2006 and you will treat it 4 more days as directed. The hold time on this product is 14 days. Look at the label on the following page to determine the answers to these questions:

1. How much will you give the steer each day?
2. How much will you need to treat it for four days?
3. What is the first FULL day the steer could be safely slaughtered for food?
4. On the poster, show the preferred site for the intramuscular injection.

<table>
<thead>
<tr>
<th>Emily Edwards, DVM</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Quality Avenue</td>
</tr>
<tr>
<td>Hometown, MB R7A 16Z</td>
</tr>
<tr>
<td>204-555-5050</td>
</tr>
</tbody>
</table>

Owner: Jennifer Wilson          Date: July 3, 2006
Animal ID: Hereford #351       Indications: Foot Rot
Directions: Give 1 cc per 50 kg. body weight IM once daily for four days beginning July 4.
Precaution: Avoid injection into muscle of high carcass value.
WARNING: USE OF THIS DRUG MUST BE DISCONTINUED FOR 14 DAYS BEFORE SLAUGHTER OR MARKET FOR FOOD.
Active Ingredients(s) Hydrocillin   exp. Date: Sept. 30, 2006

Task: Read the scenario and complete the drug label, and answer the questions.
Evaluation: Count the number of correct blanks in drug label and correct answer to questions.
6. Title: Breed Identification
   Set Up: Lay out photos of cattle breeds on table. Have a tub of name labels.
   Task: Match the name label to the breed picture.
   Evaluation: Count the number of breeds correctly identified.

7. Title: Parts of a Beef Animal
   Supplies: Poster of a beef animal. Plastitak or pins (something to stick on animal parts). Name labels for animal parts.
   Set Up: Put poster on wall. Tub of "parts of a beef animal" labels.
   Task: Match the name label to the animal part.
   Evaluation: Count the number of parts correctly identified.

8. Title: Equipment Identification
   Supplies: 5 grooming supplies. 10 labels of grooming supply names. 10 labels identifying use of grooming supply.
   Set Up: Lay out grooming supplies. Two tubs of labels - one for supply name and one for use.
   Task: Match the name and use to the appropriate grooming supply.
   Evaluation: Count number of correct matches.

9. Title: Herd Records
   Supplies: 10-15 copies of a beef animal pedigree
   Set Up: Have pedigrees in a tub. Copies of questions.
   Task: Select a pedigree from the tub and answer the following questions:
   1. Who owns the animal?
   2. What is the original owner’s herd prefix?
   3. What is the animal’s birth date?
   4. What sex is the animal?
   5. What did the animal weigh at birth?
   6. Who is the animal’s mother?
   7. Who is the animal’s father?
   8. Who is the animal’s great grandmother?
   9. Is the animal purebred?
   10. What breed is the animal?
   Evaluation: Count the number of correct answers.
10. Title: Show Your Stuff

Supplies: Dependent on task

Set Up: Assign a particular task and have the members demonstrate how it is done (dependent on circumstances, this may be done on a live animal or a model). These could also be used as separate stations. Examples of tasks:
- groom an animal
- prepare a tail for the show ring
- tag an animal
- needle an animal with a specific drug
- halter an animal
- make a rope halter
- tie a quick release knot
- demonstrate five safe handling tips

Evaluation: Determine specific points that you want members to allocate and count the number of points that they demonstrated.

THESE ARE JUST A FEW IDEAS - YOU CAN CREATE OTHER STATIONS TO MATCH THE AGE AND LEVEL OF LEARNING IN YOUR CLUB.

"FARM TO FARM" ACHIEVEMENT

At a "farm to farm" achievement, members travel together to each farm to weigh, and view the members' calves. The score cards on the previous pages could be used, or the club can make up its own criteria. For extra learning, each member could be responsible for setting up one skill station or activity at their farm for the other members to participate in. Activities could be competitive or non-competitive. A potluck meal or windup could be planned for the end of the day, where tokens, awards, etc. could be handed out.

"IN THE PEN" ACHIEVEMENT

Members bring their calves to one location. Calves could be divided into pens according to junior, intermediate, and senior members. There could also be separate pens for heifers, cow/calf pairs and beginning beef. Criteria for judging these animals could be set out ahead of time so everyone is aware of the standards. Scorecards could be made up from those standards for heifers, cow/calves and beginning beef calves. Awards, certificates, etc. could be presented as calves are judged or at the end of the day.
RESPONSIBLE ANIMAL CARE
As a 4-H member, it is your responsibility to treat your animals humanely to allow them to remain healthy and comfortable.

The Five Principles of Animal Care are:

Adequate air, water and feed
Safe housing and sufficient space.
Appropriate complexity of the environment.
Regular (daily) supervision and effective health care.
Sensible handling

Whenever you see the icon of the animals, like the one below, you will be reminded of that responsibility and how it fits into the different sections of your manual and the information you are learning about.

Source: Ontario Farm Council (OFAC), 1992
It's important to choose a calf that will adjust to being handled and will feel comfortable in the surroundings you have planned for it.
Market Animal Project

Selecting Your 4-H Calf

There are several characteristics you should look for in a market calf.

- **Frame Size**: The frame of an animal is its skeleton. The animal must have a large enough frame to allow it to grow to the desired weight for selling.
- **Length, Width and Height**: Look for an animal that is long in the body, even in width from the front to the rear, and fairly tall with a deep body.
- **Muscling**: Looking at the animal from the rear, it should be widest though the stifle region. Thickness through the centre of the round is a good characteristic. If the rear feet are close together the calf could lack muscling.
- **Trimness**: The calf should be trim through the brisket, flank and twist.
- **Health**: Look for a healthy calf; one that is alert, with a smooth hair coat, and shows no signs of disease.

**Temperament:**

Avoid a calf that appears wild and scared, is tramping/kicking, charges or cowers in fear. A calf that is comfortable around people will eat and grow better for you.

SAFE FARMS

SPOT THE HAZARD

FIND A SAFER WAY EVERYDAY
Selection

Heifer Project

If you are selecting a breeding heifer you will want to look for the following characteristics:

- **Frame**: A heifer should have a frame that will allow enough growth to carry and deliver a calf successfully. She needs to have ribs that are quite deep and will allow for the extra weight of a calf.

- **Length, Width and Height**: A good heifer should have a long body with a long, level rump and strong topline.

- **Muscling**: Look for a heifer with a deep, long muscled rear quarter.

- **Trimness**: A good heifer should have a feminine head and a neat throat, dewlap, and brisket area.

- **Legs**: A heifer needs to have good legs, strong pasterns, and a correct set of hocks so she can graze and carry the extra weight of an unborn calf.

- **Udder**: The heifer should have an udder with uniform teats.

Does the heifer seem to have a good temperament? You will want to be able to work safely around her and her calf.
**Market Animal Project**

Using the following checklist, rate the *characteristics* of the market animal you have selected.

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>FAIR</th>
<th>GOOD</th>
<th>VERY GOOD</th>
<th>EXCELLENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRAME SIZE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LENGTH, WIDTH AND HEIGHT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUSCLING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRIMNESS</td>
<td></td>
<td></td>
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<tr>
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<tr>
<td>HEALTH</td>
<td></td>
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</tr>
</tbody>
</table>

**Heifer Project**

Using the following checklist, rate the characteristics of the beef heifer you have selected.

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>FAIR</th>
<th>GOOD</th>
<th>VERY GOOD</th>
<th>EXCELLENT</th>
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</thead>
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<tr>
<td>FRAME</td>
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<td></td>
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<tr>
<td>WIDTH, HEIGHT, AND LEGTH</td>
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<td>MUSCLING</td>
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<td>TRIMNESS</td>
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<tr>
<td>TEMPERAMENT</td>
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</tr>
</tbody>
</table>
All Projects

CROSS BRED OR PUREBRED?

A purebred calf is one whose parents are of the same breed. The animal may be registered with their breed association. Purebred cows, heifers and bulls usually sell at higher prices.

A crossbred calf is one which has parents of different or mixed breeds. The calf will hopefully show the best characteristics of both parents. Crossbred calves often show improvements over their parents in fertility, growth rate and feed conversion.
The following breeds are breeds that came to Canada in the 1800’s from England and Scotland. For many years purebreds and crossbreds from these basic breeds were the only cattle in Canada.

- **ANGUS**
- **HIGHLAND**
- **HEREFORD**
- **RED POLL**
- **SHORTHORN**
SELECTING A MARKET CALF TO MEET YOUR 4-H PROJECT GOALS

Use the following chart to determine if the calf you would like to use for 4-H can meet your weight goal by achievement.

Table 1. Cattle Frame Scores Based on Hip Height in Inches

<table>
<thead>
<tr>
<th>Age (months)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<tbody>
<tr>
<td>5</td>
<td>33.5</td>
<td>35.5</td>
<td>37.5</td>
<td>39.5</td>
<td>41.6</td>
<td>43.6</td>
<td>45.6</td>
<td>47.7</td>
<td>49.7</td>
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<tr>
<td>6</td>
<td>34.8</td>
<td>36.8</td>
<td>38.8</td>
<td>40.8</td>
<td>42.9</td>
<td>44.9</td>
<td>46.9</td>
<td>48.9</td>
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<tr>
<td>7</td>
<td>36.0</td>
<td>38.0</td>
<td>40.0</td>
<td>42.1</td>
<td>44.1</td>
<td>46.1</td>
<td>48.1</td>
<td>50.1</td>
<td>52.2</td>
</tr>
<tr>
<td>8</td>
<td>37.2</td>
<td>39.2</td>
<td>41.2</td>
<td>43.2</td>
<td>45.2</td>
<td>47.2</td>
<td>49.3</td>
<td>51.3</td>
<td>53.3</td>
</tr>
<tr>
<td>9</td>
<td>38.2</td>
<td>40.2</td>
<td>42.3</td>
<td>44.3</td>
<td>46.3</td>
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<td>55.1</td>
<td>57.1</td>
<td>59.1</td>
<td>61.0</td>
</tr>
</tbody>
</table>

Source: Beef Improvement Federation, 1990
How to Use Frame Scores

The height of a beef animal at a given age can be used to help estimate the growth potential of the animal, as well as its mature size. Cattle with low frame scores are generally small and short, with lighter finish weights. Cattle with high frame scores are usually taller and mature later, with heavier body weights at finish.

In order to determine a frame score, you will need an accurate measurement of hip height. It is important to remember that frame scores can be affected by factors such as level of nutrition and inaccuracy of measurement. Therefore, although frame scores can provide a good source of information, they should only be used as a guide for animal selection in combination with genetic information and weight, health, and overall appearance of the animal.

An initial frame score is very helpful to use in setting goals and "target weights"

Example: Your steer is 9 months old today and his hip height measurement is 46.5 inches. Find the "9" in the "Age" column and go across until you find a measurement that is close to 46.5. The closest figure to 46.5 is 46.3. Going to the top of that same column, you will find that the frame score is a "5." Go to animal #5 to determine the approximate finished weight of the animal.

Example: Your steer is a frame score "5" with a target weight of 1200 lbs. Starting weight = 680 lbs. Target weight = 1200 lbs. Total gain = 1200 - 680 = 520 lbs ADG = 520 lbs. ÷ 168 days in feeding period = 3.10 lbs./day gain

<table>
<thead>
<tr>
<th>Estimated Target Weight</th>
<th>Starting Weight</th>
<th>Total Gain Required</th>
<th>Days on Feed</th>
<th>Required Average Daily Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>________</td>
<td>-</td>
<td>________ / ________</td>
<td>= ________</td>
<td></td>
</tr>
</tbody>
</table>

24
SELECTING A HEIFER PROJECT ANIMAL

If you have selected a replacement/breeding heifer, you will want to choose a heifer that will be large enough to breed at the time you have planned for breeding. Heifers should be a minimum of 65% of their mature weight at the time of breeding. The breed chart on the following page will give you a general idea of the mature cow weight for the various breeds.

Weigh your heifer and answer the following questions to find out how much your calf will have to gain each day to meet your project goals.

1. Weight of Heifer  
2. Estimated Mature Weight  
3. Estimated Breeding Weight  Answer #2_____ x 65/100 = _______
4. Estimated Breeding Date  
5. Days in Feed Period (how many days from first day of feeding until estimated breeding date)?  
6. Weight Gain Required  answer #3_____ - answer #1_____ = _______
7. Average Daily Gain Required  answer #6_____ / answer #5 = _______ per day

GOALS for your Heifer Project should include:

- Reaching a good breeding weight by your breeding date.
- Having your heifer breed successfully.
CONTINUATION HEIFER (Cow/Calf Pair) PROJECT

If you have selected a Continuation Heifer for your project, you will already have your project animal. Your heifer should be in calf when the project year begins and the calf should be born before the achievement date.

GOALS for your project should include:

- Feeding a ration that will see your heifer continue to grow towards a mature weight.
- Producing a healthy calf.

1. Beginning weight of heifer __________
2. Estimated mature weight __________
3. Weight to Gain answer #2_____ - answer #1_____ = _______

AVERAGE MATURE WEIGHTS OF COWS

<table>
<thead>
<tr>
<th>Breed</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limousin</td>
<td>1450 lbs.</td>
</tr>
<tr>
<td>Gelbvieh</td>
<td>1300 lbs.</td>
</tr>
<tr>
<td>Hereford</td>
<td>1400 lbs.</td>
</tr>
<tr>
<td>Salers</td>
<td>1250 lbs.</td>
</tr>
<tr>
<td>Angus</td>
<td>1250 lbs.</td>
</tr>
<tr>
<td>Blondes Aquitaine</td>
<td>1300 lbs.</td>
</tr>
<tr>
<td>Charolais</td>
<td>1450 lbs.</td>
</tr>
<tr>
<td>Dexter</td>
<td>700 lbs.</td>
</tr>
<tr>
<td>Simmental</td>
<td>1400 lbs.</td>
</tr>
<tr>
<td>South Devon</td>
<td>1300 lbs.</td>
</tr>
<tr>
<td>Shorthorn</td>
<td>1400 lbs.</td>
</tr>
<tr>
<td>Luing</td>
<td>1250 lbs.</td>
</tr>
<tr>
<td>Maine Anjou</td>
<td>1600 lbs.</td>
</tr>
<tr>
<td>Pinzgauer</td>
<td>1400 lbs.</td>
</tr>
<tr>
<td>Murray Grey</td>
<td>1200 lbs.</td>
</tr>
</tbody>
</table>

NOTE: These weights are averages for the purebreds of each breed. Be sure to ask your parent or leaders their opinion on how much your animal might weigh when mature.
In the space below, attach a picture of your calf OR draw a picture of your calf OR describe what it looks like including markings, and coloring.

Your calf’s name __________________________
THE NATIONAL IDENTIFICATION PROGRAM

By September 1, 2006 all cattle leaving their herd of origin have to be tagged with a CCIA approved radio frequency identification tag. If animals that have been tagged, die and are disposed of on the farm, producers are required to report the death to ensure the tag number is retired.

What is the number on your calf’s CCIA tag?__________
All Projects

Note: This 4-H Beef Animal Record can be used for as many years as you are in the Beef Project. You can move it from one project book to another. If some dates are unknown give approximate dates.

**MY 4-H BEEF ANIMAL RECORD**

<table>
<thead>
<tr>
<th>Year</th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Project Animal</td>
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</tr>
<tr>
<td>Birth Date</td>
<td></td>
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<tr>
<td>Breed</td>
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</tr>
<tr>
<td>Breed of <strong>Sire</strong></td>
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</tr>
<tr>
<td>Breed of <strong>Dam</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Tag/Tattoos/Brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birth Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CONTINUATION**

**HEIFER**

| Breeding Date | | | | |
| Type of Breeding | | | | |
| **Sire** | | | | |
| Preg. Check Date | | | | |
| Birth Date | | | | |
| Calf Birth weight | | | | |
| Sex | | | | |
| Tag/Tattoos/Brand | | | | |
THE BEEF BREED ROUND-UP

PREPARATION:
- Have a list of breed names available for the person running the round-up.
- Game can be played individually or in one or more teams.
- The game is best played on a chalk board, large poster board, or flip chart so that everyone can see. Simply transfer the blanks for each question from the sheet provided.

PLAYING THE GAME:
- The correct amount of blank spaces is displayed.
- Determine who will go first, second, third, etc. and keep that rotation.
- The first person or team guesses a letter. If the name includes that letter put it in the appropriate blank. If it does not include that letter just write the letter down off to the side so that everyone is reminded that it has been used.
- If the person or team guesses correctly, they get to guess another letter OR they can make a guess at solving the breed name. They can’t do both.
- If the person or team guesses incorrectly, the game moves to the next person or team in the rotation.
- When the name is guessed correctly, move on to a new round (breed name).
- The person or team who “rounds up” the most beef breed names wins.
- Answers on page 134.
Regular (daily) supervision and effective health care, to prevent illness and initiate prompt assistance when required.
All Projects

Keeping Out Diseases

Controlling diseases in cattle begins with preventing diseases from entering your farm. Some diseases are contagious, and are spread when cattle are moved from farm to farm. Diseases can be carried on the skin or clothing of visitors. Animals, insects and birds can also bring disease to your farm. Minimizing stressful situations can also help to prevent diseases. Stress can be caused by overcrowding, poor nutrition, and poor handling practices.

Parasites

When parasites use a beef animal as a host, it affects the animal’s health and how well it grows and produces. Fortunately, many parasites can be prevented or treated. Cattle with internal parasites may be weak, not eating well, have a rough dull coat of hair, have scours, and low milk production. Cattle with external parasites may seem uncomfortable, scratch on fences and trees, have a rough hair coat, and may be difficult to handle.

Roundworms are the most common internal parasites in beef animals. The larvae of the roundworm attach itself to hay or grass and are eaten by the animal. The worms live inside the body and produce eggs which pass out of the animal in the manure. The eggs hatch and once again the larvae attach themselves to the grass.

Coccidiosis has both an external and internal stage. It is caused by protozoa, and often affects weaned calves between six and twelve months, usually in the winter months. Crowding, feeding on the ground, and contaminated water
are all causes. An oocyst (microscopic egg) moves out of an infected animal in the manure. The oocyst grows and develops eight bodies called sporozoites. They are picked up in feed or water by other animals. Each sporozoite enters a cell in the animal’s intestine and divides many times. Male cells fertilize female cells, and a new oocyst is produced which once again is passed in the manure. Symptoms are diarrhea, (watery or with blood), dehydration, weight loss, and lack of appetite. Older animals might recover from coccidiosis, but they can still pass oocysts in their manure which can infect other animals.

You can help to prevent coccidiosis by using feeders and watering methods that don’t allow manure to be mixed with the feed and water. Always isolate infected animals. Keep pens well bedded, and avoid crowded conditions.
Vaccinations introduce infectious organisms of the disease that we are trying to prevent the animal from getting. The animal then produces antibodies to the vaccine and develops immunity to the disease. Live vaccines contain live disease causing organisms that are altered so they won’t actually cause the disease. Killed vaccines contain dead organisms such as bacteria. They are added to a liquid carrier. Be sure to read the directions on the label for dosage, how to give the vaccine, expiration date, and storing conditions. It is important to needle an animal in an area where very little meat damage could occur. The best place is in the neck area. Some diseases that can be prevented by vaccinating are blackleg, BVD, BRD, BRSV, tetanus, enterotoxaemia, and malignant edema.
The label on the medication will tell you whether the vaccine should be given under the skin (subcutaneous) or in the muscle (intramuscular).

### INJECTION TECHNIQUES FOR BEEF CATTLE

#### Intramuscular - IM
All intramuscular injections should be given in the neck muscle behind the base of the ear and ahead of the shoulder point. Use a 1-1½" 16-18 gauge needle.

#### Subcutaneous - SC
To minimize carcass damage, insert needle into loose, tented skin of neck in front of shoulder (preferred injection method). Use a 1 inch 16-18 gauge needle.

### Giving an Injection
- Read the label and instructions.
- Restrain the animal. An animal that moves suddenly can hurt you.
- Use the correct size of needle. A 16 gauge needle can be used for heavier medications that have an oil base. An 18 gauge needle may be used for lighter medication.
- Use a shorter needle (3/4 inch) for subcutaneous injections, and a longer needle (1 - 1 ½ inch) for intramuscular injections.
- Choose a clean area of skin to decrease any chance of infection.

Diagram courtesy of the Canadian Cattleman's Association
All Projects Dehorning Cattle

Animals with horns can cause health and safety problems for the animal, other animals they are with, and people who work around them. Some of these problems are:

- Causing injuries to other cattle while being transported and in pens.
- Aggressive animals using their horns to push other animals around and away from feed.
- Horned animals have trouble using some feeders.
- People can be injured by animals with horns.
- Damage to buildings and fences.

Dehorning is easier, safer, and less painful to younger animals because there is not as much blood flow to the horns. There are several methods of dehorning, depending on the age of the animal.

Chemical Dehorning: Used only on calves less than two weeks old.

- Clip hair around base of horn.
- Put Vaseline or grease on clipped area to stop caustic paste from running and burning the skin.
- Rub caustic paste on the horn. Make sure the paste goes all the way around the horn. The area covered should be no bigger than the size of a quarter.
- Keep the calf away from its mother until the paste is dry.
- If you see any sign of burning on the head, wash it with a mixture of one part vinegar and three parts water.
- Do not apply if it looks like rain because the paste will run causing burns on the face and possibly eye damage.
**Electric Dehorning:** Used on calves under five months of age.
- Apply iron to horn for 15 - 20 seconds.
- Be sure that the circle completely surrounds the base of the horn.
- Don’t burn too deeply.
- Correctly done, the burnt area and horn bud will peel off in four to six weeks.

![Electric Hot Iron Dehorner](image)

**Gougers:** Used on animals with horns that are less and 3.5 cm or 1.5 inches in length.
- This process scoops the born bud from the head of the calf.
- The gouge should include 3mm - 1 cm deep around the horn.

![Gougers](image)

**Wire:** Used on horns that may be too long for gougers.
- Be sure the animal is properly restrained as this method takes a little longer than some of the other methods.
- The wire is used by moving it back and forth in a sawing motion.
- This method allows a cut that is close to the skull.
Castration

There are two types of castration. With Surgical Castration, the scrotum is opened and the testicles and cords are removed. With Non-surgical Castration the procedure does not leave an open wound. Bull calves are castrated for several reasons:

- To be sure that they won't breed.
- To reduce the heavier head and shoulders a bull would have.
- Less fighting in the pens.
- Steers produce a better carcass.
Surgical Castration: Be sure that all equipment is clean. Boil it in water for 30 minutes. **Disinfect** tools between each animal.

The Knife Method

- Split the side or remove the bottom third of the scrotum. There is less pain when the cut is made below the testicles.
- Remove the testicle by pulling or squeezing it through the opening.
- Pull downward on it to show the spermatic cord.
- Slide your thumb up and down the cord to separate it from the connecting tissue.
- A slow, steady pull will break the muscle that controls the position of the testicle.
- Remove the testicle by scraping the cord with a dull knife inside the scrotum until it is cut free.
The **Emasculator**: The emasculator is both a clamp and a knife. Not for use on calves over 220 kgs or 500 lbs. because there is too much blood flowing to the testicles.

- Place the emasculator over the cord with the crushing part toward the body.
- Hold the emasculator as close to the body as possible.
- Squeeze the handle to crush the cord and cut off the testicle.
- Keep pressure on the cord for at least 10 seconds after you cut so it won't bleed too much.

---

**Non-Surgical Castration**

The **Burdizzo**: The burdizzo is a blunt jaw pincher used to crush the spermatic cord and blood vessels which lead to the testicles.

- Find the testicle and the cord in the scrotum.
- Pull the cord to the side of the scrotum with your thumb and index finger.
- Clamp the cord with the burdizzo.
- Hold for five seconds.
The Elastrator: Used only on calves one month of age or younger.

- Place the rubber band on the elastrator.
- Open it wide and slide the band up over the testicles near the body.
- Check to be sure both testicles are in the scrotum.
- Release the band.

Always properly restrain animals for safety.
Photo courtesy of Hi-Qual Manufacturing
<table>
<thead>
<tr>
<th>DATE</th>
<th>PROCEDURE, AILMENT OR DISEASE</th>
<th>MEDICATION, TREATMENT, VACCINATION</th>
<th>DOSEAGE</th>
<th>ROUTE</th>
<th>SITE</th>
<th>COST</th>
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<tbody>
<tr>
<td>Oct. 28/06</td>
<td>Blackleg Vaccination</td>
<td>Subcutaneous</td>
<td>Neck</td>
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<td>Parasites Ivomec</td>
<td>Pour-on</td>
<td>Back</td>
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<td>Nov. 4/06</td>
<td>Dehorned Gougers</td>
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<tr>
<td>Nov. 15/06</td>
<td>Castration Burdizzos</td>
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<tr>
<td>Dec 5/06</td>
<td>Bloat Bloat Go 1 litre Drenching</td>
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<td>ROUTE</td>
<td>SITE</td>
<td>TIME</td>
<td>COST</td>
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</table>

**TOTAL COST**

44
Heifer and Continuation Heifer Projects

CALVING PROBLEMS

Dystocia or difficulty in calving may occur at any stage of the calving.

These are some possible causes for those problems.

- Small cow or heifer, or one that is not fully grown
- Incorrect position of the calf
- Problems with the pelvis of the cow
- A large calf
- More than one calf
- Uterus not in correct position

If the calf is presented in an abnormal position it may be possible to adjust the calf to the normal birthing position.
Before you attempt to correct the position of the calf be sure to:

- Remove clothing that will be in the way and any sharp objects such as watches and rings.
- Wash the cow’s vaginal area with soap, a mild disinfectant and warm water.
- Be careful not to puncture the cow’s uterus with your fingers.
- Hold the calf’s hooves in the cup of your hand when moving the legs so they don’t puncture the uterus.

The following are some of the incorrect calf positions, and suggestions for correcting the position:
One leg crossed over the neck

Feet First, Head Back
Front feet first with head down between the legs

Breech Calf (backwards)

Breech calf with rear legs tucked under its body
Health

Hip lock

Multiple Births
Calving Chains can be used to help deliver the calf if the cow is unable to push it out on her own. Using chains or ropes incorrectly could cause damage to the legs of the calf. Use the following steps.

Soak the chains and handles in disinfectant.

Make a loop in the calving chain by passing one end through the large ring at the end of the chain.

Slip the loop over your hand and form a cone with you hand so you don’t tear the uterus.

Slip the loop over the leg of the calf and slide it up past the dew claws and tighten the chain.
Make sure the chains come up from the underside of the leg so you can pull the legs straight.
Make a half hitch in the chain between the dew claws and the hoof head to help distribute the force on the bones.

Pull first on one leg and then on the other. The calf will move easier this way.

Pull at the same angles that it would naturally be born in.
Work with the cow – pull when she is pushing.
Heifer and Continuation Heifer Projects

Number the following 12 calving steps in the correct order.

_____  Calf’s hips and hind legs appear.
_____  Udder fills with milk.
_____  Calf nurses for the first time.
_____  Calf enters birth canal.
_____  Mother becomes restless.
_____  Calf’s front legs and head appear.
_____  Contractions about 15 minutes apart.
_____  Afterbirth comes out.
_____  Contractions are two minutes (or less) apart.
_____  Water sac breaks.
_____  Calf’s head and shoulder’s appear.
_____  Calf changes position in the uterus.

Answers on page 134
SHARPENING UP YOUR NEEDLING SKILLS

PREPARATION:

- A selection of needles – long and short, and different gages.
- A selection of syringes.
- Some liquid to use for medication – add a little food coloring or kool-aid so the coloring will show up. If you have an empty medication bottle you could put the liquid in it with a needle and syringe.
- If you have enough empty medication bottles to put a label on each one that’s great, but one bottle will do – just lay the labels out for the members to find the correct one for their situation.
- A few oranges.
- Some stretchy socks to fit over the oranges.
- The subcutaneous injections might leak out a little depending how absorbent the sock is.

ACTIVITY:

- Give each member a needling situation.
- Have the members administer their needle one at a time so they learn techniques and tips from each other.
- Assist members to administer their needling situation correctly.
- Members need to read the situation.
- Find the correct medication instructions.
- Choose the correct needle for the job.
- Put the needle on the best syringe for the situation.
- Draw the right amount of medication from the bottle.
- Give the injection in the correct location on the orange – in the muscle is through the skin – under the skin is between the sock and the orange skin.
<table>
<thead>
<tr>
<th>Situation #1</th>
<th>Situation #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selenium for a new-born calf</td>
<td>Vitamin A &amp; D for a new-born calf</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Situation #3</th>
<th>Situation #4</th>
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</thead>
<tbody>
<tr>
<td>Tasvax 8-way vaccination for a six month old calf</td>
<td>Dexamethasone 2 for a 150 lb. calf with navel ill</td>
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</table>

<table>
<thead>
<tr>
<th>Situation #5</th>
<th>Situation #6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccinate your 4-H calf with Fusogard to prevent hoof rot</td>
<td>Use Oxy LA antibiotic for retained placenta</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Situation #7</th>
<th>Situation #8</th>
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</thead>
<tbody>
<tr>
<td>Needle your 4-H calf for pneumonia with Micotil. He weighs 600 lb.</td>
<td>A 3 month old calf weighing 200 lbs. has coccidiosis. Needle with Trivetrin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Situation #9</th>
<th>Situation #10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccinate your heifer for BVD and 1 BR, P1-3 and BFSV with Resva 4/ Somubac</td>
<td>Treat your cow for an infected wound with Pencillium</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Situation #11</th>
<th>Situation #12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your heifer appears to have milk, but won't let it down - Administer Oxytocin.</td>
<td>Your heifer accidentally was bred by the wrong bull - Abort her by using Estrumate</td>
</tr>
</tbody>
</table>
### SELINIUM E
Administer 1 cc per 100 lb
Intramuscular injection

### MICOTIL
Administer 1 ml per 30 kg or 1.5 ml per 100 lb. Subcutaneous injection

### DEXAMETHASONE 2
Administer 1cc per 100 lbs.
Intramuscular injection

### OXY LA
Administer 1 ml per 10 kg
Intramuscular injection

### TRIVETRIN
Administer 3 ml per 45 kg.
Intramuscular Injection

### NUFLOR
Administer 6 ml per 45 kgs.
Subcutaneous injection

### FUSOGARD
Administer 2 ml.
Subcutaneous injection

### ESTRUMATE
Administer 1.5 ml.
Intramuscular injection

### RESVA 4/SOMUBAC
Administer 2 ml. intramuscular injection

### EIGHT WAY TAVAX
Administer 4 ml subcutaneous injection

### OXYTOCIN
Administer 1 ml intramuscularly

### PENICILLIUM
Administer 30 ml. intramuscularly
Only 15 ml per site
SAVE THE CALF

PREPARATION:

- Cut out the pictures of the calving problem, the descriptions of the problems, and the explanations of how to correct the problem.
- Give each member at least one item – a picture, a description or an explanation. Try to ensure that a member doesn’t get the description or explanation that matches a picture they have.
- Encourage members to have fun with the exercise by pretending to be beef producers, helpful neighbours, and veterinarians. They can adlib by making up a conversation – perhaps the neighbour says he’ll roll up his sleeve and check it out. They can pretend to phone the vet, etc.

THE ACTIVITY:

- The members with pictures are beef producers, the members with descriptions of the calving problem are neighbours who have come over to help, and the people with explanations for correcting the problem are veterinarians.
- Start with a member who has a picture. Have the member show their picture to the rest of the group and say “I’m having a problem with my cow that is calving. Can anyone help?”
- The member whose description fits the picture says. “Looks to me like…………………………………. I’m not sure what we should do. I guess we should call the vet”.
- The member who has the explanation for correcting the problem plays the part of a vet and tells the farmer and the neighbour what they might try to correct the positioning of the calf.
THE NEIGHBOUR SAYS........

LOOKS TO ME LIKE THIS CALF IS HIP LOCKED
-----------------------------------------

LOOKS TO ME LIKE YOU’VE GOT A SET OF TWINS
--------------------------------------------

LOOKS TO ME LIKE BACK FEET - MUST BE A BREECH CALF
-------------------------------------------------------------------

LOOKS TO ME LIKE IT’S COMING BACKWARDS - I FOUND A TAIL BUT THERE’S NO FEET - THEY MUST BE TUCKED UNDER IT
-------------------------------------------------------------------

LOOKS TO ME LIKE THE HEAD IS TUCKED DOWN BETWEEN THE CALF’S LEGS
-------------------------------------------------------------------

LOOKS TO ME LIKE ONE LEG IS CROSSED OVER THE NECK
-------------------------------------------------------------------

LOOKS TO ME LIKE THE HEAD IS MISSING - FRONT FEET ARE THERE BUT THE HEAD MUST BE BACK
-------------------------------------------------------------------

LOOKS TO ME LIKE THE FRONT LEGS ARE BACK - THERE’S A HEAD BUT NO LEGS
-------------------------------------------------------------------

59
THE VET SAYS........

If the cow is having trouble delivering the calves, check to see if they are tangled. Do the two front feet you are pulling belong to the same calf?

Rub lubrication around the hips. Try to rotate the calf onto its side. Have someone press up and down gently on the calf’s middle.

Push calf back into the uterus. Grasp hooves if you can reach them or grasp legs at the cannon bones. Pull upward and toward the birth canal. Remember to protect the uterus from tears by cupping hooves in your hand. Try to keep tail from going over the back.

Work quickly to get calf out. If the umbilical cord breaks, the calf might suffocate. Try to ensure calf’s tail does not turn back over the top as it might tear the roof of the vagina. You can tell hind feet from front feet by checking for joints; hind legs have no joint between the foot and the hock.

Attach the calving chains to the front legs so you will be able to pull the legs back into the birth canal after correcting the head. Push calf back into the uterus. Raise one leg to make room to move the head. Grasp the head at the muzzle and pull upward toward the birth canal. Return the leg to correct position.

Push calf back into the uterus and grasp calf’s nose. Pull head downwards to the side and then toward the birth canal. Be careful not to break the neck of the calf.

Push the calf back into the uterus. Grasp the leg which is over the neck at the cannon bone near the pastern. Raise the leg over the head and pull it into the birth canal.

Push calf back into uterus. Pull the calf’s hoof or cannon bone upward and toward the birth canal. Move the front legs to the birth canal beside the head.
HOW MUCH TO FEED YOUR CALF
ANALYZING FEED TESTS
RATIONS

Adequate air, water and feed, according to the biological requirements of each species.
All Projects

KNOWING HOW MUCH TO FEED YOUR CALF

Whether you have chosen a market animal, a heifer, or a continuation heifer, it is important that you make the best use of your feeds. You need to know what is in each feed so that you can decide how much feed to use. Market animals that are underfed may not reach your goal or finished weight. Underfeeding a breeding animal could affect their ability to produce and feed a calf.

Overfeeding market animals might result in a carcass that has too much fat. Overfeeding breeding animals could result in health problems and problems with calving and rebreeding.

The best way to be sure that you are feeding the right amount of feed is to have your feed tested. Samples of feed can be sent to labs to be tested for ingredients such as proteins and minerals.

The Feed Analysis

By studying your feed analysis, you can learn a lot about the feed you are going to give your animal. A diet is the mixture or combination of feeds that provide the nutrient requirements. It needs to include nutrients in just the right amounts for what your animal needs. A ration is the amount of feed required by the animal daily.
The following two pages are examples of feed test results.

**Feed Test**

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<th>Certificate of Analysis</th>
<th>Lot ID: 326968</th>
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<tr>
<td>Sample ID: 1256792</td>
<td>Sample ID: 1</td>
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<tr>
<td>Producer: Charlotte Shorthorn</td>
<td>Date Received: Aug. 18/06</td>
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<tr>
<td>Sample Code: 203</td>
<td>Date Reported: Aug. 21/06</td>
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<tr>
<td>Sample Description: Alfalfa/Grass</td>
<td>Sample Retained: Sept. 17/06</td>
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<td>Arrival Condition: Good</td>
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### NIR Test

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<th>As Fed</th>
<th>Dry Matter</th>
<th>Method Reference</th>
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<tr>
<td>Moisture</td>
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<td>11.1%</td>
<td>AOAC-989.03</td>
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<td>Dry Matter</td>
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<td>88.9%</td>
<td>AOAC-989.03</td>
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<tr>
<td>Crude Protein</td>
<td>13.8%</td>
<td>15.5%</td>
<td>AOAC-989.03</td>
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<tr>
<td>Acid Detergent Fibre</td>
<td>31.0%</td>
<td>34.8%</td>
<td>AOAC-989.03</td>
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<td>Neutral Deter. Fibre</td>
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<td>50.5%</td>
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<td>Available Protein</td>
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<td>15.5%</td>
<td>AOAC-989.03</td>
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<td>Digestible Protein</td>
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<td>7.25%</td>
<td></td>
<td>AOAC-989.03</td>
</tr>
<tr>
<td>Protein/CPRF</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Non-Structural</td>
<td>20.3%</td>
<td>22.8%</td>
<td>AOAC-989.03</td>
</tr>
<tr>
<td>Carbohydrates</td>
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<td></td>
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</tr>
<tr>
<td>TDN</td>
<td>53.30%</td>
<td>60.00%</td>
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</tr>
<tr>
<td>DE</td>
<td>2.35 Mcal/kg</td>
<td>2.64 Mcal/kg</td>
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</tr>
<tr>
<td>NE/GAIN</td>
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<td>0.66 Mcal/kg</td>
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<tr>
<td>NE/LACT</td>
<td>1.17 Mcal/kg</td>
<td>1.31 Mcal/kg</td>
<td>AOAC-989.03</td>
</tr>
<tr>
<td>NE/MAINT</td>
<td>1.21 Mcal/kg</td>
<td>1.36 Mcal/kg</td>
<td>AOAC-989.03</td>
</tr>
<tr>
<td>Calcium</td>
<td>1.15%</td>
<td>1.29%</td>
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</tr>
<tr>
<td>Phosphorus</td>
<td>0.22%</td>
<td>0.24%</td>
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</tr>
<tr>
<td>Potassium</td>
<td>1.62%</td>
<td>1.83%</td>
<td>AOAC-989.03</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.21%</td>
<td>0.24%</td>
<td>AOAC-989.03</td>
</tr>
<tr>
<td>Relative Feed Value</td>
<td>114</td>
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<td>AOAC-989.03</td>
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**Comments:**

Relative Feed Value
### Nutrition

**Feed Test Certificate of Analysis**

<table>
<thead>
<tr>
<th>Lot ID: 326978</th>
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<tbody>
<tr>
<td>Sample ID: 3322792</td>
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<tr>
<td>Date Received: Aug. 18/06</td>
</tr>
<tr>
<td>Date Reported: Aug. 21/06</td>
</tr>
<tr>
<td>Sample Retained: Sept. 17/06</td>
</tr>
<tr>
<td>Arrival Condition: Good</td>
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</table>

**Producer:** Charlotte Shorthorn  
**Sample ID:** 1  
**Sample Code:** 103  
**Sample Description:** Oats

---

**Wet Chemistry**

<table>
<thead>
<tr>
<th>Component</th>
<th>As Fed</th>
<th>Dry Basis</th>
</tr>
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<tbody>
<tr>
<td>Moisture</td>
<td>10.6%</td>
<td></td>
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<tr>
<td>Crude Protein (TN*6.5)</td>
<td>12.2%</td>
<td>13.7%</td>
</tr>
<tr>
<td>Acid Detergent Fibre</td>
<td>13.1%</td>
<td>14.7%</td>
</tr>
<tr>
<td>TDN (ADF)</td>
<td>67.71%</td>
<td>75.76%</td>
</tr>
<tr>
<td>DE (ADF)</td>
<td>2.98Mcal/kg</td>
<td>3.33Mcal/kg</td>
</tr>
<tr>
<td>NEG</td>
<td>0.94Mcal/kg</td>
<td>1.06Mcal/kg</td>
</tr>
<tr>
<td>NEL</td>
<td>1.57Mcal/kg</td>
<td>1.75Mcal/kg</td>
</tr>
<tr>
<td>NEM</td>
<td>1.57Mcal/kg</td>
<td>1.76Mcal/kg</td>
</tr>
<tr>
<td>Calcium</td>
<td>0.06%</td>
<td>0.07%</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0.39%</td>
<td>0.43%</td>
</tr>
<tr>
<td>Potassium</td>
<td>0.41%</td>
<td>0.46%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.14%</td>
<td>0.16%</td>
</tr>
<tr>
<td>Sodium</td>
<td>&lt;0.01%</td>
<td>&lt;0.01%</td>
</tr>
<tr>
<td>Salt</td>
<td>&lt;0.03%</td>
<td>&lt;0.03%</td>
</tr>
</tbody>
</table>

*Results marked with an asterisk have been analyzed by NIR*

Below - A feed analysis lab
Using the two examples of feed test results on the previous pages, work through the following exercise.

Methods of testing feed:

**NIR** is when feed is analyzed for nutrient content using an infrared light to identify nutrient compounds which are then compared to information from chemically analyzed forages. It is a quick and low-cost method of analyzing feed.

**Wet Chemistry** uses chemicals on the feed to figure out the amount of nutrient in the feed. It is more accurate than the NIR testing. What kind of testing was done on the Oat sample? What kind of testing was done on the Forage sample?

**Moisture** is the measure of the amount of water in the feed or “as fed”. Moisture in the forage sample? Moisture in the oat sample?

**Dry Matter** is the percentage of feed that is not water or moisture. Amount of dry matter in the forage?

**Crude Protein** is the total amount of protein in the feed. Protein in the forage sample? Protein in the oat sample?

**Available Protein** is the total amount of protein that is in the feed that can be completely digested by the animal. Available Protein in the forage?

**Heat Damaged Protein** occurs when the feed has been baled, harvested or processed with a high moisture content. For example: when hay is baled when it has over 20% moisture in it, the bales will often heat and/or go mouldy.
Nutrition

It affects how the nitrogen binds to the fibre, making it less available for the animal to use. How much heat damage occurred in the forage sample? _______

**Acid Detergent Fibre** measures the part of the feed that is least digestible. It is found in the cellulose and lignin of the plant. ADF in the forage sample? ______
ADF in the oat sample? ______

**Neutral Detergent Fibre** is a measure of the fibre content in the feed. The higher the fibre content the less forage the animal can consume. NDF in the forage sample? ______

**Total Digestible Nutrients** is the total amount of the feed that is digestible. It describes the energy content of the feed. TDN of the forage? _______ TDN of the oats? ______

**Digestible Energy (DE)** is the amount of energy in the feed minus the amount of energy lost in the manure. What is the DE of the forage? _______ What is the DE of the oats? ______

**Net Energy Gain (NEG)** is the amount of energy available for gain after all the body functions have received the energy they need. NEG of the forage? _______
NEG of the oats? ______

**Net Energy Lactation (NEL)** is the amount of energy available for lactation or milk production. What is the NEL for the forage? _______ What is the NEL for the oats? ______

**Net Energy Maintenance (NEM)** is the amount of energy available to maintain the body weight. What is the NEM for the forage? _______ What is the NEM for the oats? ______
Nutrition

Non Structural Carbohydrates is the measure of starches (in grains) and sugars (in forages). It is most important in dairy rations.

How much Calcium is found in the forage? _______ and in the oats? _______

How much Phosphorus is found in the forage? _______ and in the oats? _______

How much Potassium is found in the forage? _______ and in the oats? _______

How much Magnesium is in the forage? _______ and in the oats? _______

How much Sodium is in the oats? _______

How much Salt is in the oats? _______

The Relative Feed Value combines ADF and NDF into one number as a quick, and easy way to find the quality of the hay. RFV is a simple way to compare different types of forages. What is the RFV of the forage? _______
Market Animal Project  RATIONS FOR YEARLING ANIMALS

The following rations may not be the most cost saving, but they are simple and effective. They work well if you are feeding your 4-H calves individually or in small groups. They are a good starting point for learning about rations for beef cattle.

These rations work best if the calves are fed twice a day - morning and night. The roughage should be fed after the grain has been eaten. A continuous supply of fresh water is important for good results.

The following are descriptions of the different feeds.

Barley: either rolled or coarsely ground
Corn: either rolled corn or whole corn. (Avoid finely ground grains).
Oats: whole oats or rolled
Beet Pulp: dried beet pulp
Molasses: either dry or liquid
Supplement: An all natural supplement containing at least 40 percent protein with no urea and containing mid-level ionophore.
Hay: Prairie or grass hay.

Assuming that calves that have been weaned and are adjusted, four rations are proposed and can be fed at the prescribed method previously described. This would begin in mid-November to mid-January, depending on 4-H show dates.

Ration 1 can be used up to starting date at 1.5 percent of body weight daily with free choice of prairie or grass hay.
Always change grain amounts slowly and blend rations when moving to the next ration level.
Ration 1: Fed 20-30 Days
Barley 396 kg
Oats 396 kg
Supplement 40% 86.2 kg
Molasses 22.7 kg
Grass Hay 2.7 kg/day
Salt & Mineral free choice

Total Consumption 3.6-5.9 kg/day

Ration 2: Fed 20-30 days
Barley 499 kg
Oats 301 kg
Supplement 40% 79.4 kg
Molasses 22.7 kg
Grass HY 2.4 kg/day
Salt & mineral free choice

Total Consumption 4.5-6.8 kg/day

Ration 3: Fed 20-30 Days
Barley 608 kg
Oats 204 kg
Supplement 40% 72.6 kg
Molasses 22.7 kg
Grass Hay 5.0 kg/day
Salt and Mineral Free Choice

Total Consumption 3.6-5.9 kg/day

Ration 4: Fed until Animals are Marketed (120+ days)
Barley 713 kg
Oats 104 kg
Beet Pulp - may substitute 23 g of beet pulp for 23 kg of oats - useful for hair growth for show
Supplement 40% 68 kg
Molasses 22.7 kg
Grass Hay 1.4-1.8 kg/day
Free choice salt & mineral

Total Consumption 10-14 kg/day

A starting ration is used to accustom animals to the feed. Any changes to a feeding program must be carried out gradually to prevent digestive problems, such as founder or bloat.

A growing ration allows an animal to grow bone and muscle before putting on weight. It is necessary to have a growing ration so the calf does not fatten at a light weight.

Finishing rations generally consist of 80 percent grain and 20 percent roughage. These rations carry the animal to an acceptable slaughter weight and provide cattle with the energy necessary to deposit fat.
THE FEEDING FRENZY

Work in teams or individually to see how many of these feed related words you can identify in 5 minutes. Answers page 134

R_ _ _ H_ _ _
_ _ _ _ A _
_ _ _ _ I _
_ _ _ _ _ _ _ _ G R _ _ _
_ _ _ _ T _ _ _
_ _ _ _ _ _ _ _ I _ _ A _
_ _ _ _ _ _ _ _ _ _ W
_ _ _ _ F _ _
_ _ _ _ _ _ _ _ _ _ _ _ E A T _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ R I _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ A L _ I _ M
_ _ _ _ T _ _ _
_ _ _ _ _ _ T
_ _ _ _ D _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ N
Feeding Facilities

Alternative Watering Systems

Safe housing and sufficient space, to prevent injuries and ensure normal health and growth.
All Projects

FEEDING FACILITIES

Draw, use pictures of, or cut pictures from magazines to show what types of feeding facilities you use for your 4-H calf or on your farm.
Facilities

**All Projects**

Answer the following questions about your feeding facilities. Circle YES (Y) NO (N)

Are the feeders strong enough to keep animals from breaking them?   Y   N
Are there any nails or sharp edges that could injure the animals or workers?   Y   N
Is there enough space for all cattle using the feeders to eat at the same time?   Y   N
Can the feeders be cleaned out easily?   Y   N
Can the feeder be moved easily to a new or clean area?   Y   N

What are some good points of your feeding facilities?

________________________________________________________________________________________

________________________________________________________________________________________

What are some things about your feeding facilities that don't work well or could use improving?

________________________________________________________________________________________

________________________________________________________________________________________
All Projects  Alternative Watering Systems for Grazing Cattle

Beef animals that are kept in confined areas are usually watered with either a well system connected to watering bowls, or with water that is hauled in. Beef animals that are grazing pastureland have more alternatives for watering. Grazing animals often use natural surface water sources such as lakes, rivers, creeks, and sloughs for watering. Man made dugouts are also used. Of course well systems with watering bowls can also be used in pasture settings if electricity is available or the pasture has access to the yard site. Some producers haul water to pastures, the same way they do to confined areas.

When animals are allowed to water from ground water sources, manure enters the water system, water banks and beds are disturbed, and sediment is increased. Animals often end up drinking water contaminated by their own manure. Keeping animals away from these surface waters is healthier for the animals and better for the quality of the water. There are several alternative methods for using surface water without disturbing or contaminating the source.

Electricity is often not an option in many pastures due to the expense of installing power lines. Alternative watering systems use sources other than electricity. In choosing a system, consideration will have to be given to how much water is needed, what the site conditions are, and water source and the cost.
Facilities

**Pump Systems**

Pump systems use on-site power. Sources of this power include flowing water, sun, wind and using the livestock as a power source.

Nose (Pasture) Pump:

![Nose Pump Image](image)

The Nose Pump watering bowl has a **diaphragm** pump that is activated when the animal's nose pushes down on a lever. It is easy to install and costs are very reasonable. One pump can water up to 30 animals.

Sling Pump:

![Sling Pump Image](image)

A sling pump uses moving water as its power source. A propeller slowly rotates the entire pump in the water. While the pump is rotating, water and air enter the back of the pump and are forced through a coil of plastic tubes, then through a hose into a water tank.
Facilities

**Ram Pump:**

The ram pump uses falling water as its energy source for moving water to a watering tank. A large amount of water falls from a small height of at least 0.6 m or 2 ft. It is used to pump a small quantity of water to a much higher height.

**Wind Generator:**

Windmills are not new technology. They have been around for hundreds of years. However there have been major changes and improvements in their construction. Windmills can be used in three different ways: mechanical, electric or air.
Solar Powered Pump

Solar powered pumps are becoming more popular. Solar panels trap energy from the sun and convert it to a DC current to charge batteries or power a pump directly. The pump moves the water to a watering tank. Panels need to be grounded in case of lightning. You also have to fence the panels off so livestock don’t damage them.

Gravity Systems

Gravity systems move water from a higher elevation to a lower elevation through gravity. There has to be an overflow pipe at the water tank that moves the excess water to a discharge area.

Fuel Pumps or Generators

Fuel run pumps or generators are another alternative for pumping water. This method can move a lot of water very quickly. They do require some maintenance, have to be started manually, and the fuel to operate them adds extra cost.

Diagrams courtesy of Alberta Ministry of Agriculture, Food and Rural Affairs.
Facilities

All Projects

An Interview Assignment

Locate a livestock producer that uses one of the alternative methods of watering his/her grazing livestock. Ask permission to do an interview with the producer and include a copy of your report in this section of your project book. Some questions you might ask are:

How long have you been using this system of watering your animals?

Was there another system being used before the current system?

What was involved in getting the system up and running?

What was the approximate cost of the project?

Does the system work as well as you expect it to?

What do you see as the major benefits of the system?

Are there any drawbacks or concerns with the system?

Add other questions before or during the interview if they seem relevant. Be sure to thank the producer for his time and inform him that your report will be included in your project book. You might want to include a picture of the producer and the watering system.
SOUNDS LIKE…….

PREPARATION:

- Divide the following phrases and their rhyming answers between two or more teams, or play as individual players.
- Have members do a review of the section on facilities.
- The answers rhyme with a word in the phrase.

PLAYING THE GAME:

- The first person (if playing individually) says the phrase - the first person to respond correctly gets a point.
- You can subtract a point, if you want, for wrong answers.
- The person with the correct answer takes the next turn.
- If you are playing in teams, alternate reading the phrase between all the members of the team.
- Team 1 gives out a phrase. If Team 2 answers correctly, then Team 1 has to give another phrase. If Team 2 answers incorrectly, then it becomes their turn to give Team 1 a phrase.
- Game continues until all phrases are finished.
- You might want to put a time limit on the answers.

PHRASES

It’s a cow’s house and is sounds like SWELTER (SHELTER)

It’s good for holding cattle very still and it sounds like FREEZE (SQUEEZE)

A good fence is made of this and is sounds like JANEL (PANEL)

Something cows eat from and it sounds like READER (FEEDER)

Something cattle can’t live without and it sounds like SQUATTER (WATER)
To do with water and sounds like JUMP  (PUMP)

A kind of pump that sounds like HOSE  (NOSE)

A kind of pump that sounds like KING  (SLING)

A type of pump that sounds like PAM  (RAM)

This item brings water out of the ground with the use of something that sounds like LIND  (WIND)

This pump works with something that sounds like POLAR  (SOLAR)

This watering system that sound like BRAVITY  (GRAVITY)

We hope wells will keep doing this, and it sounds like JUMPING  (PUMPING)

Water does this when its downhill and it sounds like GLOW  (FLOW)

It is moving water and sounds like CRANE  (DRAIN)

Used for holding water and sounds like RANK  (TANK)

Water moves through it and it sounds like SNIPE  (PIPE)

For moving water and it sounds like ROSE  (HOSE)

Some people have to do this to get water, and it sounds like PAUL  (HAUL)

Some feeders look like this and it sounds like FOUND  (ROUND)

Animals like to lay on this and it sounds like DRAW  (STRAW)
BEFL LINKS

MARKETS

CONSUMERS

ANIMAL

WELFARE

AND ETHICS

HOW ARE

THEY

RELATED?
MARKETING ALTERNATIVES

There are several different ways to market your beef, depending upon your location, the type of animal you are marketing, and what consumers are looking for.

Farm gate sale - The producer accepts bids for cattle on the farm. There are no freight costs, commission or shrinkage deduction.

Feedlot direct - Bids are taken from feedlot owners. The same rules apply as for farm gate sale. The cost for freight can be negotiated.

Commission sale - This type of sale is what takes place in an auction market. Cattle are brought in before the sale and sold to buyers that are present. Producers are paid on sale weight, and pay a yardage fee.

Pre-sort sales - Cattle are sorted into same sex, weight, type and condition groups, and then sold in load lots. There may be cattle in a lot from several different producers. The producer is paid on incoming weight, less an estimated shrink. They are paid according to the next day's price. There is a yardage and a sorting fee.

Direct sale with commission - Cattle are gathered and brought to one central location. They are weighed as they get off the truck and sorted into load lots of the same sex, size or type. They are docked an estimated shrink. The producer is paid according to the number of pounds owned in each pen.

Electronic Auction - Cattle are sold by computer, without the cattle ever leaving the farm.
**Forward Contract** - Producer is contracted to have animals at a specific weight by a predetermined date.

**Custom Feedlot** - The producer retains ownership of the animal, but another producer feeds the animal for a commission.

**Export** - Cattle are exported to another country such as the United States, either for slaughter, feeding or breeding purposes.
The beef producer appears to be far away from the consumer on the chain link below. However, the consumer is the most important part of marketing for the producer. If the consumer is happy with the product, they will buy more. If they have concerns with the products they buy, they may stop buying the product. They may even influence other people to do the same. As the saying goes; "Bad news travels fast."

Some issues or concerns of consumers that have affected beef production include “Hamburger Disease”, “Mad Cow Disease”, and the process of inspecting meat to ensure it is safe to eat. Hamburger Disease is caused by the bacteria “E Coli”. When E Coli get into foods such as fruit, vegetables, and hamburger, it can make people sick, and can even result in death. The main cause of E Coli is improper handling, cooking, and storing methods. Beef producers, and others who are part of the chain, are working hard to be sure proper methods are used by meat processing plants, supermarkets, and the consumer.

Mad Cow Disease is caused by a virus called Bovine Spongiform Encephalopathy or BSE. The virus was first found in Britain, but there have now been several known cases in North America. Consumers became worried that meat containing the virus might be sold in stores, and that the virus would be passed on to humans.
The Canadian Beef Industry has responded by ensuring that testing procedures are thorough. As well, there are certain parts of the animal that can not enter the food system. These are known as specified risk material. (SRM's)

Many consumers worry about the safety and health value of the meat they buy. Provincial and federal governments have food inspection agencies that do testing at various links of the marketing chain. Meat is tested to ensure its quality and preventative measures are strictly laid out.

The Inspection Process:

- Animals are inspected within 24 hour before slaughter.
- If they pass they go to the kill floor.
- After slaughter the entire carcass is inspected, with particular attention to the internal organs.
- If the inspector has concerns, a veterinarian will be consulted, who will pass, condemn or hold the carcass for further testing.

Did you know?..... That by the time you eat a Big Mac, it has gone through more than 60 quality checks.

Did you know?..... That the overall economic benefit to the economy from the cattle industry in Canada is $15 billion annually.
All Projects  CODE OF CONDUCT
The following describes general responsibilities of ______________________ and all
(Name) persons in his or her authority in the proper care and handling of their animal(s).

✓ To provide food, water and care necessary to protect the health and welfare of my animals.
✓ To provide a safe and healthy environment for my animals that is clean, well ventilated, and provides ample space.
✓ To provide a well-planned disease prevention program to protect the health of my herd or flock. This includes a strong veterinarian/client relationship.
✓ To use humane and sanitary methods when it becomes necessary to dispose of my animals.
✓ To make timely inspections of all animals to evaluate the health and insure that all basic requirements are being met.
✓ To insure proper handling techniques are used to eliminate any undue stress or injury when manual manipulation is necessary.
✓ To provide transportation for my animals that avoids undue stress or injury caused by overcrowding, excessive time in transit, or improper handling when loading or unloading.
✓ The wilful mistreatment of my animals or the mistreatment of any animal will not be tolerated. In cases of mistreatment, I will notify the proper authorities.
✓ To make management decisions based on scientific fact and to consider the welfare of my animals.
✓ To learn about species-specific quality assurance programs.

I have read, understand and commit to the above statements.

_________________________  4-H Member

_________________________  4-H Leader

_________________________  Parent/Guardian

Adapted from:
Ohio Farm Animal Care Commission, Box 479, Two Nationwide Plaza Columbus, OH 43216-0479
LINE IN THE SAND

Draw a “Line in the Sand” by putting tape on the floor. One side represents ethical behaviour. The other represents unethical behaviour.

Prior to the meeting, develop scenarios to have members consider (or have them develop scenarios during the program) practices or activities involved in the care or showing of 4-H project animals. Write each scenario on an index card.

Sample scenarios could include:

1. Changing the color pattern of an animal
2. Polishing or cleaning the hooves
3. Use of a tranquilizer on a show animal
4. An injection of an anti-inflammatory agent to help a crippled animal walk at a stock show
5. Forcing water into a stomach of an animal to meet a minimum weight requirement or to misrepresent the animal
6. The use of twine in the grooming of a show animal
7. Scheduling a daily feeding around a weigh-in at a stock show
8. Injection of air or other substances under the skin of an animal
9. Severe restrictions of feed and water for several days to meet a maximum weight requirement
10. Normal exercise
11. Excessive exercise
12. Injection of an antibiotic
13. False ownership
14. Falsified birth dates

Assign a scenario to each participant, and have him or her choose which side of the line to stand on. To help them make their decision use Dr. Jeff Goodwin’s “Line in the Sand” questions for ethical decision making. Have the group agree or disagree on the choice. Discuss the reasons for their choice.
Questions for Ethical Decision Making

1. Does it violate Food and Drug Administration law?
2. Is it fraud?
3. Does it compromise the welfare of the animal?
4. Does it relate to real world agriculture?

If questions 1, 2 or 3 are answered yes, the practice is unacceptable.

Use the fourth question of real world agriculture when the first three questions do not provide an answer. If the answer to question 4 is “no”, then the practice is unacceptable (or suspect at best).

Answer Key:

Scenario numbers 1, 3, 4, 5, 6, 8, 9, 11, 12, 13 & 14 are unethical or unacceptable when the questions are applied to them.

Scenario numbers 2, 7, & 10 are considered ethical.

Other Resources:

“The Line in the Sand” video and activity guide by Dr. Jeff Goodwin is available on loan from 4-H Publications and some Rural Leadership Specialists.
HANDLING

Sensible Handling through all stages of the animal's life, to avoid unnecessary suffering.
Handling

**UNDERSTANDING CATTLE BEHAVIOR**

Cattle see differently than humans because of the placement of their eyes, which are on the sides of their head. They can see a larger area than humans. However, they can only see clearly and with good depth perception in a small area directly in front of them. They cannot see directly behind them. If you are trying to make an animal move from directly behind, they may become frightened and kick at you.

Cattle tend to move in a circular pattern so they can keep an eye on whatever they are moving away from. There is a line or boundary called the flight zone boundary. If you are inside this boundary the animal will move away from you. Just around the shoulder area of cattle, there is a point of balance. If you are in front of this boundary, the animal will move back. If you are behind this point, the animal will move forward. The flight zone is slightly different for each animal depending upon its conformation. If you want an animal to move, enter its flight zone where it can see you.
Handling

**All Projects**  WORKING WITH AND HANDLING CATTLE

Most accidents involving cattle happen when people are handling, loading or working closely with the animals. When animals feel threatened or scared, they might react by kicking, charging, or running.

Remember to follow these safety tips when you are handling your 4-H animal or other cattle.

**Stay Alert.**

Talk quietly so the animal knows where you are. Move slowly around the animal.

Don’t make sudden movements or loud noises.

Wear protective boots.

Don’t use electric prods or whips.

Don’t wrap the lead shank around your hand.

Keep your working area clear of things you might trip on.

Be sure handling facilities are working correctly.

Be extra cautious around mother cows with calves, and bulls.

---

**All Projects**

Do you know anyone who has been injured while handling cattle? __________

If so, describe what happened?____________________________________________________________

____________________________________________________________

Could the accident have been prevented? __________________________________________
Handling

All Projects

UNDERSTANDING CATTLE BEHAVIOR

Cattle are social animals and they like to live and move in groups. It is usually easier to move and handle cattle when there is a group of them. Cattle like to follow the leader. Often once you get one animal to move the others will follow. Cattle move better through a chute system that is curved rather than straight. They will often balk if they can see a dead-end ahead or a sharp turn. Let the cattle move at their own speed. Pushing them too fast can make them harder to handle.

The animals below are being allowed to move as a group, following a lead cow. Notice how the chute curves so that the animals do not see a dead end or sharp turn.

Photo courtesy of Hi-Qual Manufacturing, Rapid City S.D
**Handling**

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**All Projects**

**TRAINING YOUR CALF FOR SHOW**

**Using the Halter**

- Place the halter on the calf’s head with the lead on the left side.
- Put the cross strap that goes over the nose 2 to 3 inches below the eye.
- Do not have the halter so big that the nose-cross piece is down by the mouth.

**Correct position**

Start Early

Success in beef cattle showmanship must start at home with halter breaking the calf.

- Start by tying the calf for an hour, working up to 3 to 5 hours a day. During this time, brush and talk to your calf. This will assist in calming the calf and allow it to become accustomed to you.
- Be sure to tie the calf with a quick release knot so you can quickly and safely untie the calf if necessary.
- Training a calf to walk, stop, and set up takes work and patience. At first, lead the calf to and from feed and water.
- Later, lead the calf around for short practice sessions to teach it to set up in response to the halter and show stick.

Photo taken by Bonnie Snezyk
Handling

Have another person handle the calf while you are at the halter; this trains the calf to remain calm under a judge’s close inspection.

When leading, walk on the calf’s left side with the lead in your right hand. Hold your hand 6 to 12 inches from the animal’s head on the lead strap. (This is near the junction of the chain and leather strap.) Firmly grip the lead so your thumb is up and toward you with your little finger nearest the chain. Your wrist is stronger this way and provides better control over the animal.

Measure the lead strap to be just long enough for control (about shoulder width). It must not touch the ground; if the lead can reach the ground, you or the calf may step on it.

To prevent injury, do not wrap the halter strap around your hand or fingers.

Photo taken by Bonnie Sneyzyk
Using the Show Stick

Four basic uses for the show stick include:

- Assisting in placing the feet.
- Calming and controlling the animal.
- Keeping the top level.
- For scotch-driving the animal.

Photo taken by Bonnie Snezyk

When setting up your calf

- Switch the lead strap from the right hand to your left hand quickly and smoothly.
- Switch the show stick from the left hand to your right hand.
- Slowly scratch the calf’s belly a couple of times to help calm the calf.
- Set the calf’s feet in the appropriate position.

Remember, you have two tools in your hands to set the feet -- the lead and the show stick.
Set the rear feet first. To move a rear foot back, push backward on the lead and use the show stick to press (do not jab) the soft tissue between the toes in the cleft of the hoof.

To move a rear foot forward, pull on the lead and use the show stick to apply pressure under the dew claw.

When the rear feet are too close together, apply pressure to the inside of the leg just above the hoof or at the hock, and the calf should stand wider.

You can move its front feet by using your boot or show stick to apply pressure on the foot while pushing or pulling with the halter lead in the desired direction you want the foot to move. Younger, less experienced members are safer using the show stick.

Placement of the feet depends on what view is desired for the judge and what makes the calf look its best.

When cattle are lined up side by side in a straight line, the feet should be set on all four corners (bearing a full share of the calf’s weight). On this view, the judge is looking at the rear and front of the calf.
Handling

- When the cattle are lined on the profile (head to tail), set the feet as if a professional photographer is taking a picture. Stagger the rear feet so your near side foot is slightly in front of the foot closest to the judge.
- As the judge moves to the rear of the calf on profile, an experienced exhibitor will again square the feet. As the judge moves back to the side view, profile the rear feet again.

A heel-to-toe look works best for a profile set-up.

- The heel of one foot is parallel with the toe of the other foot.
- The front feet are set squared or staggered less than the rear feet.
- The toe of the front foot away from the judge should be set back half the width of the hoof on the judge’s side.
- By setting the feet in this manner, you give the judge a perception of depth and thickness.
- It also makes it easier to correct a top line and rump structure.

Set up when viewed on the profile.

![Photo taken by Bonnie Snezyk](image-url)

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Handling

When using the show stick to correct a top line

- Apply pressure at the navel or flank with the hook of the show stick if the top is weak and needs to be raised.
- If the rump is steep and the loin is high, apply pressure to this area to bring it down.
- Continue to scratch the calf’s belly to keep it calm.

While showing, always keep the point of the show stick down for safety.

- Keep the stick in your left hand at the handle or about one-third of the way down when walking. This allows its use as an additional control tool if needed.
- If the calf is moving too fast, hold the portion of the stick between your left hand and tip or hook end in front of the calf’s nose.
- To scotch-drive, push forward on the halter with your right hand, and touch the calf with the show stick on its side or rump. This makes the calf think someone is behind it, and it should start to walk.
- “Scotch-driving” is needed when the calf will not lead or walk and no one is around to help you get started.
Handling

SHOWING YOUR CALF

Showmanship is an area over which you have the most control when exhibiting your beef cattle. In showmanship, you are judged on your ability to control and present an animal to bring out its best characteristics. Advanced planning and hard work are important keys to becoming a good exhibitor.

Showing beef cattle generates enthusiasm and competition in the show ring and teaches valuable life skills, which include responsibility, making decisions, learning to win and lose graciously, and to instill character. A good showman has a sense for effectively presenting an animal in competition.

- Before the show, walk over the show ring to find any low spots on the surface. This will help you avoid these areas when setting up your calf. If possible, position the calf so the front feet are placed on higher ground than the rear feet.

  Dress neatly and wear sturdy boots (leather are best) for safety
  If the calf steps on your foot, its foot will slip off leather boots more easily than it will slip off a canvas shoe.

- Enter the show ring promptly when the class is called.
- If there are exhibitor numbers, wear the number on the left side so it does not interfere with use of the show stick or leading the calf.
- Know where to line up and how the classes will move through the show ring. If you are not in the first class, watch a class or two to learn specific techniques or show style the judge prefers.
Handling

Using the Comb or Cloth

- With haired cattle, carry a scotch comb in your right back pocket or in a comb sheath, with the teeth away from you for safety.
- Use the scotch comb to groom the hair that becomes messed up from the judge's handling your calf or from another animal bumping into your calf.
- You can use the corner of the comb to level the loin.
- If showing American breeds with short hair, carry a wipe cloth (bandana). You can use the cloth in the same manner as the scotch comb to groom the hair while in the show ring.

When pulling into line

- "Check" your calf a few feet before reaching your destination to slow the calf. To check the calf, lift up slightly on the halter so the calf knows you are about to stop.
- When walking into the ring, line up where the ring steward indicates. If you are third or fourth in the ring, line up even with the other calves, leaving 3 or 4 feet on both sides of your calf. This allows ample room for all exhibitors to set up.
Handling

- Smoothly, yet quickly, get the calf set up with its head high. Be alert, keep a close eye on the calf, keep the feet set square, stay straight in line, and know where the judge is located.
- If your calf is not set square and the judge is nearby, set up your calf. Most judges will wait for you to present the calf at his best.
- Always give the judge the view he is seeking. Try not to stand between the judge and the calf.

When it is time to walk the cattle –

- Move as the judge or ring steward instructs.
- Assist the member in front of you in moving a calf if he/she is having trouble. Tap the calf’s rump with your stick, or preferably put your show stick in your right hand and twist the tail of the calf in front of you with your left.
- Let your calf walk out freely. Move at an easy pace, not too slow or too fast.

When it is time to stop on the profile – Stop in a straight line head to tail.

- Remember to “check” the calf and then stop by lifting the head.
- Allow 4 to 6 feet between your calf and the one in front. This allows the judge space to move freely around the cattle and helps to prevent calves from mounting or disturbing others in the line.
Handling

- Position the feet as discussed earlier.
- Keep the top line level and the calf's head up.

Locate the judge and wait calmly.

- Do not "saw" your calf in half with rapid stick movement while waiting for the judge. Use slow deliberate strokes with the show stick.
- Do not make noises or excessively rattle the chain of the halter.
- The judge may handle the cattle and ask a few questions. As the judge moves around the calf, move a half step back to allow the judge a full view.
- Be prepared to answer questions such as weight, birth date, sire, dam, pregnancy status of your heifer, feeding program, parts of the animal, yield grade, quality grade, and the retail cuts of beef.
- If your calf has not moved and the judge has gone to the next animal, use the scotch comb or wipe cloth to fix any hair that is messed up.
- If your calf has moved out of line, pull out in a clockwise circle and bring the calf back into line.
- Set up and then fix the hair if necessary.
Handling

Be alert and aware of the judge. Look for a sign or motion to be pulled into line for placing.

- This may be another profile or side by side line.
- As the judge pulls cattle from the profile line, empty spaces occur. As spaces between cattle become empty, move forward in the line.
- Remember to allow proper distance between calves, and set the calf up at its best.
- By moving forward and filling the empty spaces, it becomes easier for the judge to make comparisons. Once pulled into a side by side line, you are nearing the end of the class.
- Stay alert and set the calf up as positions may continue to be switched.

When turning an animal -

- Always turn to the right (clockwise) unless the ring steward gives other instructions. (Most Manitoba judges accept turning either way, but be sure to ask before the class begins.)
- Pushing the calf's head away from you prevents the possibility of the calf stepping on your foot, causing harm to you or the calf.
- Note that you pass back through the same hole you left, then to the proper position.
- If positioned up to a rail, do not turn around in the line. Back the calf out by pushing back on the halter with your left hand and applying pressure with your right at the point of the shoulder.
- Pull into the line at the instructed position.
Handling

Switching from position 4 to position 2

Resetting in the same position using position 3

**Courtesy and Sportsmanship**

- Keep straight lines so the judge can compare all the animals.
- If you are blocking the view of another animal and have space, move so the judge can see all the animals; however, if you are the one hidden, it is your responsibility to be where the calf can be seen. Do not rely on other members since they may not have room to move.
- Avoid bumping, crowding, or hitting other animals.
- If your calf becomes nervous or unruly, remain calm, be patient, and never get discouraged or lose your temper.
Handling

When the judge starts his reasons, the class is over but your job is not. Continue to work hard and display good sportsmanship.

- Leave the ring in an orderly manner as instructed by the ring steward, and pick up your awards.
- Congratulate the class winners and those who stood ahead of you, or be a gracious winner and encourage those who stood below.

**Remember - Showing is a learning experience.**

- Leave the ring knowing you have given your best effort.
- Learn from your mistakes.
- Watch other exhibitors, and improve your skills for the next show.
- You are always a winner just by having participated in a worthwhile learning activity.

Photo taken by Bonnie Snezyk
Handling

All Projects  GROOMING AND FITTING FOR SHOW

Equipment for Grooming

Brushes:

There are a lot of different brushes you can buy, but you can do a good job of grooming with just a good wash and a finishing brush.

- A wash brush made of plastic with soft bristles or a plastic wash mitt. Brushing while washing helps to get the animal cleaner.
- A rice root brush is excellent for training the hair of the animal as it is good for brushing the hair forward. It helps to remove dead hair from the animal.

Combs:

There are a couple of combs that are excellent for grooming.

- Scotch Combs do a good job of grooming the hair in a forward and upward direction. The points of the comb are quite sharp so be careful not to scrape the animal.
- A Fluffer Comb is like a scotch comb, except that the teeth of the comb are further apart. This allows the hair to pop or fluff as the comb is run through the hair.
**Handling**

**Blow Dryer:**

- Although a blow dryer is not a necessity, it is useful for drying, cleaning dust off an animal, and training the hair. Some come with a heating element that speeds drying which is very useful in colder weather.

**Clippers:**

- If you are going to show your animal you will probably want to borrow or buy a set of clippers. There are different clippers on the market. It is best to choose a set with a good motor and interchangeable heads. Heads can be changed for clipping longer body hair or for close clipping of hair.

**Scissors:**

- Scissors can be a valuable tool for finishing touches. It's important to have a pair that is sharp because the hair can be quite coarse.
Handling

**GROOMING PRODUCTS**

There is a wide variety of grooming products, and some can be very expensive. Often, the less expensive or home-made products are just as effective.

**Soaps/Shampoos**

- A mild soap product such as dish soap or shampoo is inexpensive and works well for general washing.
- Some of the commercial livestock shampoos tend to be very drying.

**Adhesives**

Adhesives are used to keep the hair in place. There are three basic types of adhesives:

- Standard or Leg Adhesive: is rather heavy and slower to dry than other types. It will do for use anywhere on the animal but is especially good on the legs.
- Tail Adhesive: it much like the standard, except that it dries quickly. It is often used for setting tail heads and forming the bush of the tail. It can also be used on the legs when a fuller appearance is needed.
- Body Adhesives: is very light and dries slowly. It is useful in setting body hair and it allows for easy combing through the hair after it has set.

**Adhesive Remover**

- It’s important to have a good adhesive remover for cleaning adhesives out of the hair after the show. Leaving the adhesive in could damage the hair.
Handling

Show Foams/Shaving Cream
- Foams or shaving cream are sometimes applied to help set hard to manage hair.

Spray/Oils/Hair Coat Enhancement
- These products are used to add sheen and lustre to the hair. Some products can be used daily for hair training purposes, while others are only to be used the day of the show.

All Projects

COSTS FOR GROOMING/SHOWING SUPPLIES

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TOTAL COSTS _________
Handling

All Projects  GROOMING FOR THE SHOW

Before beginning to groom take a close look at your animal and try to get a mental picture of how you want it to look when you have finished grooming. Study your animal and decide what its strong and weak points are. You will want to make the weak points look as good as possible, and really bring out the strong points. A lot will depend on the hair type your animal has. Long-haired breeds are usually shown with the hair brushed up, while short-haired breeds are shown with the hair brushed down for a slick, more natural appearance. The time of year also makes a difference in how much hair the animal will have.

Let’s take a look at grooming, from the first washing to the show ring.

Washing

- Wet the animal from the top down. Apply soap into the stream of water to be sure all the soap doesn’t end up on the top of the animal.
- Take your scrub brush and scrub the entire body. The face, legs and underline can be difficult to work on, so spend some extra time getting them clean.
- Rinse the animal from front to back, top to bottom. Be sure all of the soap is rinsed out or your calf might end up with flakey dandruff.
Handling

Drying

- If you have a blow dryer, be sure that you dry all parts of the animal. The face, the legs, and the belly are the most difficult to dry.
- Try to keep the movement of the dryer consistent. If you blow from several different directions, the hair will be going in several different directions.
- Blow from front to back, and keep the direction of the nozzle at the same type of angle you use when brushing.
- Your may want to brush as you blow.

Brushing/Combing

- Brushing/Combing is a very important step in training the hair of the animal. Brushing early in the year will encourage hair growth, stimulate natural hair oils for extra sheen, and keep your animal much cleaner.
- Long-haired animals can be brushed forward and slightly up. Brush the entire body. Don't forget the outside and inside of the legs.
Handling

Clipping

- Clipping should only be done after the animal is clean and dry.
- Do your first clipping several days before the show. You can do touch up work a day or two before the show.
- Before you begin to clip, stand back and decide what the strengths and weaknesses of your calf are. Think about how you want to clip the animal to make it look its best.

Clipping the Head:

- Clip the face from the poll forward. You want a really short, close clip job on the face.
- Clip from the face down the dewlap to the brisket.

Photos taken by Bonnie Snezyk
Handling

Clipping the Body:

- You will get a more even clip job if you use both hands. Steady the clippers with one hand and hold the clippers with your other hand. Put the free hand under your clippers to help you guide your way through the hair.
- When clipping try to make the body look square, especially over the top line and in the hind quarters.
- If you leave the hip hair a little longer it can be blended into the hip and hind quarter to make it look more level. The area close to the tail is trimmed very short.
- When clipping the legs make them look as square as possible. Don’t take off too much of the hair.
- When clipping, try to blend in every part of the body so there are no sudden or hard lines. The animal should look as natural as possible.

Fitting

Fitting is the finishing touches that you do on the day of the show.

- Wash and dry your calf.
- Pull the hair up on the legs, with your scotch comb. Spray adhesive on the hair as you comb to hold it in place. This is called boning.
Handling

- The legs should look as straight as possible.
- Bone the back legs up to the twist, which is about halfway up the hindquarter.
- After boning, you may need to do a little shaping with the clippers.
- If you have a short-haired animal be sure the knees are really clean as dirt and stains will show up more on short haired animals.
- Work at small areas at a time, check it out, and make corrections and then move on to a new area.
- Groom the body by combing upward and forward.
- Spray an oil base conditioner on the hair coat of the body.

Photos taken by Bonnie Snezyk

Remember that no two animals are exactly alike and that your methods of grooming will change with the hair type and the build of the animal. Groom and fit to bring out the animal’s best characteristics.
THE GREAT BALLOON RACE

PREPARATION:

- You will need a large (helium quality are best) balloon for each member, and a few extras in case of unexpected explosions.
- Cut up the following questions and insert one question into each balloon.
- Have the answer sheet ready to check answers.
- Have two solid chairs ready - one for each team.
- Draw a line with chalk or mark with masking tape so the teams have a starting point.
- Put the chairs at the other end of the room, or if you are outside you can make it a little further away from the starting point.
- You will need two people to time the answers - one for each team.

PLAYING THE GAME:

- Divide the group into two teams.
- Give each member a balloon with a question inside, and have them blow the balloon up and tie it.
- Have each team in a straight line behind the starting point.
- When you say "GO," the first member from each team runs down to the chair and sits on their balloon to break it.
- They have to watch for the question inside to pop out. They pick up the question and asked their team mates for the answer.
The team has 30 seconds to come up with the correct answer and earn a point for their team.

The first answer given is the only answer accepted so remember to have a quick huddle with your team before giving an answer. You might want to select one person to give the team answer each time.

When the team has given the right answer or 30 seconds are up, the second person runs to the chair with their balloon and the great race continues on.

The team with the most correct answers wins the game. It's possible that the team who finishes first might not have the most correct answers.

Questions for Balloons

All Answers are TRUE or FALSE

Cattle can see a larger area than humans.  T
The line or boundary an animal will move away from you when you are inside it is called the Running Zone.  F
Cattle like to follow a leader.  T
Cattle move better through a chute system that is straight.  F
The lead strap of your halter should be long enough to reach the ground.  F
When setting up your calf, hold the lead strap in your right hand and your show stick in the left.  F
When setting up your calf, you want the back legs really close together.  F
A profile set up is done when the animals are head to tail, not side by side.  T
Scratch your calf with the show stick behind the ears to keep it calm.  F
You may have to answer questions about your calf’s age, breed etc. for the judge.  T
Animals enter the ring and move in clockwise direction.  T
A fluffer comb has teeth that are further apart than a scotch comb.  T
An adhesive is used to keep an animal's ears looking straight. F
You should wash your calf from the hooves up. F
If you are blowing dry your calf, do it from front to back. T
Never clip the face of your 4-H calf. F
When clipping your animal, blend in every part of the body and make the animal look as natural as possible. T
Leading your 4-H calf behind the tractor is a good way to teach it to lead. F
If your calf is not well trained you should give it a shot of tranquilizer to calm it down before the show. F
If the calf ahead of you is balking, pull out of line and get ahead of it. F
If your heifer is in heat at the show you need to be extra cautious around other animals and make other members aware of it. T
You should discipline your calf in the ring by hitting it on the nose with your show stick. F
Hot water works best for washing your calf. F
Cattle like to be washed with icy cold water. F
It's OK to change the color of your calf by dying it. F
The safest place for younger brothers and sisters to be when you are handling cattle is sitting up on the top of the corral fence. F
The nose strap of your calf's halter should be just above his nostrils. F
You should wrap the lead rope around your hand for a better grip. F
All Projects JUDGING HEIFERS

When we judge market animals we look for muscle and fat cover. The market animal is only kept until it is finished, and then it is sent for slaughter and the meat moves on to the consumer. When we judge heifers that are to be kept for breeding we need to remember that we want the animal to produce good quality calves over several years. Structure, health, soundness and conformation are important points for heifers. If you are raising purebred heifers, you will want the heifer to meet breed standards.

Heifers need to have:

- Correct, strong legs for carrying the extra weight of a calf inside of them, and for walking over a variety of ground types when grazing. The legs should be set squarely underneath the animal and should be widely placed and straight. Legs that are bowed, cow hocked or weak in the pastern will shorten the length of time this animal will be productive. The hooves need to be solid with no cracks or long toes so the animal can walk properly.
Judging

- A smooth shoulder that blends into the other body parts.
- A wide muzzle to allow for effective grazing. There should be some distance between the eyes.
- A trim and feminine looking head and neck.
- Normal teat and udder development.
- A good spring of rib and depth through the chest and heart, so they have enough room to carry a calf.
Judging

- High-quality frame, and muscling, with width in the hind end.
- Pins that are slightly below the hook with good distance between the pins to allow for easy calving.
- A vulva that is tight and firm to guard against infection.
- An overall healthy appearance, with alertness and energy.
- An animal that has a good temperament and easy to work with. Temperaments like other traits can be passed on to the offspring.

"Checking out the heifer crop"
Judging

Ideal Heifer

- Angular through neck and shoulders
- Long level rump
- Strong topline
- Neat tailhead
- Deep, longed muscled rear quarter
- Long Stifle
- Correct set of hocks
- Productive looking udder
- Strong pasterns

Trim neck, dewlap, and brisket

Deep ribbed

Clean fronted

Long, smooth muscled rear quarter

Correct set of hocks

Correct set of feet and legs

Smooth Shoulder

Deep, wide chest floor

Natural thickness down the back and loin

Deep /bodied

Legs set wide apart
TERMS FOR JUDGING HEIFERS

Add one more term for each group of terms. (You can make up one of your own)

General Terms:

- A taller, lengthier heifer.
- Female showing more balance and **symmetry**.
- ________________________________

Head Style and Breed Character Terms:

- More feminine through the head, neck and shoulders.
- Shows more desirable breed character through head, ears and neck.
- ________________________________

Fore Quarter Terms:

- Fuller in the heart with a more desirable spring of rib.
- More smoothly blended through the neck and shoulder.
- ________________________________

Ribs, Back and Loin Terms:

- Stronger topline.
- Long level rump.
- ________________________________
Judging

Hind Quarter Terms:
- Neater tailhead.
- Longer stifle.
- 

Legs and Bone Terms:
- Straighter, stronger legged.
- Stands more squarely on all four legs.
- 

Fertility/Reproductivity Capacity Terms:
- More uniform teats.
- A tighter, firmer vulva.
- 

Photo taken by Brenda Warrener
MANITOBA
4-H JUDGING CARD

NAME or NUMBER: __________________________
4-H CLUB: _________________________________
AGE: ____________________________________

NAME OF CLASS: _________________________
PLACINGS:

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WRITE REASONS BELOW (give main points):

I place _______ over _______ because:

________________________________________________________________________________________

I place _______ over _______ because:

________________________________________________________________________________________

I place _______ over _______ because:

________________________________________________________________________________________

MAIN REASON FOR BOTTOM PLACING:

________________________________________________________________________________________
Use the information you have learned about judging heifers to place these four heifers. Study the diagrams and find terms that you think fit each animal in comparison to the others. Use the judging card on the previous page.
WHAT IS A CARCASS?

CUTS OF THE CARCASS

CARCASS VALUATION

EVALUATION WHAT
All Projects

WHAT IS THE CARCASS?

The carcass is the part of the animal that is left after the head, feet, hide and internal organs are removed.

Diagram courtesy of the Canadian Food Inspection Agency
Agriculture and Agri-Food Canada ensures that every beef carcass is graded and inspected to give the consumer a top quality, safe product.

Grading sorts the carcasses according to different characteristics, such as age, color, yield, fat, and marbling. The grading system looks at both the quality of the carcass and the quantity of meat. When they examine the carcass they look for:

- **Maturity**: As the animal gets older, bone and cartilage become hardened.
- **Quality**: Is determined by the color, texture, firmness, fat, and marbling of the carcass.
- **Meat Yield**: Graders determine the amount of fat cover by checking between the 12th and 13th rib. Marbling or the small fat deposits in the muscle or meat improves the quality of the meat.

When the graders are done examining a carcass, they give it a “grade”.

**Inspection** is done before and after slaughter to be sure the animals are handled properly. Inspectors have standards for sanitation, hygiene, product handling, packaging and labelling.
THE GRADES OF BEEF

Carcass Yield Assessment
Only Canada Prime, Canada AAA, Canada AA, and Canada A carcasses are assessed for a lean meat yield class. Yield is determined by measuring exterior fat thickness as well as the length and width of the rib eye muscle. The yield class is stamped in red ink on the short loin and rib sections of each side of the carcass.

There are three yield classes.

- **Canada Grade A** has these characteristics:
  - Meat from youthful animals
  - Muscle is bright red, firm and fine grained
  - The fat covering is firm and white
  - A1 which is the leanest A, AA, or AAA
  - A2 – A, AA, or AAA
  - A3 which is the fattest A, AA, or AAA

The Canada "A" grades (Canada Prime, Canada AAA, Canada AA, Canada A) differ by the amount of marbling in the meat: Canada Prime having the most marbling and Canada A having the least.

Diagrams courtesy of the Canadian Beef Grading Agency
Carcass Evaluation

Canada Grade B has these characteristics:

- Meat from youthful animals.
- Carcass lacks enough fat cover.
- May have yellow colored fat and darker colored meat.

There are four different Canada Grade B grades:

- B1 lacks sufficient marbling
- B2 has yellow fat
- B3 lacks adequate muscling
- B4 has a dark meat color

Canada Grade D has the following characteristics:

- Meat from mature cows

There are four different Grade D grades:

- D1 will have excellent muscling and sufficient fat cover
- D2
- D3
- D4 will have the least muscling and fat cover of the D grades

Canada Grade E has the following characteristics:

- Meat from mature bulls
Carcass Evaluation

All Projects

If you sold a finished market animal and it graded Canada Grade A1, what price would you get for it today? _____________ (per lb or kg)

Would you expect this animal to be youthful or mature beef? __________

Would the meat be bright or dark red meat? ___________________________

If you sold a seven year old cow what would you expect the grade to be? ________

What price might you get for her today? __________

Diagram courtesy of the Canadian Beef Information Centre
WRAPPING UP THE CARCASS

Across
3. Someone who buys the meat we produce.
5. A period of time after antibiotics are given before the animal can be slaughtered.
7. Beef is a good source of this mineral.
8. A harmful gas that some people believe is produced in large amounts by cattle.
9. Many consumers are concerned about the use of this item, which increases the growth rate in animals.
10. The part of the carcass that contains the most expensive cuts.

Down
1. Beef is put into different classes by this system.
2. An illness that can affect humans if meat is not handled and cooked properly.
4. The amount of fat deposits within the muscle of meat.
6. A process our meat goes through to be sure it is safe to eat.

Answers on page 136
**ANTIBODIES**: Antibodies are inside the body and fight against new diseases that enter the body.

**ANALYSIS**: When something is broken down into all of its separate parts. In a feed test, it is analyzed for things like potassium, calcium, protein, and energy.

**CARCASS**: What you have left when you remove the hide, head and insides of an animal.

**CARRIER**: With vaccines, the carrier is a neutral liquid that is mixed with the vaccine to get it into the body systems.

**CASTRATION**: Removing the testicles so that a male animal cannot breed.

**CHARACTERISTICS**: Color, size, milk production, conformation and temperament are all characteristics of an animal.

**CONFINED**: When talking about cattle, confined generally is referring to being in a closed in area such as a feedlot or a barn.

**CONTAMINATED**: When something becomes polluted or has substances in it that are not naturally there.

**CONTAGIOUS**: When an illness can be passed from one animal to another through the air or by touching.

**DEBRIS**: Dirt, garbage, or something else that would not normally be there.

**DIAPHRAGM**: In a pump system, the diaphragm is kind of a check point that opens and closes to allow the water in or out.

**DIET**: The mixture of feeds you are giving your animal.

**DISINFECT**: To make as clean as possible, killed off germs and bacteria.
EXTERNAL: On the outside of the body.

FORAGES: Hay mixture.

FIBRE: The courser part of the forage that doesn’t break down as easily.

GUAGE: In needles, the gauge refers to how large the opening is at the end of the needle.

IMMUNITY: When the body has enough antibodies of that particular disease that it won’t catch the disease.

INTERNAL: Inside the body system.

KILLED VACCINE: A vaccine that is made up of dead organisms of the particular disease you are trying to prevent.

LEGUMES: Feed, like an alfalfa.

LIVE VACCINE: A vaccine that is made up of living organisms of the particular disease you are trying to prevent. They have been slightly altered for the vaccine.

RATION: How much feed an animal gets daily.

ROUGHAGES: An example would be hay and straw.

SEDIMENT: Usually refers to dirt, sand, gravel or manure that settles out of the water, or runs into a water system during spring run-off or heavy rains.

SILAGE: Forage that is cut at high moisture content and allowed to ferment in storage.

SHRINKAGE: The amount of weight lost by an animal when it is taken off feed and water before selling it.

SYMMETRY: Refers to a balanced, even proportioned look of an animal.
TORQUE: An amount of force used against or on something.

UTERUS: The part of the body of a cow where the calf develops and grows.

VELOCITY: How fast water is running.

VULVA: The outside lips of the vagina.

ANSWER PAGE

Page 52: 12 calving steps:

10 Roughage Grain
1 Lab Analysis
12 Gain Pounds
5 Kilograms Hay
2 Straw Barley
7 Silage Phosphorus
6 Grow Protein
11 Fat Performance
8 Weathering Fermentation
4 Nutrients Sample
9 Calcium Forage
3 Test Ration
2 Straw Barley
12 Gain Pounds
5 Kilograms Hay

Page 70: The Feeding Frenzy

Roughage Grain
Lab Analysis
Gain Pounds
Kilograms Hay
Straw Barley
Silage Phosphorus
Grow Protein
Fat Performance
Weathering Fermentation
Nutrients Sample
Calcium Forage
Test Ration
Cost Water
Diet Nutrition

Page 30: Beef Breed Round-up

1. Angus 2. Charolais
3. Limousin 4. Hereford
5. Luing 6. Murray Grey
7. Pinzgauer 8. Red Poll
9. Saler 10. South Devon
11. Shorthorn 12. Simmental

Page 133 Crossword

M A R I N G
C O N S U M E R
W I T H D R A W
I N S P E C T
M E T H A N E
C T I M P L A N T
L O I N
Thank-you to the following for sharing their information and resources:

Manitoba Agriculture, Food and Rural Initiatives (MAFRI)

Saskatchewan 4-H Council

Alberta 4-H Council

Alberta Agriculture, Food and Rural Initiatives

Texas Association of Extension 4-H Agents

Ohio State University - Agriculture and Natural Resources

John Popp - Farm Production Extension - Livestock

Brenda Warrener

Bonnie Snezyk
Now that you have finished this project, it is time to think about how you will share your experiences and knowledge with others. You may put your new skills to work by helping at a community event or at your club Achievement or teaching others about your topic. The goal of the Showcase Challenge is to help highlight your new skills and help you understand how you can use them. It can be an opportunity to receive feedback from others on your project. So go back through your manual and find some highlights of your learning (what you are proud of) and think about how you will “showcase” it.

Dream it!

Here are some Showcase Challenge Suggestions:

- Demonstrate something you made or learned about
- Act out a play
- Teach a class
- Use your new skills to help with the Club Achievement plans
- Make a poster or display
- Make a video or slideshow
- Organize a special event
- Or come up with your own idea. It is up to you and your leader!

My Showcase Challenge Plan

My showcase idea: ________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What materials and resources do I need? ____________________________________________
______________________________________________________________________________
______________________________________________________________________________

Who do I need to help me? ________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

When do I need to have things done by? ____________________________________________
Do it!
Insert or attach your finished product or a photo of you sharing your skills in your Showcase Challenge.

Dig it!
Now that you have showcased your project skills;
• How did your Showcase Challenge go?

• What would you do differently next time?

• How will you use your new skills in the future? *(in different situations?)*
### Project Name: ______________________ Skills Chart

To be completed by the leader and the member based on observations and conversations throughout the project. **This generic 4-H Portfolio Page is for use with all projects without a project specific 4-H Portfolio Page printed in the manual.**

<table>
<thead>
<tr>
<th>Meeting Date</th>
<th>Activities we did...</th>
<th>Skills I learned...</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>During your project you did activities to help you learn new skills. Identify these activities below.</td>
<td>Identify the skills learned in the activities completed in your project.</td>
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</tbody>
</table>

Additional Comments/Activities:

---

**Leader Point of Praise!**

I am most impressed by...

I acknowledge that the member has completed the 4-H project requirements.

Leader’s Signature: _____________________________
Above and Beyond!
In addition to project skills, 4-H also increases skills in meeting management, communications, leadership, community involvement through participation in club, area, or provincial 4-H events or activities. List below any activities you participated in this year in 4-H.
(Some examples include Executive Positions Held, Workshops, Communication, Community Service, Rally, Bonspiels, Conferences, Judging, Camps, Trips, Awards, Representation to Area or Provincial Councils, etc)

________________________________________  _______________________________________
________________________________________  _______________________________________
________________________________________  _______________________________________
________________________________________  _______________________________________
________________________________________  _______________________________________ 
________________________________________  _______________________________________ 
________________________________________  _______________________________________ 

**Feel Free to add additional pages that include awards, certificates, new clippings, photos or other items that describe your 4-H involvement.

Member Point of Pride!

What I learned...

What I need to improve on...

What I want others to notice...

Member’s Signature: _______________________________

Point of Praise! Another’s perspective on your achievements in 4-H.
(community professionals, 4-H club head leader, friends of 4-H)

I am most impressed by...

I believe that you have learned...

In the future I encourage you to...

Signature: _______________________________
4-H Achievement

4-H Achievement is... a 4-H club celebration when members have completed their projects. Achievements are planned by the club to give recognition to members and leaders for their accomplishments in their 4-H projects and club activities.

A 4-H Achievement can take many different formats: from choosing a theme, to member project displays, to members using their new skills for the event (entertainment, food, decorating, photographer, etc.), to members presenting their project to the whole group, the options are endless and open to the creativity of the members and leaders in each club!

Clubs may also plan their Achievement to promote 4-H to the community or to recognize sponsors and others who have helped the club.

Members and leaders - be sure to check your project books for the project completion requirements, so you will be ready for your club’s Achievement celebration!

If you have any questions, comments or suggestions for this or other 4-H projects contact:

Manitoba 4-H Projects
Manitoba Agriculture
1129 Queens Avenue
Brandon, MB R7A 1L9

Email: 4h@gov.mb.ca
Phone: 204-726-6613
Fax: 204-726-6260

For more information about 4-H and the many 4-H opportunities available please visit

http://www.gov.mb.ca/agriculture/4-h/
What is 4-H?

4-H is an international youth organization involving more than 7 million members in 80 countries around the world.

In Canada, 4-H began in 1913 in Roland, Manitoba as a community-based organization dedicated to growth and development of rural youth. Today’s 4-H program reaches both farm and non-farm youth across Canada. The motto of “Learn To Do By Doing” is embodied in the program, as 4-H focuses on skill development as well as personal development of life skills such as communications, leadership and citizenship.

4-H Motto

“Learn To Do By Doing”

4-H Pledge

I pledge,
My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service,
My HEALTH to better living,
For my club, my community, and my country.

All project materials are available in alternate format upon request.

Manitoba 4-H project material is developed by
Manitoba Agriculture