

**Unit Nine****Beef Cow and Heifer Management**

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**Roll Call**

Tell me one thing you must remember when looking after your beef cows and heifers.

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**Objectives****Level One**

1. To learn how to manage for healthy cows.
2. To review the nutrients required by cattle.

**Level Two**

3. To learn about the priority of nutrient usage in beef cattle.
4. To learn about selecting and managing replacement heifers for the herd.
5. To become aware of the importance of culling.

**Level Three**

6. To learn how, when, and why to condition score beef heifers and cows.
  7. To learn about some of the diseases which can affect beef heifers and cows.
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**Activities:****For the Entire Club . . .**

1. Invite a guest speaker. Possible topics are
  - cow and heifer diseases
  - condition scoring
  - feeding the heifer

**Level One**

2. Beef Level One - Unit 9, page 9-1.

The five main nutrients are water, vitamins, minerals, protein and energy.

## 3. Cow Management - A Word Scramble. Beef Level One - Unit 9, page 9-3.

LYTHEHA	● HEALTHY
CTTALIANO	● LACTATION
EIADSSE	● DISEASE
EGNYER	● ENERGY
GNNATEEMMA	● MANAGEMENT
TGINOTEAS	● GESTATION
EFHIRE	● HEIFER

## 4. Cow Management Review. Beef Level One - Unit 9, page 9-3.

To have healthy calves, you must first have healthy cows. Heifers have greater nutrient requirements than mature cows. Grazing cattle use energy as they move about to find food. Climate affects the cow's nutrient requirements. Cold temperatures, high humidity and strong winds cause the cow's requirements to increase. In early gestation, nutrient requirements do not change very much. However, during the last six to eight weeks before calving, nutrient requirements increase. The cow's nutrient requirements are greatest when she is producing milk.

What three things must you do to keep your cows healthy and productive?

1. Feed them properly.
2. Keep your animals free from disease and injury.
3. Practice good breeding management.

What can you do to practice good management?

- Know the signs a cow shows when in heat.
- Check your cows for signs of heat in the morning and the evening.
- Make sure you have enough healthy fertile bulls.
- Pregnancy check at the end of breeding season.
- Keep accurate records.
- Feed to meet cattle nutrient requirements.
- Adjust feeding programs for individual cows.
- Cull poor performers.

**Level Two**

5. Minimum Daily Requirements of the Beef Cow.  
Beef Level Two - Unit 9, page 9-2.

From the information on the chart, members should note

- Protein, energy and calcium requirements continue to increase as the cow progresses in her pregnancy.
  - Protein, energy and calcium requirements are even greater during lactation than they are during pregnancy.
  - Calcium and protein requirements during lactation are more than double the requirements of early pregnancy.
6. Developing a Successful Culling Program. Beef Level Two - Unit 9, page 9-3.
- Why might you cull a cow or heifer from your herd?
- disease (mastitis, prolapse, and so on)
  - injury
  - poor conformation
  - poor growth
  - death
  - reproductive difficulties
7. Would You Cull This Cow or Heifer? Beef Level Two - Unit 9, page 9-4.
1. Yes Mastitis is often a recurring problem in cattle.
  2. No Calves are healthy and no problems are mentioned with the mother.
  3. Yes She is getting older, and will not be able to calve in the next calving season.
  4. Yes Good conformation should be one of your criteria for selecting replacement heifers.
  5. No She is a good performer.

**Level Three**

8. Invite a level three member(s) to demonstrate condition scoring and explain why, how and when it should be done.
9. Invite a level three member(s) to talk about a disease(s) which affects cows and, or heifers. Have him or her (them) describe how to identify it, and how to prevent it.



**Unit Ten****Managing the Beef Herd Sire**

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**Roll Call**

Tell me one thing you must remember when looking after your beef bull(s).

Some of the answers you should hear are

- avoid underfeeding
  - avoid overfeeding
  - give special care to young bulls
  - don't expect them to breed too many cows
  - keep feet in good condition
  - provide room for exercise
  - evaluate semen
  - physically examine bulls
  - cull poor bulls
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**Objectives****Level One**

1. To understand the importance of the herd sire.
2. To introduce how to manage for a healthy bull.

**Level Two**

3. To learn what to look for when selecting a bull.

**Level Three**

4. To learn how to manage a young bull.
  5. To become aware of semen collection and evaluation techniques.
  6. To learn about the importance of hoof trimming bulls.
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**Activities:****For the Entire Club . . .**

1. Invite a veterinarian or an experienced beef producer to discuss and demonstrate how he or she conducts a breeding soundness examination on potential herd sires.
2. Visit an AI centre. Watch how semen is collected from bulls. Look at semen through the microscope and learn more about how it is examined and tested.
3. Judge a class of young bulls as potential herd sires. Discuss the goals you wish to achieve as a breeder and have members base their placings on that. Include reasons and a discussion to conclude.
4. Invite a beef producer to discuss how he or she selects replacement herd sires.

5. Play the board game “HE’S A HAPPENING HERD SIRE” which is in Beef Leader - Unit 10, page 10-4.
  - Use one board game for every four members (photocopy to make extra games).
  - Supply one die for each board.
  - Have members roll the die - highest number goes first.
  - Members need only a coin or button to use as their “man” to move about the board.

**Level One**

6. Beef Level One - Unit 10, page 10-2.

Deficient means that something is not complete. If something (a mineral or vitamin) is deficient in a diet, there is not enough of it to meet the needs of the animal.

7. Beef Level One - Unit 10, page 10-3.

Why is (are) the herd bull(s) so important?

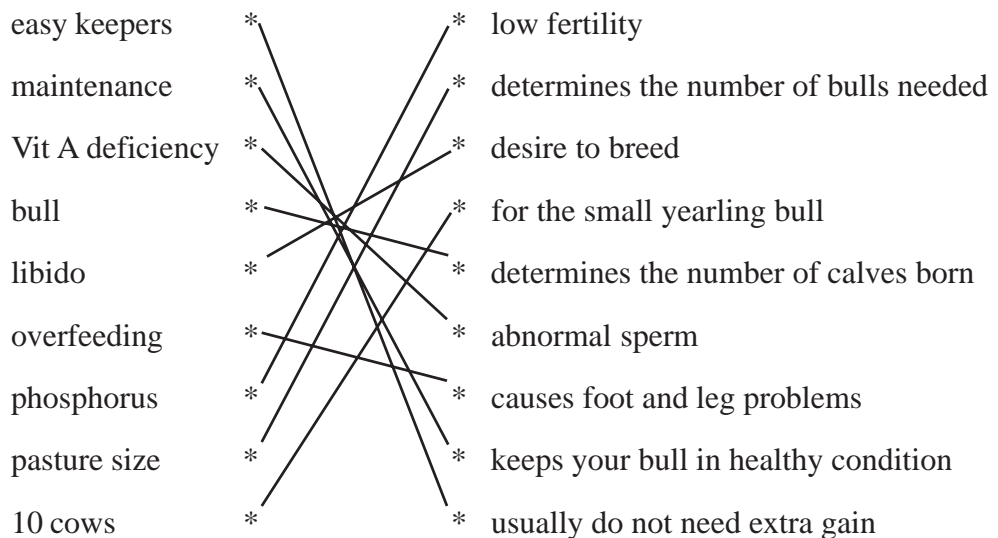
The bull determines the number of calves born, the length of the calving period, the growth rate of the calves, the calving ease and the genetic value of the herd.

What can you do to keep your herd bull(s) healthy and fertile?

Provide good nutrition, control disease, parasites and health problems, and practice good breeding management. Further information on these is in the junior material.

8. Test Your Bull Knowledge. Beef Level One - Unit 10, page 10-4.

Following is the solution for this matching activity. You may find it fun to make up cards for each of these and have members work on a table to match them up.



### **Level Two**

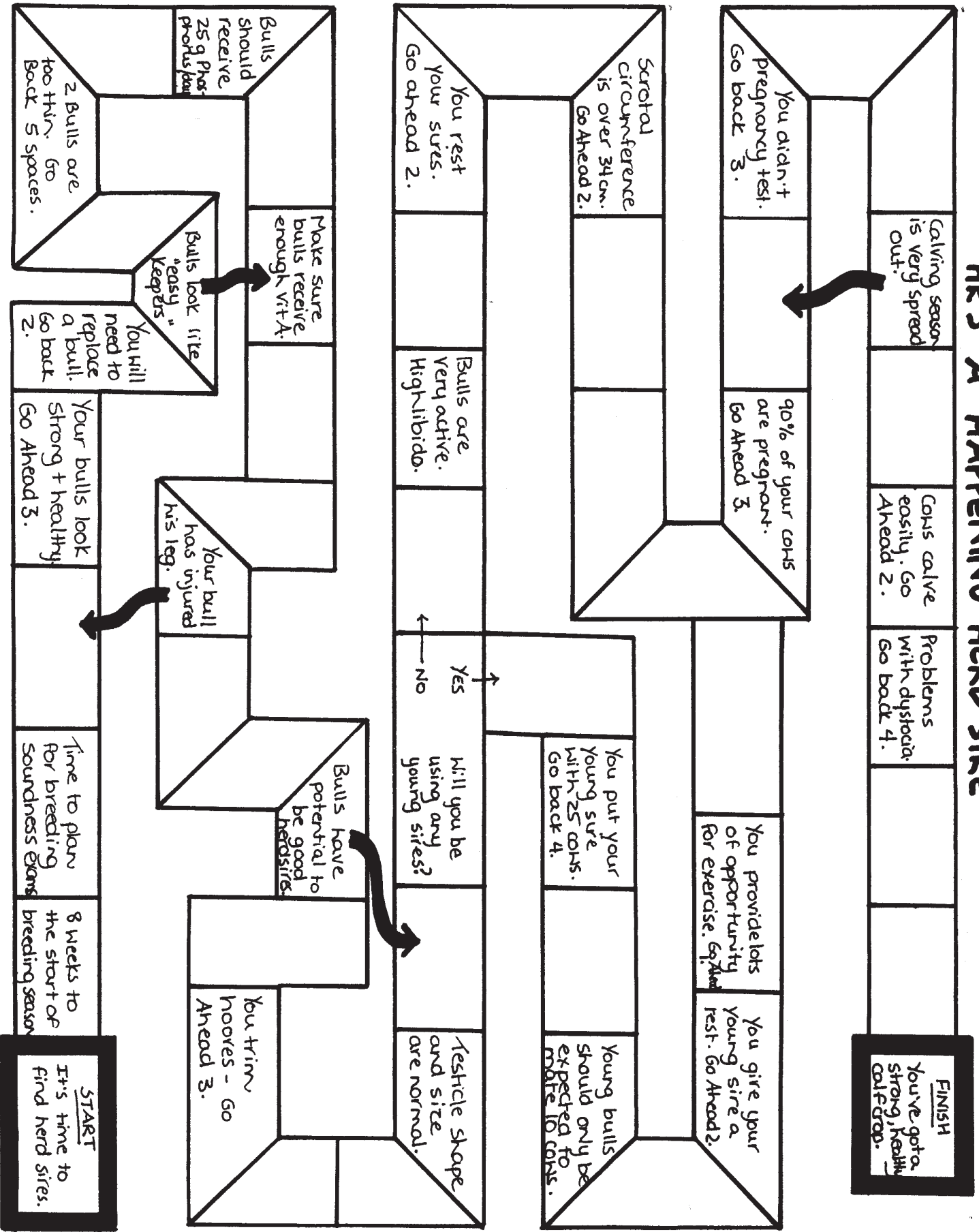
9. Invite a producer to demonstrate how to accurately measure scrotal circumference of the beef bull and to discuss how he or she uses the results.
10. Let's Review. Beef Level Two - Unit 10, page 10-4.

Using a bull at your meeting, work through these questions with your members.

### **Level Three**

11. Encourage members to spend time discussing the use of young bulls with a farmer.
12. Invite a level three member to explain to other club members why and how semen is collected. Have him or her describe the characteristics of normal semen.
13. Examine the condition of the feet of the cattle in a herd. Do they need trimming? Discuss why or why not. Invite a foot trimmer to demonstrate the proper trimming of feet.

# " HE'S A HAPPENING HERD SIRE "





**Unit Eleven****Beef Breeding**

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**Roll Call**

Tell me one thing you know about breeding beef cattle.

This should provide a good introduction into this topic. Record the answers on a blackboard or a large sheet of paper. A page from the classified ads section of your newspaper works well for recording and displaying information.

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**Objectives****Level One**

1. To introduce members to the reproductive cycle of the beef female.
2. To learn how to identify cows in the different stages of heat.
3. To learn the difference between natural and artificial breeding.

**Level Two**

4. To learn the structures of the male and female reproductive systems.
5. To become aware of the importance of pregnancy testing females.
6. To become aware of the importance of maintaining short calving intervals.

**Level Three**

7. To introduce the technique of artificial insemination.
  8. To learn about synchronized breeding programs.
  9. To learn about the heat detection aids which are available.
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**Activities:****For the Entire Club . . .**

1. Divide your members into two groups. Give each group a large sheet of paper and a marker. Give one group the topic of natural breeding and the other artificial insemination. Have each group come up with as many advantages as they can for their method of breeding.

Debrief this activity by discussing the advantages and disadvantages of each method of breeding. Point out that individual farmer preference also affects the method he or she chooses.

2. Debate. Give half your club members the topic of natural breeding and the other half the topic of artificial insemination. Give the teams 15 minutes to prepare their information for a debate on artificial insemination vs. natural breeding. You may want to invite one member to moderate the debate.
3. Invite an artificial insemination technician to demonstrate and discuss artificial insemination of beef cattle. Display the vial of semen and have members look at the information on it.

4. Show a video. Consult your 4-H Video Catalogue to find out more about available videos and how you can obtain them for use in your club.

### Level One

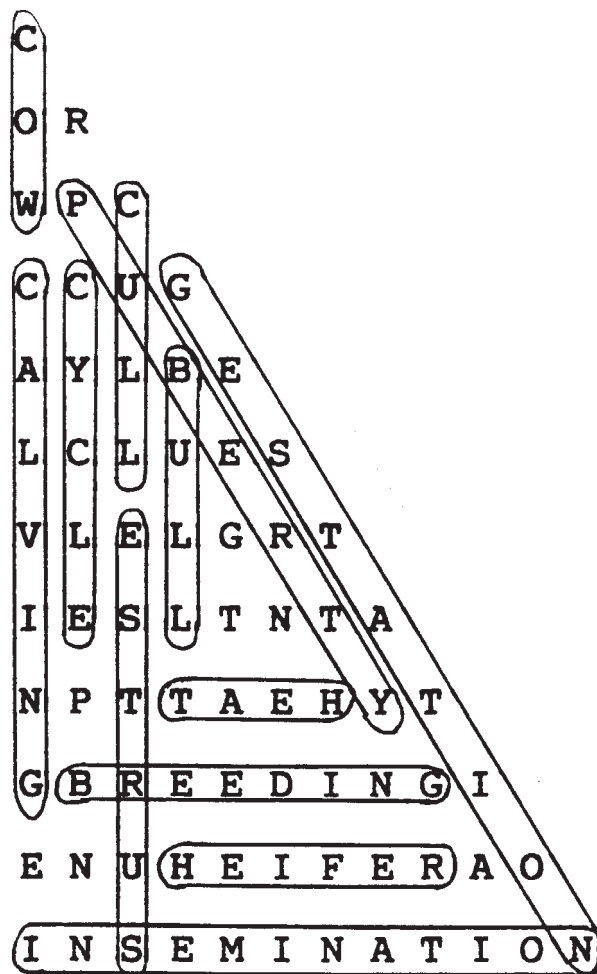
5. Beef Level One - Unit 11, page 11-1.

<b>If this cow was bred....</b>	<b>Watch her for signs of heat at this time....</b>
Betsy was bred on September 15th.	October 6th
Susan was bred two days ago.	19 days from today
Samantha was bred 15 days ago.	6 days from today
Lisa was bred this morning.	21 days from today

6. If you are holding this meeting at a farm during breeding season, have members identify the cows that are in heat. If it is not breeding season, invite a producer to discuss how and when he or she identifies females in heat.
7. Gestation Period. Beef Level One - Unit 11, page 11-2.

To help members understand how long this period of gestation really is, have them figure out when a cow will calve, given her breeding date. Using today as the breeding date, the cow will calve approximately 283 days from today. Then give members more dates of breeding and have them become familiar with figuring out due dates. Point out that this date is only approximate and can range anywhere from two weeks before to two weeks after. Only 4% actually calve on their due date.

8. Find the Repro Word. Beef Level One - Unit 11, page 11-4.



“At the end of the breeding season, you want all of your cows and heifers to be P R E G N A N T.”

### Level Two

9. Is Your Cow Pregnant? Beef Level Two - Unit 11, page 11-3.

Some of the advantages of early pregnancy detection are

- It gives early warning of breeding problems such as infertility, abortions, and so on.
  - You can avoid further expenses on non-pregnant cows by culling them immediately.
  - If you want to keep the non-pregnant cow and rebreed her, you can do it immediately without extending the calving season any longer.
  - It can guarantee pregnancy in females you are selling pregnant or for breeding purposes.
10. Invite a veterinarian or experienced beef producer to demonstrate and discuss pregnancy detection in beef females.

11. The Calving Interval. Beef Level Two - Unit 11, page 11-4.

Working in groups of two or three, have members sit down and figure out the calving intervals and decide whether or not they would keep these cows. Come together as a large group and make some decisions about these cows. Not all members will agree, but they should be able to explain why and how they decided. The answers are not as important as the learning which will occur through discussion.

12. Repro Summary. Beef Level Two - Unit 11, page 11-5.

gestation	*-----*	approximately 283 days
palpation	*          *	ideal calving interval
estrus	*          *	hormone which gives the bull his masculine appearance
testicles	*          *	where the fetus or baby calf grows and develops during pregnancy
testosterone	*          *	semen is placed in the female reproductive tract using artificial techniques
12 months	*          *	occurs about every 21 days
calving interval	*          *	almond shaped
uterus	*          *	produce the sperm
AI	*          *	pregnancy test
ovaries	*          *	length of time between the birth of one calf and the next

**Level Three**

- 13. Have a level three member display and discuss the information on a straw of semen.
- 14. Have your level three members work together to provide a display and discussion of heat detection aids which can be used in the beef industry.

**Unit Twelve****Calving**

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**Roll Call**

How can you tell your cow will soon calve?

Some of the answers you will hear include:

- udder begins to fill with milk or “bags up”
  - her belly “drops” or looks heavier
  - vulva relaxes
  - ligaments on both sides of the tail head relax and sink
  - becomes restless
  - isolates herself from other cattle
  - lies down and gets up often
  - raises her tail head
  - stops eating
  - tries to urinate often
  - discharges a thick mucus from the vulva.
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**Objectives****Level One**

1. To recognize the signs a cow shows when calving is near.
2. To recognize the stages of labour the cow goes through in calving.
3. To know the normal birthing position of the calf.

**Level Two**

4. To understand how dystocia can affect the calf, the cow and the beef producer.
5. To learn how the position of the calf can be corrected.
6. To learn how to correctly assist the delivery of the calf.

**Level Three**

7. To become aware of some of the problems the cow may encounter after calving.
  8. To learn about some of the other problems that may be encountered during calving.
  9. To think about coping with calving.
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**Activities:****For the Entire Club . . .**

1. Show a Video.

Consult your 4-H Video Catalogue to find out more about videos which are available for use in your club.

2. View a Calving.  
If possible, view a calving on a beef or dairy farm.
3. Invite a veterinarian or experienced beef producer to discuss how he or she deals with calving season and the problems which may occur.

### **Level One**

4. Which Stage? Beef Level One - Unit 12, page 12-3.

Following are the solutions. Encourage the members to ask questions as they work through this exercise.

- II Suzy has been straining for 20 minutes.
- I Marylou is wandering restlessly around the calving pen.
- I Belinda's water sac has just broken.
- II Betsy has just laid down in the straw. Half an hour ago she was really uneasy and nervous.
- II You can see the front legs of a calf coming out of Maisy.
- I Lisa is bawling and very restless.
- III Candy just delivered a strong healthy heifer calf 10 minutes ago.

5. Put It In Order. Beef Level One - Unit 12, page 12-4.

Following are the solutions. As you work through the exercise, discuss which stage these steps occur in. This is indicated in brackets.

- 1 Udder fills with milk. (I)
- 11 Calf nurses for the first time. (III)
- 2 Mother becomes restless. (I)
- 4 Contractions about 15 minutes apart. (I)
- 6 Calf enters birth canal. (I)
- 8 Calf's front legs and head appear. (II)
- 12 Afterbirth comes out. (III)
- 3 Calf changes position in uterus. (I)
- 9 Calf's head and shoulders appear. (II)
- 7 Contractions are two minutes (or less) apart. (II)
- 5 Water sac is broken. (I)
- 10 Calf's hips and hind legs appear. (II)

## **Level Two**

6. Identify the Problem. Beef Level Two - Unit 12, page 12-5.

The solutions are as follows:

1. Front feet first with the head bent down between the knees.
2. Front feet first with the head twisted backwards.
3. Breech calf - backwards with rear legs tucked under its body.
4. Normal forward birthing position.
5. Head and one leg first with other leg crossed over neck.
6. Breech calf - backwards with hind feet first.

Information about how to correct these problems is in the intermediate unit.

7. Demonstrate the proper use of calving chains on a volunteer. Have your volunteer bend slightly at the waist and hold his or her arms out in front as if he or she was going to dive. Attach the chains loosely on his or her wrists. Follow the directions in Beef Level Two - Unit 12, pages 12-3 to 12-4.
8. Have members share any experiences they have had or seen in delivering calves.

## **Level Three**

9. Invite a level three member(s) to share information on another calving problem.
10. Invite a level three member(s) to share information on his or her (their) survey on calving ease.





**Unit Thirteen****The Newborn Calf**

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**Roll Call**

When was your project calf born?

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**Objectives****Level One**

1. To learn about the importance of making sure the calf receives colostrum soon after birth.
2. To learn about the contents of colostrum.
3. To know the characteristics of a healthy calf.

**Level Two**

4. To review the importance of colostrum for the newborn calf.
5. To learn about calf scours and pneumonia and how they can affect the newborn calf.

**Level Three**

6. To learn about creep feeding calves.
7. To study the behaviour of the newborn calf and its mother.
8. To learn about and demonstrate how to freeze colostrum.

**Activities:****For the Entire Club . . .**

1. Consult your 4-H Video Catalogue to find out about videos and how to obtain them for use in your club. One suggestion is video 422-5 VT *The Lively Calf*.
2. Illustrate how much milk a calf needs. Ask members how much milk they should feed a 54.5 kg (120 lb) calf per day during nice weather and during cold weather.

Nice Weather - approximately 5.5 to 7.5 kg (12-15 lbs)

Very Cold Weather - approximately 7.5 to 8.0 kg (15-18 lbs)

To help them understand exactly how much this is, have them measure this out by filling a pail with what they think is 3 kg of water. Three kg would be the approximate amount for one feeding for a 60 kg calf. (A calf should eat 10 to 12% of its bodyweight in milk per day.) Use a bathroom scale to find out who came the closest to this amount.

## Level One

3. The Healthy Calf. Beef Level One - Unit 13, page 13-1.

Lead a discussion about the healthy calf. Ask members how they can tell when a calf is healthy. You may want to take them to a pen with calves and have the members answer while they look at the calves.

Signs that a calf is healthy include:

- bright eyes
- good appetite
- steady on legs
- moves about easily
- raised head and ears
- active
- healthy, shiny hair coat

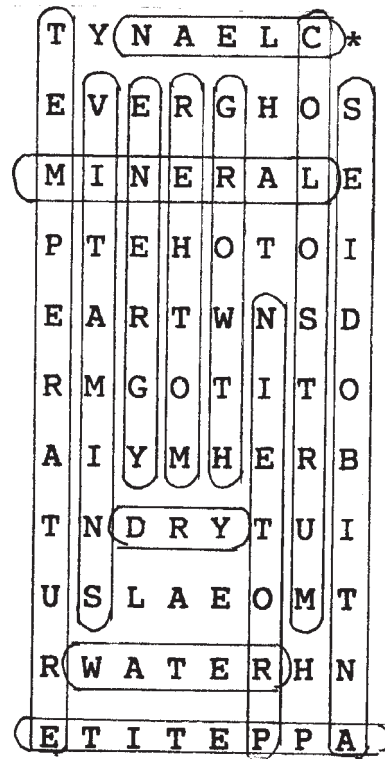
4. Demonstrate how to dip the navel. Show the product(s) which should be used.
5. If possible, show members a sample of colostrum and a sample of whole milk. (If you cannot get colostrum, maybe a neighbouring dairy farmer would give you some.) On a piece of paper beside each, create a list of the characteristics. Include visual and content characteristics. On Beef Level One - Unit 13, page 13-2 you will find the contents of each.
6. Demonstrate how to correctly take the temperature and determine the respiration rate of a calf. More information is on Beef Level One - Unit 13, page 13-3. Have members practice.
7. The First Month. Beef Level One - Unit 13, page 13-4.
1. The best milk for the calf comes from its mother.
  2. The most important things the calf receives from the colostrum are the antibodies.
  3. Vitamins and minerals are also found in the colostrum.
  4. It is important to make sure that your newborn calf receives the colostrum as quickly as possible.
  5. If you have extra colostrum, it is a good idea to freeze it.
  6. When you feed a calf artificially, you feed it milk replacer in place of milk.
  7. Your goal is to raise strong, healthy calves.
  8. Feeding the newborn calf properly is important for its future growth.
  9. Be sure to provide a good supply of fresh, clean water.

If you want to take this further, work with members to create two lists, one with the characteristics of a healthy calf and the other with the characteristics of a not-so-healthy calf.

**Level Two**

8. Let's Review About Colostrum. Beef Level Two - Unit 13, page 13-1.
  1. Colostrum is important for newborn calves because it supplies disease fighters called antibodies.
  2. A young calf should receive approximately 10 to 12% of its bodyweight in colostrum per day.
  3. Colostrum can be frozen so you always have a supply available.
  4. Colostrum is also high in vitamin A, protein and contains a laxative.
  5. The newborn calf can absorb the nutrients from the colostrum for only the first 12 to 24 hours after birth.
  6. Colostrum is thick, rich and yellowish in colour.
  7. If the calf is unable to suckle, you can give it colostrum using an esophageal tube.
9. What's The Problem. Beef Level Two - Unit 13, page 13-4.
  1. Charlie shows the symptoms of pneumonia. Keep him in a warm and dry place. Make sure he gets enough colostrum or milk and contact your veterinarian for advice on antibiotics.
  2. Lindy could possibly have calf scours. However, you cannot be sure. Contact your veterinarian and have him or her identify the problem. If the problem is enteritis, isolate the calf, feed it electrolytes and antibiotics as recommended by the veterinarian.
  3. The twins show the symptoms of nutritional scours. Clean and disinfect the pails, your clothes and their pens. Make sure they are in a clean and dry area, and receive electrolytes and the proper amount of milk (10-12% of their bodyweight per day). Contact your veterinarian if their condition does not soon improve.
10. Invite a producer or a veterinarian to display different electrolyte solutions and demonstrate how they should be fed. Have him or her talk about when and how he or she decides if a calf needs electrolytes.

11. Keep Your Newborn Calves Healthy. Beef Level Two - Unit 13, page 13-4.



The remaining letters spell the word which completes this sentence:

“As a beef producer, one of your goals is to produce strong, healthy calves.”

### Level Three

12. Invite senior members to share information with other members in the club about creep feeding, the behaviour of the newborn calf and its mother, or freezing colostrum.

**Unit Fourteen****Beef Cattle Handling and Facilities**

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**Roll Call**

What is one thing to remember when working with beef cattle?

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**Objectives****Level One**

1. To understand the basics of cattle behaviour.
2. To learn how to make a quick release knot.
3. To learn about other knots which can be used.

**Level Two**

4. To learn the purpose of and be able to identify each part of cattle handling facilities.

**Level Three**

5. To understand more about cattle behaviour.
  6. To learn and demonstrate how to make an adjustable rope halter.
  7. To know the recommended dimensions of various cattle handling facilities.
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**Activities:****For the Entire Club . . .**

1. Invite a guest speaker. Here are some suggestions:
  - trucker to discuss hauling and handling beef cattle
  - rancher to discuss ropes and, or working with cattle
  - someone experienced with building and designing beef cattle facilities to discuss how and why she or he builds these facilities.
2. View a video. Consult your 4-H Video Catalogue to find out what videos would be suitable for you and your club members.
3. Demonstrate how to load and transport beef cattle. Experienced beef handlers will have their own tips on what works best for them and why. Include loading for both market and show.

**Level One**

4. The Quick Release Knot. Beef Level One - Unit 14, page 14-2. It is important that all people working with cattle know how to make and release this knot. Spend time with your members practising how to make the quick release knot. Show them how firmly it holds when stressed and how to release it with a simple tug. You may want to tie a halter around a calf and tie the calf to a post using this knot.

5. Let's Work. Beef Level One - Unit 14, pages 14-2 to 14-3. Members can have fun working their way through this maze on their own or in groups. Add more situations if you like.
6. Release It. Beef Level One - Unit 14, page 14-4. This activity is designed to get members thinking not only about the knot but also about working with their animals. Some ideas are listed below. Encourage the members to come up with their own ideas - anything they can relate to this topic is fair game.

Q - quick, quiet, quality	R - restrain, rope halter
U - untie	E - excited
I - avoids injury	L - loop, little
C - cattle, control, good	E - emergency
K - kick	A - active
	S - safety, sharp feet
	E - easy to untie

7. More Knots. Beef Level One - Unit 14, page 14-4. If you have the time and interest, create each of these knots to show your members. Have them practice tying these knots themselves. Discuss when and why you might use them.

## Level Two

8. If possible, tour a farm with a variety of cattle handling facilities. Invite the host(s) to show members how each of the parts of the facilities work. Discuss the advantages and disadvantages of each part as you view it.

9. Looking at Beef Facilities. Beef Level Two - Unit 14, page 14-4.

headgate	*	*	used to move cattle in single file into the working chute
loading chute	*	*	lines up and holds the cattle in single file ready to enter the headgate or squeeze
squeeze	*	*	safely and securely restrains cattle
crowding pen	*	*	allows you to separate an animal from the group
cutting gate	*	*	prevents an animal from moving forward or back
back stop	*	*	prevents an animal from backing up
cattle guard	*	*	prevents an animal from kicking the worker
man gate	*	*	holds the animal by its sides, giving you greater control
scale	*	*	used for weighing the animal
kick bars	*	*	holds cattle before they enter the working area
working chute	*	*	for the safety and convenience of the worker
holding pen	*	*	used to move cattle up, usually onto a truck
blocking gate	*	*	allows you and a vehicle, but not the cattle, to enter a pen or yard

10. The Large Working Corral. Beef Level Two - Unit 14, page 14-5.

1. loading ramp	9. scale
2. fencing	10. curved chute
3. gate	11. cat walk
4. waterer	12. man gate
5. holding pen	13. squeeze with headgate
6. crowding gate	14. sorting gate
7. collecting area	15. concrete
8. crowding pen	

## 11. What Do You Think. Beef Level Two - Unit 14, page 14-6.

Following are some thoughts about each of the cattle handling facilities.  
Encourage your members to discuss and come up with their own thoughts.

1. The chute is slippery because the cattle are bringing mud and, or wet feet up the chute. It should be located in a dry area.
2. Chutes should only be wide enough to handle one animal at a time.
3. This person will find that she or he will need to have some sort of facility, especially when working with older and untrained cattle.
4. The bright light shining in the eyes of cattle makes them stop. They cannot see where they are going. The area should be lit, but don't shine the light into their eyes.

**Level Three**

12. Invite a level three member(s) to present a short skit to demonstrate the behaviour of cattle.
13. Invite a level three member(s) to demonstrate how to make an adjustable rope halter. You may want to have several level three members each make a rope halter. Your whole club could then judge a class of rope halters to practise judging skills.



**Unit Fifteen****Range and Pasture Management**

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**Roll Call**

What is one thing you might find on the land where you graze your cattle?

This question should provide a good introduction to this unit. Encourage members to use their imagination. Answers will include everything from fences, plants and gates to cattle, horses and wild animals.

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**Objectives****Level One**

1. To learn the difference between range and pasture land.
2. To learn why and how to properly manage range and, or pasture land.
3. To become familiar with different types of range and pasture plants.

**Level Two**

4. To be able to determine the stocking rate for range or pasture land.
5. To become familiar with the factors which can affect how the land is grazed.
6. To realize that forages differ in their values.

**Level Three**

7. To know the differences between types of grazing systems.
8. To be able to determine range condition.
9. To learn more about plants which can harm cattle.

**Note for all leaders:**

The 4-H Range Project, a supplemental project specially designed for young members, is available to 4-H clubs. Contact your regional 4-H specialist for more information.

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**Activities:****For the Entire Club . . .**

1. Invite a guest speaker. Suggestions include the following:
  - A member of a forage association to discuss range management, choosing a pasture site, forage quality or poisonous plants.
  - A veterinarian to discuss poisonous plants, symptoms, treatment and diagnosis of poisoning.
  - A range management or grazing specialist to discuss any aspect of range management.
  - A grazing reserve manager to discuss his or her reserve.

2. Show a video. Consult your 4-H Video Catalogue or your local district agriculture office to find out more about videos available for use in your club.
3. View and tour a large range. Make sure members notice the variety of land areas and plants.

### Level One

4. Range or Pasture? Beef Level One - Unit 15, page 15-1.

Invite members to share information about their farm or ranch. How much land is range and how much is pasture? What differences do they notice between these? Take a few minutes to identify whether certain local land is range or pasture.

5. Good Range and Pasture Management. Beef Level One - Unit 15, page 15-2.

Emphasize the importance of practising good management of your range and, or pasture.

Using a large sheet of paper, such as a sheet from the classified ads section of your newspaper, a blackboard or a white board, divide it in two by drawing a line down the centre. Put the heading “Good” (a well-managed range or pasture) on one side and “Bad” (a poorly managed range or pasture) on the other.

Ask members to tell you the characteristics of the pasture on each side. Have members record them. Conclude your discussion by asking members which one they would rather have. Emphasize again the importance of practising good pasture and, or range management.

6. Word Scramble. Beef Level One - Unit 15, page 15-3.

ZAERG	- graze
RSTUPAE	- pasture
NMGEAA	- manage
NGREA	- range
SSBRHU	- shrubs
BROFS	- forbs
SSSEARG	- grasses
SSHRUE	- rushes
DGSSEE	- sedges

7. Range Review. Beef Level One - Unit 15, page 15-4.

Use this page however you wish in your club, but try to avoid assigning it for “homework”. All of the solutions can be found in the level one material.

**Level Two**

8. The Stocking Rate. Beef Level Two - Unit 15, pages 15-1 to 15-2.

Lots of information is available on this topic. If you want more for your members, contact your local Alberta Agriculture office and they can point you in the right direction. You may want to practise measuring the forage production on the land by following the method in the level two material, or other recommended methods. Emphasize that the production will vary among different ranges or pasture and depending on soil, topography, climate and condition of pasture.

9. Pete's Problem. Beef Level Two - Unit 15, page 15-2.

Encourage members to help Pete solve his problem. Have members work in teams, or if your club is small, work together as a group to figure out how long Pete should put his 10 cows on the field.

Information given:

- 10 cows
- one cow eats 12 kg of forage per day
- 20 hectares of land
- 500 kg of forage per hectare - but we know that with good grazing management, you only graze half of this forage or 250 kg.

Solution:

- one cow will eat 12 kg of forage per day
- 10 cows will eat  $10 \times 12 = 120$  kg of forage per day
- The field produces  $20 \times 250$  kg = 5000 kg of available forage (Remember we will only be grazing half and you need to remember the 25% wastage factor.)
- $5000 \text{ kg} : 150 \text{ kg/day} = 33$  days

Therefore, Pete should put his cows out on this land for approximately 33 days or five weeks.

If you wish, design a problem (or have a level three member do it) which is specific to your local conditions. Have members work together to solve it.

10. Range Review. Beef Level Two - Unit 15, page 15-4.

- |                 |               |
|-----------------|---------------|
| 1. range        | 6. varies     |
| 2. pasture      | 7. units      |
| 3. good         | 8. rate       |
| 4. palatability | 9. month      |
| 5. animals      | 10. trampling |

**Level Three**

11. Grazing Systems. Beef Level Three - Unit 15, pages 15-1 to 15-2.

There are several ways you can approach this topic:

- Invite someone to speak about his or her grazing system and how and why it works for him or her.
- Have members work together to plan a grazing system for a specific land area.
- Have a level three member(s) explain, in a brief presentation to other members, all about grazing systems.
- Have a level three member(s) design his or her (their) plan and share it with other members of the club.

12. Range Condition. Beef Level Three - Unit 15, page 15-3.

Encourage members to practise determining range condition.

13. Poisonous Plants. Beef Level Three - Unit 15, page 15-4.

Encourage level three members to learn more about plants which can harm their livestock. A good way of doing this is to have them share their information with the rest of the club.

**Unit Sixteen****Record Keeping**

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**Roll Call**

What is one record you keep on your (or a neighbour's) farm? Encourage members to think of any kind of record - from long distance phone calls and household food expenses to feed, veterinary and breeding costs.

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**Objectives****Level One**

1. To understand why records are kept on farms.
2. To learn some of the different types of records which are kept on farms.

**Level Two**

3. To look at what is involved in deciding on a farm record keeping system.
4. To learn about performance records for beef cattle, using weaning weights as examples.
5. To look at the farm records on a specific farm.

**Level Three**

6. To decide which method of keeping farm records is best for individual operations and why.
  7. To learn about different computer record keeping programs available on the market today.
  8. To learn how to use records to identify breeding goals.
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**Activities:****For the Entire Club . . .**

1. Because the systems used for keeping records vary greatly from farm to farm, only a limited amount of specific information has been included in this unit. Members will benefit most from looking at actual farm records and record keeping systems and holding discussions with people in the business.

Invite a guest speaker. Suggestions include:

- A local bank manager to discuss his or her views on the types of records and information important in the business of lending or borrowing money.
- A beef specialist or farm management specialist to discuss the record keeping assistance available from the provincial agriculture department.
- A local beef producer to discuss his or her methods of farm record keeping.
- A local computer supplier to discuss current trends in computer usage.

- An accountant to discuss farm accounting practices.
- A local auction mart representative to discuss how she or he keeps records.

### **Level One**

#### 2. Pedigrees. Beef Level One - Unit 16, page 16-2.

If someone in your club has an interest in family histories, you could have a lot of fun with this section. If someone has a family history book, have him or her bring it to the meeting so members can have a look and see what kinds of things are included. A simple pedigree or family tree is in the member unit. Encourage members to complete this for their family. You might want to have members do the same for a dog, pet or their calf.

#### 3. What Would You Do ... Beef Level One - Unit 16, page 16-4.

The objective of this activity is to help level one members understand how good record keeping systems will help them begin to solve problems. Encourage members to answer each of the questions. Have them think of how good records would help them with each situation. Following are some ideas for solutions.

- A If you always carry a notebook and pencil in your pocket, you could jot down the numbers of the cows, calves and weights. It would only take a few seconds, and you could transfer them to your records later, when you have time.
- B Check your breeding records. You should know that the length of the gestation period is 283 days. The cow or heifer will calve approximately 283 days after being successfully bred.
- C One of the things you might want to include in your breeding records each year is the length of time from the first calving of the season to the last calving. By keeping this record, you can compare your numbers over the years and see what your trend is.
- D It is important to enter all of your information into the computer or your farm record books to keep your records up-to-date and accurate. Set aside a period of time every week or two weeks for entering data. By using the same time period every week, it will be easier to schedule your other work around this time. You might want to set an alternate time as well.
- E If your records are complete, all your feed costs will be included. Simply look at the totals for the previous years and compare these numbers to what you have spent on feed so far this year. Keep your records up-to-date and you will have some very accurate information.

**Level Two**

4. Where and how do you keep farm records? Beef Level Two - Unit 16, page 16-1.
5. Performance Records on Beef Cattle. Beef Level Two - Unit 16, page 16-3.

The weaning weight is just one of several performance records which can be used as a management tool on the beef farm.

To calculate May's 205 day adjusted weaning weight:

$$205 \text{ day wt} = \frac{(202 - 25)}{220} \times 205 + 25 = 190 \text{ kg}$$

Because the dam is eight years old, there is no need to make any adjustment. May's adjusted 205 day weaning weight is 190 kg.

May and Allie both have 205 day weaning weights which are above average for their group. They have the genetic potential to be superior animals.

6. Looking at a Farm. Beef Level Two - Unit 16, page 16-5.

This exercise will be valuable to help members further understand the benefits that records can provide.

**Level Three**

7. All three of the activities in the level three unit will help members further understand the benefits of record keeping on the farm.

