

Breeding & Reproduction Activities

Speaker Suggestions

- Artificial Insemination technicians or salespersons
- Sire Analyst
- Embryo transfer technician
- Experienced cattle breeders
- Different breeders that have different breeding goals on their farms

Roll Calls

- What breed is your 4-H calf? What country did this breed come from?
- Name one characteristic breed trait of an ideal animal to improve.
- Why do farmers try to improve the genes of their dairy cows? (i.e. changing market needs, more milk produced with fewer cows, to compete in the local and global markets, get rid of “bad” traits, improve “good” traits, etc.)
- Based on the traits of the sire or dam, what would you expect your 4-H project animal to be like when ‘she grows up’?
- Name one of the breeds of dairy cattle and one of the common traits that breed possesses
- Name one part of the bull or cow’s reproductive system. What is its function?
- What types of animals can be bred artificially and why? (i.e. dairy cattle, beef cattle, horses, dogs, cats, pandas because of endangered species, to have a purebred pet, to make money, etc.)
- Name one sign that a cow or heifer is in heat
- Name one thing that a good breeding program includes (i.e. goals, heat detection system, balanced nutrition, herd health, knowledge of breeds, traits, genetics, etc.)
- If you’ve ever seen an animal be born, pick one word to describe the experience. If you’ve never seen an animal be born, describe in one word what you think it would be like.
- What is one of the steps leading to the birth of a calf or other animal?
- What is one problem that can happen before, during or after calving?

Project or Take Home Activity Ideas

1. Create a project researching one of the dairy cattle breeds found in Canada or in other parts of the world
2. Predict the production of milk, fat and protein you can expect from your 4-H project calf based on her parents’ genetics. Predict the udder quality and mature size of the calf based on the proof and classification of her parents.
3. Find a picture of the sire and dam of your 4-H calf. Then, find the genetic indexes for the sire and dam. Include the pictures and indexes as part of your records for your calf.



4. Explain how to use Parent Averages to predict the outcome of a calf and why PAs are valuable tools. Discuss the proper 'tools' to make genetic decisions.
5. Looking at pictures of a cow is not a reliable way to make genetic decisions. Discuss why and why not.
6. Follow one cow or heifer through a heat, observing her for about 10 minutes every two hours. Record the signs you see over that period of time.
7. Find out whether your farm or a neighbour's farm uses artificial insemination or a farm bull and why. Share your findings at the next meeting.
8. Videotape the birth of a calf that can be shown and explained at a meeting.
9. Evaluate a cow's physical conformation and note any inferior qualities. Using an A.I. catalogue for her breed, make a list of some bulls that can be expected to sire daughters with better physical characteristics than the dam. Evaluate this list of sires for production records. Then select the first and second choices of bulls to mate with the cow according to your evaluations.



Activity: Promoting the Breeds

Purpose: To introduce members to the different breeds of dairy cattle and the attributes of each

Age Group: All members

Time Allotted: 30 minutes

Preparation & Equipment: Bristol board or chart paper and markers, breed magazines, the section of the 4-H manual in Breeding and Reproduction that covers the breeds; coupling this with a tour of a farm that has a breed of cattle that most of the members do not have would be beneficial

Instructions:

- Split members into groups and give each group a breed of cow that they need to promote (do not let them pick the breed in order to make sure that many breeds are covered)
- Allow members to use resources to come up with a promotional campaign for that breed, which could include a skit, poster, etc.
- Ask groups to present their findings to the rest of the group

Debrief: Encourage members to consider that the different breeds have different positive and negative attributes. No one breed is better than another. It is the same with different races of people. Ask members what breeds they have at home. Would they ever like to have a different breed?



Activity: Take a Crack at Classification

Purpose: To give members a chance to practice classification using real specimens

Age Group: Senior members

Time Allotted: 20 minutes

Preparation & Equipment: A cow; breed classification worksheets found in the Resource Manual; pencils.

Instructions:

- Using the breed classification worksheets included in the Reproduction & Breeding section of the Resource Manual, have members classify a cow. Once they have had a chance to complete the worksheet, have them compare results.

Debrief: Discuss the relative importance of the different parts of the cow in classification. What is the difference between showing and classifying?



Activity: Reading Genetic Indexes

Purpose: To familiarize members with the components of a genetic index and to help members practice their presentation skills.

Age Group: All members; May need to gauge the youngest members as it could be too advanced for them

Time Allotted: 20 minutes

Preparation & Equipment: A cow's genetic index cut into six sections, chart paper and markers

Instructions:

- Divide the members into six groups. Give each group a section of the genetic index for a cow. The group is responsible for explaining its section to the rest of the members. They can use whatever teaching technique they like, including the chart paper and markers available at the meeting.
- After each group has had time to look over its section, each of them can take turns teaching the rest of the club what the section means and how it is used by farmers to make breeding decisions
- OPTIONAL – This activity can be repeated in the same way using a bull proof. You can talk about the differences between a bull proof and a cow index.

Debrief: Why is a cow's genetic index (or a bull proof) a useful tool? Why is it important to look at each of the different sections (i.e. production, conformation, health traits, etc.)? How did you feel about making a presentation to the rest of the club? When can you use these presentation skills in other areas of your life?



Activity: Selecting Sires

Purpose: This activity helps members learn how to make decisions about selecting sires and improving genetics.

Age Group: Members 12 and over

Time Allotted: 30 minutes

Preparation & Equipment: copies of indexes from four cows and proofs from at least four bulls

Instructions:

- Divide the members into groups of two or three. Give each group a copy of the bull proofs and genetic indexes.
- Each group has to decide how to mate which bull with which cow. They can use three strategies:
 - o Mating the best bulls with the cows to improve production only (single trait selection)
 - o Mating the best bulls with the cows to improve both production and type (balanced breeding)
 - o Correctively mating cows with bulls to improve traits in the cow
 - o NOTE: Each group could be given a different mating strategy to try.
- After each group is finished the activity, ask members to share their results for these mating strategies. How and why did the results differ?

Debrief: Why were there, if any, differences of opinion about which cow to mate with which sire? Which breeding strategy is most likely to improve genetics in your herd faster? Why? Were those decisions easy or hard to make? Why or why not? What would have been helpful to your decision making process?

Alternative Activity: Instead of examining cow indexes, members could look at a cow in the barn and her production records if they are available and try to select a bull to breed her to.



Activity: The Genetic Puzzle

Purpose: This activity introduces members to genetics and heritability and then gets them involved in trying to build a better cow.

Age Group: Junior members

Time Allotted: 35 minutes

Preparation & Equipment: breed magazines with pictures of cows and bulls that can be cut up, scissors, tape, glue, paper, pens

Instructions:

- To introduce the topic of genetics, ask members if they have a relative that looks like them and why. (If this line of questioning may disturb some of the members, focus on something like the kittens of a cat or the puppies of a dog to make the point.) Lead members, using questions, to the idea that each part of them is from someone else. They are a living puzzle made up of pieces of DNA, called genes.
- Then discuss heritability. Why did someone inherit a family hair colour, but not a bump on his or her ear? The point is that some traits are more easily passed on than others. Discuss what kind of traits a farmer would want his or her cows to pass on to their calves and why. Write these traits on chart paper.
- Now that the group has an idea about genetics, get them to build their own better cow using pictures of bulls and cows from breed magazines. Some members will just want to make a collage of good traits from both animals, while others may focus on milk production. The point is to get them thinking about all kinds of traits, and letting them discover what these traits are. For example, someone might notice the “numbers” in the ad and decide to include those in his or her picture of the better cow.
- After members are finished, have each of them share their ideas for a better cow with the group.

Debrief: Is it difficult to decide which traits you want in your cow! Why or why not? Farmers make decisions about genetics all the time. When and what kind of decisions do you have to make? How do you make them?



Activity: Cow Mating – You Make the Decisions

Purpose: This activity helps members decide the strengths and weaknesses of a cow and determine the best mating to complement her.

Age Group: Members 12 and over

Time Allotted: 30 minutes

Preparation & Equipment: Copies of the “You Make the Decisions” worksheet found on the following page, copies of current bull proofs (available from an Artificial Insemination unit or from the Canadian Dairy Network at www.cdn.ca) and pencils.

Instructions:

- Ask members to complete the worksheet given to them. Alternatively, to reduce photocopying costs, the activity could be done as a large group discussion.

Debrief: Did everyone pick the same bull for the cows? Allow members to debate their mating decisions. Remind them that no one is right or wrong.



Cow Mating – You Make the Decisions

Farmer Brown has checked his herd and found four cows that are ready to be bred. He looks at the records he keeps for each cow and makes these notes:

Annabelle – *acceptable size; well developed udder and mammary system, except rear udder; excellent feet and legs; milk production is a little low; general appearance isn't the best.*

From these notes, can you pick out three things that the farmer might want to improve on Annabelle's daughter? _____

Bessy – *small cow with an excellent mammary system; outstanding dairy character; sloping rump; small to average capacity; high fat production; low protein.*

From these notes, can you pick out three things that the farmer might want to improve on Bessy's daughter? _____

Clara – *very large cow; strong and capacious; weak udder attachments; poorly shaped mammary system; average milk production that is low in fat.*

From these notes, can you pick out three things that the farmer might want to improve on Clara's daughter? _____

Dora - *poor style and strength overall; lacks dairy character; excellent feet and legs; narrow rear udder attachment and weak suspensory ligaments; low milk volume; high fat and protein percentages.*

From these notes, can you pick out three things that the farmer might want to improve on Dora's daughter? _____

Now look at the bull proofs available and decide which bull Farmer Brown should use for each cow. Pick a different bull for each cow!

Dam	Sire Selected
Annabelle	
Bessy	
Clara	
Dora	



Activity: Genetic Improvement

Purpose: To familiarize members with the traits that cows are classified based on as well as whether improvement in those traits is seen from one generation to the next.

Age Group: All members

Time Alloted: 20 minutes

Preparation & Equipment: Prior to the meeting, find at least one set of dam and daughter pairs who are milking within the barn where the meeting is to be held. With a large club, finding more pairs and splitting members into smaller groups would be beneficial.

Instructions:

- Discuss with members that the goal of breeding dairy cattle is to improve the genetics of dairy cattle so that future generations have improved traits related to milk production, conformation, health and longevity. By looking at the dam in the pairs of animals that each group is assessing, the members will be able to see the excellent, satisfactory, and poor traits of the animal. When the farmer bred the cow, the goal was to improve the genetics to result in offspring that was better than the cow herself. By looking at the younger cow and comparing her to her dam, members can assess where genetic improvement has been made. Conformation comparisons can be performed by looking at the animals, while production and most health traits could be examined as another activity, using printed production records.
- Using the type traits indicated in the scorecard used in the Canadian classification system, as listed on the "Genetic Improvement" worksheet, place a checkmark in the box to show if the daughter shows genetic improvement, is the same, or shows no genetic improvement when compared to her mother.

Debrief: Overall, did the younger cow have better conformation traits than her dam? How would a farmer select a bull to improve conformation traits? Are all of the traits a result of genetics? Are some of them influenced by the environment and the food, care, and facilities available to the animals as they are being raised?



Genetic Improvement Worksheet

Trait	Improvement	No Change	No improvement (the next generation is poorer)
Rump – Rump Angle			
Rump – Pin Width			
Rump – Loin Strength			
Mammary System – Udder Depth			
Mammary System – Udder Texture			
Mammary System – Median Suspensory			
Mammary System – Fore Attachment			
Mammary System – Front Teat Placement			
Mammary System – Rear Attachment Height			
Mammary System – Rear Attachment Width			
Mammary System - Rear Teat Placement			
Mammary System – Teat Length			
Feet & Legs – Foot Angle			
Feet & Legs – Heel Depth			
Feet & Legs – Bone Quality			
Feet & Legs – Rear Legs Side View			
Feet & Legs – Rear Legs Rear View			
Dairy Strength - Stature			
Dairy Strength – Height at Front End			
Dairy Strength – Chest Width			
Dairy Strength – Body Depth			
Dairy Strength – Angularity			



Activity: Reading Bull Proofs

Purpose: Members can learn how to measure the genetic value of bulls and cows and improve their ability to select the right sires to breed their cows to.

Age Group: Brief review for senior members; Learning session for junior members

Time Allotted: 10 minutes for senior members; 20 minutes for junior members

Preparation & Equipment: copies of 4 bull proofs, paper and pencils

Instructions:

- Hand out the bull proofs to the members. Ask them what they think each category means. Help them come to the answer themselves by asking questions in response to their questions. The point is not to "tell" but to let them "discover." Ask them to think back to the traits they think farmers want to see in their cows. These traits are probably measured in a bull proof.
- After talking about each part of the bull proof, divide the members into small groups. The groups then find the answers to a series of questions: The best and worst bull in production, the best and worst bull in conformation, the bull with the highest and lowest repeatability level, etc. When they're finished, find out if *any* one bull ranked at the top of all the categories, or if they were pretty mixed.

Debrief: Why is it important to know how to read and use bull proofs? How do the proofs help farmers make genetic decisions? What kind of information do you use to help you make decisions (for instance, deciding which 4-H project animal to select)



Activity: The Facts of Life

Purpose: This activity introduces members to what the reproductive cycle is in cows and other animals, and helps them learn how to find information

Age Group: Junior members

Time Allotted: 50 minutes

Preparation & Equipment: “The Facts of Life Flash Cards” cut out from the following page, resource materials such as encyclopedias, CD Rom Encyclopedia, other relevant books, etc., paper and pencils.

Instructions:

- To introduce the reproductive cycle to members without lecturing them from the manual, let them actively learn using the flash cards on the following page. Hold the card up so the term is showing and you can read the definition on the back. Let the group work together to come up with the correct definition for each flash card term, If you think the group may have difficulty coming up with definitions, print the definitions out on a large sheet of paper and post it for them to select definitions from. After they've matched terms and definitions, discuss any questions about these reproductive terms.
- After they have learned about the facts of life in dairy animals, give the group a list of other animals from below and have them find out the age at puberty (or breeding) and the gestation period for each animal from the resource books provided. When they've found all the animals, have the members place the animals in separate timelines: one according to puberty and one according to gestation period. Use pieces of paper taped together to give members enough room to create a timeline. (Hint: You can split the list up among the members if you need the activity done faster.)

Animal	Age at puberty (breeding)	Gestation period
rabbit	3-4 months	38 days
elephant	8-15 years	20-22 months
cattle	8-12 months	279-290 days
dog	6-8 months	58-63 days
goat	7-8 months	151 days
horse	1 year	338-345 days
pig	5-8 months	112-115 days
mouse	28-49 days	18-20 days
lion	3-4 years	95-110 days
fruit fly*	11 days	11 days
killer whale	5-6 years	12-16 months

*Fruit flies develop from eggs laid by adult flies. It takes 11 days for the eggs to develop into adults. These adults are immediately able to breed and lay more eggs.

- Once the members have completed drawing a timeline for the animals, they can draw a specific timeline for a cow's reproductive cycle using information such as the 21-day estrus cycle, the signs of heat, when a cow should be bred and so on. If the group is large, split it into smaller groups so everyone gets a chance to contribute.

Debrief: Did you learn something from your research that you didn't know before? How did the timeline help you organize your research?



The Facts of Life Flash Cards

Copy and cut the cards and fold them so that the definition is hidden.

<p>21-day cycle a cow's body goes through to produce eggs</p>	<p>The signs the cow shows that she's ready to be bred</p>
<p>Estrus Cycle</p>	<p>Heat (estrus)</p>
<p>Place in a cow's body that produces eggs</p>	<p>The period that the calf grows in the cow's uterus (approximately 9 months)</p>
<p>Ovaries</p>	<p>Gestation</p>
<p>The cell that the cow produces. If it's fertilized by the sperm it grows into a calf.</p>	<p>Inserting a special straw filled with semen into the cow's uterus. The sperm then fertilize the egg.</p>
<p>Egg</p>	<p>Artificial Insemination</p>
<p>The cell from the sire that fertilizes the egg</p>	<p>A tube connecting the ovary to the uterus where an egg is fertilized by the sperm</p>
<p>Sperm</p>	<p>Oviduct</p>
<p>Place in a cow's body where a fertilized egg grows into a calf</p>	<p>When an egg is sent into the oviduct to wait to be fertilized</p>
<p>Uterus</p>	<p>Ovulation</p>



Activity: AI vs. The Farm Bull

Purpose: To introduce members to artificial insemination and to point out the reasons why AI is used in breeding programs.

Age Group: All members

Time Allotted: 10 minutes

Preparation & Equipment: Chart paper and markers

Instructions:

- Ask members to brainstorm all of the reasons why someone would use AI over a farm bull and vice versa. Write the answers on the chart paper. Once you have a large list, have the group place the reasons into lists: pros and cons of using AI, pros and cons of using a farm bull. From these lists, the group should make a decision about whether using AI is the way to go for a farm's breeding program.

Debrief: Was it easier or harder to make up your mind about AI and farm bulls after seeing a list of pros and cons? Why is it a good idea to make decisions based on pros and cons?



Activity: Breeding Trivia

Purpose: To help members learn and review information about breeding through a trivia game they design themselves

Age Group: Senior members

Time Allotted: 40 minutes

Preparation & Equipment: resources on breeding, paper and pens

Instructions:

- Divide the group into three teams. Each team has to create 10 questions related to breeding goals, heat detection and AI.
- Once the teams have completed their questions they get to ask them to the other teams. Teams get points by having the correct answer (2) and for having a good question (2). The first team asks the second team a question. Then, the third team judges the quality of the question, while the first team judges whether the answer is correct. The point is not to have the most obscure question, but the most intelligent, thoughtful or witty question.

Debrief: Is it easier to learn something when you have the answer questions about the subject, or when you have to research the subject to create questions for others? Why do you think this is? Why is research a useful tool? At what other times do you use your research skills?



Activity: Artificial Insemination Demonstration

Purpose: To give members a better idea about the processes of semen handling and artificial insemination

Age Group: All members

Time Allotted: 30 minutes

Preparation: Invite an AI technician to demonstrate how to breed a cow.

Instructions:

- Make sure that each member gets to look at the AI equipment the technician uses.

Debrief: Encourage members to ask questions. Do they think AI is difficult or easy? Can they remember the steps involved? What is important to remember about semen handling? What does the AI technician do to help prevent the spread of diseases from one farm to another?

Alternate Activity Ideas:

- **Palpation Practice** – If a cull cow was available, members could practice palpations, to see if they could feel what the AI technician is experiencing when breeding an animal. The members could also see if they could feel the uterine horns, ovaries, cervix, etc.
- **Examine a Reproductive Tract** – A reproductive tract may be available from a veterinarian or abattoir. Members should be asked to identify the parts of the reproductive tract. They could also practice AI by threading the rod through the vagina and cervix.



Activity: Build a Ruminant Reproductive System

Purpose: For members to familiarize themselves with the structure and components of the different parts of the reproductive tract.

Age Group: All members

Time Allotted: 30 minutes

Preparation & Equipment: Collect household items that members could use to construct a mock digestive system, such as tape, balloons, paper towel or toilet paper rolls, plastic bags, paper clips, fasteners, elastics, money rollers, straws, popsicle sticks, etc.

Instructions:

- Split members into groups of four or five. Give each group a number of items to build their reproductive system with
- Give members 20 minutes to build a digestive system with identifiable components
- Have a contest at the end to see which group could build some of the following:
 - o Most lifelike looking system
 - o Include all parts of the reproductive system
 - o Flow through design to show the passage of ova to embryo to fetus

Debrief: What are the parts of the reproductive system? How does the egg from the cow move through the system? Did everyone in your group participate in building the system?



Activity: The Successful Calving Board Game

Purpose: To let members learn about the unexpected possibilities that come with calving.

Age Group: Junior Members

Time Allotted: 20 minutes

Preparation & Equipment: Copies of the board game on the next page - enough for every two or three members, one die per group, and one game marker per member (these could be other board game pieces, coins of different denominations, or paper markers the members make themselves ahead of time - use your imagination!).

Instructions:

- Put the members into groups of two or three, give each member a playing piece (or have them make their own) and give each group a die.
- The member who gets to the finish line first, wins!

Debrief: What does this game tell you about the calving process?

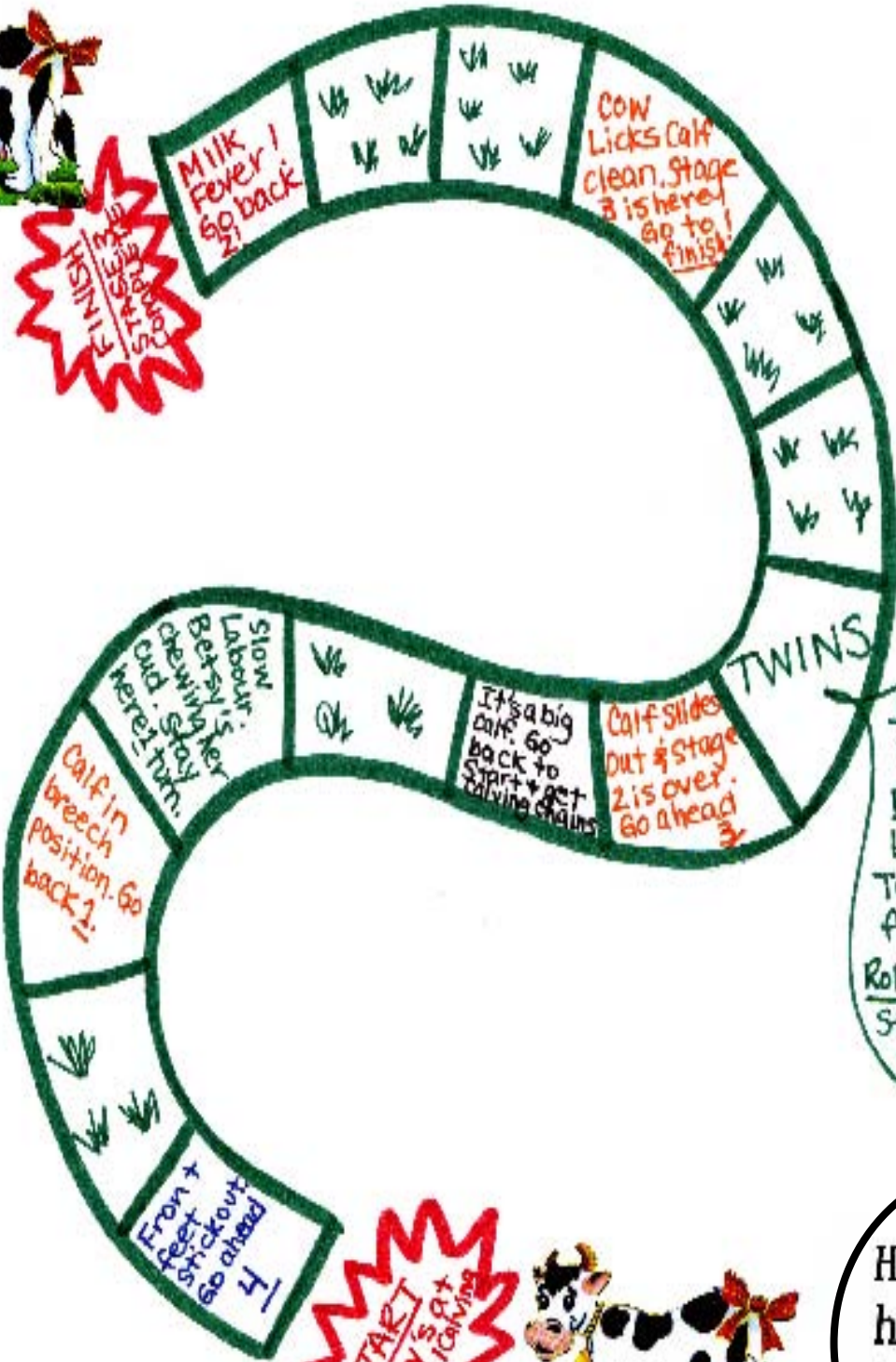


The Successful Calving Board Game

The first player from stage 1 calving to a healthy cow and calf wins!



FINISH
Betsy's
Lucky
Cow
Wins
the
Game!



For Twins
Roll die.
Even #: 2 heifers
GO AHEAD 5
Roll #1: Bull & Heifer. **GO BACK TO START. A FREEMARTIN!**
Roll 3 or 5: 2 Bulls
Stay here until next turn.

START
Betsy's at
stage 1 calving



Help Betsy have a healthy calf!



Activity: Stages of Calving

Purpose: To expose members to the signs and stages of calving

Age Group: All members

Time Allotted: 20 minutes

Preparation & Equipment: A video of a cow calving (a senior member could do this as a project). If no video is available, this could be done as a group discussion topic.

Instructions:

- While it would be ideal to watch a cow giving birth, it is not feasible to schedule a 4-H meeting around a calving. By showing a video, members can see what an actual calving looks like and sounds like.
- Before the screening of the video, brainstorm the different steps in the stages of calving. Write them on chart paper so that all the members can see the stages during the video
- Ask the members to watch for signs in the video of the stages of calving
- Once the video is over, ask the group to point out the stages of calving they witnessed

Debrief: What is the most interesting thing you learned about a calf being born?



Activity: Calf Pulling Demonstration Series

Purpose: To introduce the concept of helping a cow through a difficult birth with calving chains or a calf puller

Age Group: All members

Time Allotted: 10 minutes for chain demonstration, 10 minutes for puller demonstration

Preparation & Equipment: a set of calving chains and/or a calf puller

Instructions:

Calving chains

- Demonstrate how to properly use calving chains. As one of the members to help with the demonstration by playing “the calf”
- Gently put the calving chains on the member to show how it is one properly. Then, pass the chains around for each member to hold

Calf puller

- Demonstrate how to properly use a calf puller
- Give each member a turn using the calf puller. They can get the feel for how much weight should and shouldn't be put into pulling the calf from the cow

Debrief: When might a farmer use calving chains or a calf puller? When should the farmer decide that it's time to call the vet?



Activity: Identifying a Newborn Calf

Purpose: To show members the importance of keeping track of dairy animals from the time they are born and the proper way to identify animals

Age Group: All members

Time Allotted: 10 minutes

Preparation & Equipment: different types of identification equipment should be laid out on a table: tattoo gun and dye, ear tags and ear tagger, neck and leg chains, branding iron, photographs, drawings

Instructions:

- Ask members to try to identify all of the ID equipment and whether it is a permanent or non-permanent form of calf identification.

Debrief: Why do you think there are so many ways to identify newborn calves? Why are these records important? In what other areas of your life is record keeping important? Why?

Alternate Activity if Live Animal is Available: If an animal is available, the host farmer could demonstrate how to tattoo or tag by doing a live demonstration. Emphasis should be placed on proper location of tags so they don't rip out as easily.



Activity: Caring for a Newborn Calf

Purpose: To help members understand the steps in caring for newborns as well as to practice co-operation.

Age Group: All members

Time Allotted: 15 minutes

Preparation & Equipment: set of cards copied and cut out from the "Caring for a Newborn Calf" worksheet on the following page.

Instructions:

- Hand out a "What" card to half of the members and a "Why" card to the other half of the members (Hint: If the group is too large, split it into two and have each group carry out the following steps separately.)
- Each member now has to find the person carrying the card that matches his or her "Why" or "What" card.
- Once each member has found his or her partner, the entire group needs to work together to put the steps of caring for a newborn calf in the right order. (Note: Refer to the Breeding and Reproduction section of the 4-H Dairy manual for newborn calf care information; the steps are also in order on the original "Caring for a Newborn Calf" worksheet on the following page that is to be copied and cut up). For example, the pair holding the "Move the cow to a clean maternity pen" pair is number one. As they assign an order to a pair, that pair should sit behind the pair that has the step previous to them. In the end, there will be a double row of members representing, in order, the steps in caring for newborn calves. Have each pair read out their cards in order.

Debrief: Are there any other steps that are done on the members' own farms (i.e. vaccinations or vitamins given after birth, etc.) Was this activity easy or hard? Why? Were you able to co-operate to finish the activity? Name another time that you needed to co-operate with someone to get a job done.



Caring for a Newborn Calf Worksheet

Cut out each "What" and "Why" card.

What? Move the cow to a clean maternity pen	Why? Stops the cow from coming into contact with germs
What? Wash your hands	Why? Prevents germs from spreading from cow to cow and to the calf
What? Help the cow to calve if needed	Why? Lessens calving time and stress on the animals
What? Make sure the calf's nostrils are clear	Why? Helps the calf breathe
What? Tickle the calf's nostril	Why? Stimulates breathing
What? Dry the calf	Why? Stimulates blood circulation and stops the calf from catching cold
What? Dip the calf's navel with iodine	Why? Prevents infection
What? Feed the calf colostrum	Why? Gives the calf antibodies to help fight disease
What? Identify the calf	Why? Purebred calves need to be properly identified and you must be able to keep track of the calf



Activity: Making a Calving Diagnosis

Purpose: To help members understand all of the possible situations they may face when helping a cow to calve. It also develops their decision making skills

Age Group: Senior Members

Time Allotted: 25 minutes

Preparation & Equipment: copies of the “Making a Diagnosis” worksheet on the following page, resources on calving problems, including the appropriate part from the Breeding & Reproduction Section of the 4-H Dairy Manual

Instructions:

- Divide the members into groups of two or three. Hand each group a copy of the “Making a Diagnosis” worksheet.
- Set the situation. The members own farms and are confronted with a number of calving situations during the year. Once a month, they get together with other farmers to discuss the calving problems they have had and whether or not they made the right diagnosis and decisions. The small groups are to fill out the handout together. Make the “Actions” listed as detailed as possible. Once they’ve all finished, they can get together in the larger group and discuss their decisions.

Debrief: How can farmers better prepare themselves to help cows calve? What would have made the decision making process easier? Did discussing the problems with the larger group make it easier to come to a conclusion or harder?

Answers for Making a Diagnosis Activity:

SITUATION	DIAGNOSIS	ACTION
Upon examining the cow, you feel only the calf’s head	The calf is delivering with both its legs bent backwards	Try to reposition the calf. Use the proper steps listed in the 4-H Manual to do so. Call the vet if repositioning doesn’t work.
A cow has been in Stage 1 labour for awhile and doesn’t seem to be moving to Stage 2	The cow could have a uterine torsion	Check for spiral folds in the vagina and if she’s dilated. If not, call the vet immediately.
A mature cow is in her third hour of Stage 2 calving	Stage 2 usually takes two hours. The cow could be having trouble.	Examine the cow using the procedure listed in the 4-H manual. If the calf isn’t in the proper position, reposition it or call the vet.
Upon examining the cow, you feel the calf’s tail	This is a breech birth. The calf is being born backwards.	Check the calf’s positioning. Then reposition her and get the calf out. Otherwise, she could be smothered.
A heifer is in her third hour of Stage 2 Calving	This is a normal labour. Heifers usually take three hours, while mature cows take two hours.	Keep an eye on the cow, but the calf should deliver naturally.
The cow delivers a small calf very quickly	The cow could be having twins	Check for a twin. The cow may need help to deliver the twin, so don’t leave the animal unattended.

Making a Diagnosis Worksheet

<i>SITUATION</i>	<i>DIAGNOSIS</i>	<i>ACTION</i>
Upon examining the cow, you can feel only the calf's head		
A cow has been in Stage 1 labour for awhile and doesn't seem to be moving to Stage 2		
A mature cow is in her third hour of Stage 2 calving		
Upon examining the cow, you feel the calf's tail		
A heifer is in her third hour of Stage 2 Calving		
The cow delivers a small calf very quickly		



Activity: Dystocia Drama

Purpose: To familiarize members with the different calving positions they may be presented with

Age Group: Junior members

Time Allotted: 10 minutes

Preparation & Equipment: None

Instructions:

- Review the proper calving position with members and that difficult calvings are referred to as dystocia
- Review problem calving positions with the members (as pictured on the following page)
- Call out a type of problem calving and ask members to show an action for that position (i.e. ideal calving would be members sticking their arms forward with their head resting on their arms, breech would be standing backwards, legs sticking behind them, etc.)
- Repeat the types of positions in random orders to see if members can remember the orientation (and action) for that calving position

Debrief: Ask the members what they might try to do if the calf was not in the proper position (i.e. reposition the calf, call the vet, etc.). Can they remember any difficult calvings on their farm or a neighbour's farm?

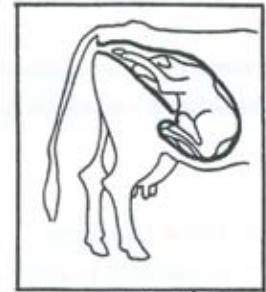


Problem Calvings

Dystocia (Difficult Birth)

This occurs when the fetus does not come through the birth canal easily. This could be because the fetus is too large for the birth canal or because the fetus is in an abnormal position. Dystocia can result in a sick cow and / or a fetus that is stillborn (dead at birth) or weak.

The normal position for the calf at calving is facing the birth canal, with the front feet entering the birth canal first, followed by the head, which rests on the front feet. Calves may be situated in other positions:



Normal Position

- A. Head first with one or both legs bent backward
- B. Head and one leg first, with the other leg crossed over her neck
- C. Front feet first with the head twisted backwards
- D. Front feet first with the head bent down between the front legs
- E. Breech, backwards with the hind feet first
- F. Breech, with the rear legs tucked under the calf's body
- G. Breech, upside down, feet facing up
- H. Hiplock – the calf is stuck at the hips

