

Photo by Mike Sporcic, USDA Natural Resources Conservation Service.

4-H Dairy Project Activity Guide



Activity Guide Introduction

This collection of activities is designed as a companion for your 4-H Dairy Resource Guide. It is organized in the same sectional order as the Resource Guide, arranged in the following sections:

- General Activities
- Health
- Breeding and Reproduction
- Nutrition
- Housing, Equipment and Environment
- Milk Production and Marketing
- Managing the Farm Business

How to Use the Activity Guide

At club meetings, these activities can be used in combination with discussion of resource material to teach members in a hands-on, interactive learning environment.

At the beginning of each topic section of this guide is a list of roll call suggestions, potential guest speakers and a list of potential take home or project assignments that members could be asked to complete or that could be a component of a Youth Leader Project.

Most activities are broken down into the following sections to assist you in organizing and preparing for club activities:

- **Purpose** – briefly outlines the main goal of the activity
- **Age Group** – indicates the age of members to whom that the activity should be targeted. It is important to note that some members may have learning or maturity levels above or below their age and that the success of some activities may also depend on the interest and experience of members, regardless of age.
- **Time Allotted** – the expected time required to complete the activity during club time.
- **Preparation & Equipment** – a list of supplies needed to complete the activity and/or preparation that must be done in advance of the meeting to run the activity.
- **Instructions** – Directions to give members to complete the activity.
- **Debrief** – This section is very important. While completing many of the activities is a fun experience, it is important that the members are learning something as well. The Debrief section links the activity to information that can be found in the Resource Guide and asks questions to help members understand the activity and its links to the dairy industry.

Another Tool to Help You Plan Your Meetings:

At the end of the Activity Guide, you will find two indexes for the activities, one sorted by topic, and the other by age group. There is a date column included, which you can use to record the date the activity was last used. Activities that are recommended activities are marked with an *.



Potential Guest Speakers

- Experienced farmers / host farmers
- Government dairy specialists
- People employed in various aspects of the dairy industry
- County Dairy Educator
- Past participants from dairy opportunities

General Roll Calls

- Why did you join the dairy club this year?
- What is one thing you would like to learn in the dairy club this year?
- What is one goal that you have as a member of the dairy club this year? (Note: does not have to be a show result or qualification, could be something new learned)
- Name one part of the dairy cow and show the other members where it is located on the animal (don't pick a part that another member has already said).
- Name one trait that is judged on a dairy cow and a descriptive term that is used to describe that trait.
- What is one way that you have helped to take care of an animal?
- What is the most important thing you consider when selecting a 4-H dairy calf?
- Name one thing to remember when fitting and showing a dairy animal.
- Tell us what your calf's name and what her sire's name is.
- Tell us one thing that has happened while you have been training your calf at home.
- What is one conformation trait that is good about your calf?
- What is something that could be improved about your calf?

Project or Take Home Activity Ideas

- Compare how your past 4-H calf (or calves) performed at the show to how well she milked on your farm. Were her parent averages a good predictor of her outcome?
- Attend a cattle auction. Pick out ten animals and write down how much you think each one will sell for. Compare your prices with the actual selling prices.



Internet Activities

There are lots of great websites that you can use for your Dairy club. If you have computer access during your meetings, you can incorporate them - try running tournaments for some of the games! Or, encourage members to try them between meetings.

Agrimania - <http://www.ca.uky.edu/agripedia/AGMANIA/> - University of Kentucky Website. Includes quizzes for feed identification, livestock and meat judging, and livestock identification games!

Holstein Canada - Laugh and Learn! - <http://www.holstein.ca/english/Laugh/index.asp>. Includes jokes, a cow parts label game, and an interactive 'Cow's Life Adventure'.

FunTrivia Quizzes - http://www.funtrivia.com/quizzes/animals/other_domestic_animals/cattle.html, and <http://www.funtrivia.com/playquiz/quiz4395650b168.html> - includes quizzes on many aspects of the dairy and cattle industry.

Hoard's Dairyman Youth Corner - http://www.hoards.com/youth_corner/youth_corner_index.html. www.uwex.edu/ces/dairyouth/ - includes quizzes for youth and some great judging activities & resources.

Dairy Activity Page from the University of Tennessee - www.utextension.utk.edu/4H/projects/activities/Dairy-W059.pdf - includes games and activities.

Dairy Interactive Page - <http://www.ces.ncsu.edu/chatham/ag/dairy/DIPIndex.htm> - includes a quiz (with an American focus).

Moo Milk Website - www.moomilk.com - includes a virtual tour (The Story of Milk), quizzes, and contests.

These links may eventually be out of date - and you never know when a new site might be added that would be great for your club! Be sure to search the web once in awhile to see what other exciting resources and activities are out there.

Ontario Farm Animal Council Virtual Farm Tours - www.farmissues.com



Activity: Label the Parts

Purpose: To teach members the names of the parts of the cow.

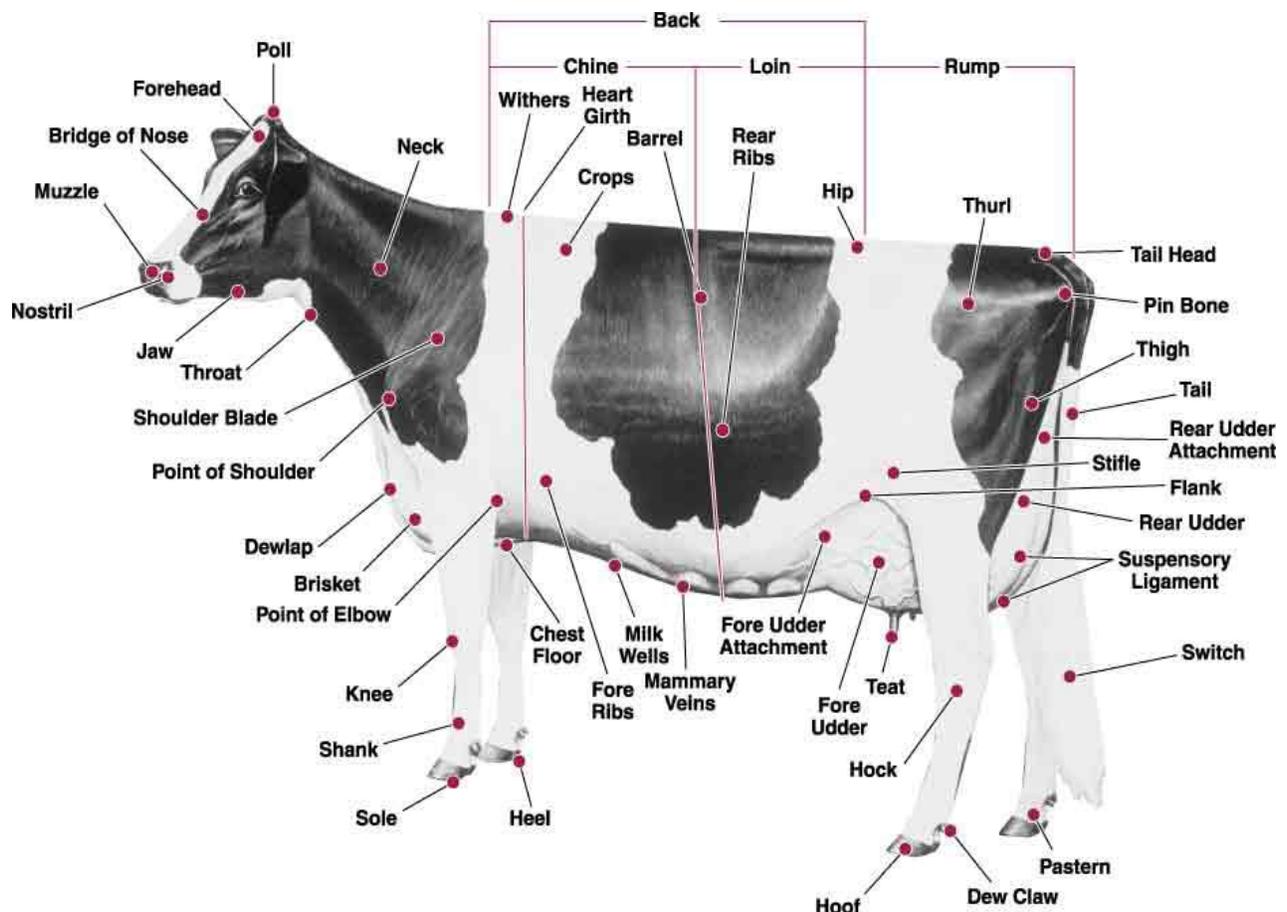
Age Group: All ages

Time Allotted: 15 minutes; this is an activity that should be a component of every dairy club

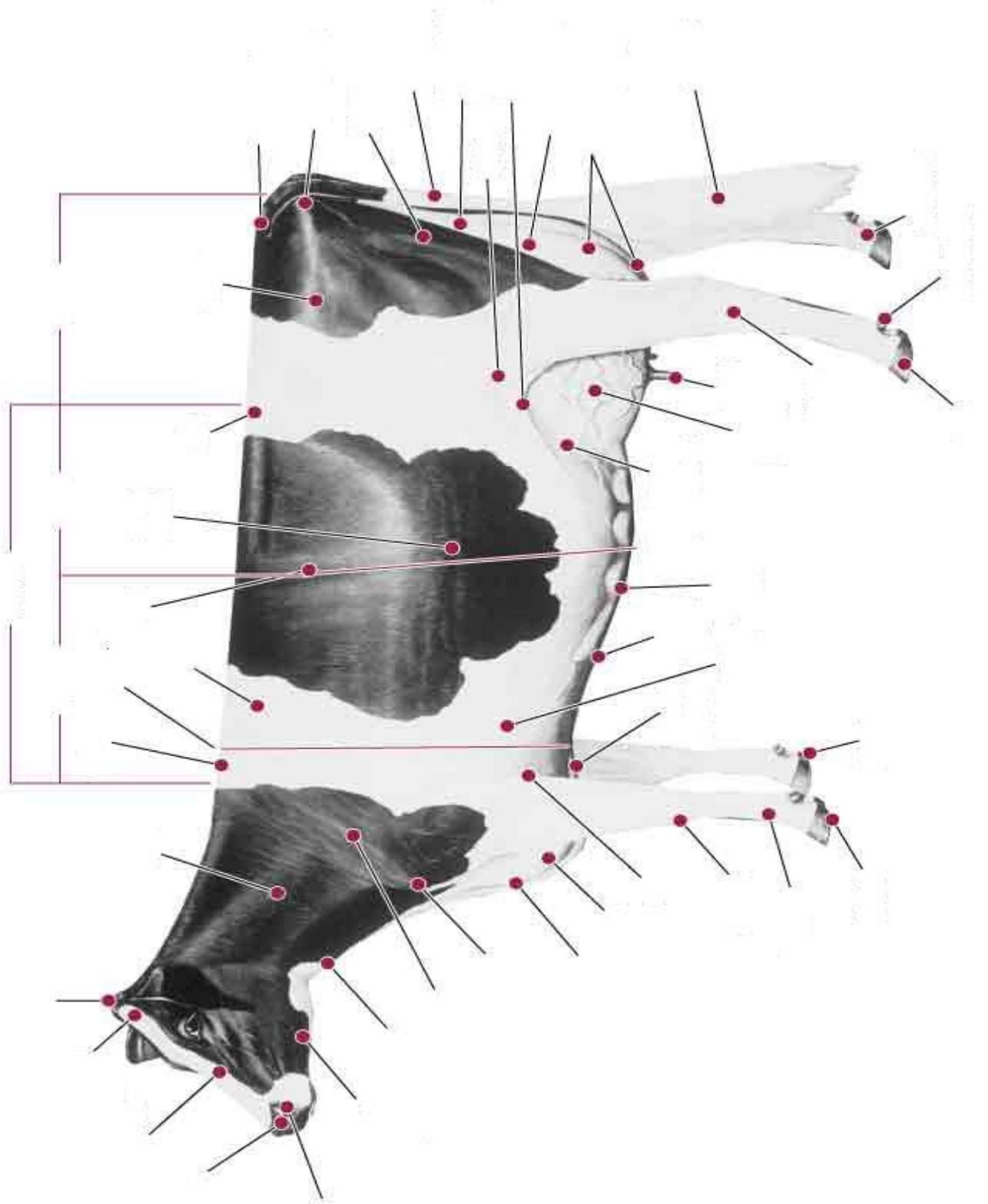
Preparation & Equipment/Instructions:

There are a few ways to do this activity – and an activity that can be done in different ways over several meetings - for example, focus on one section of the body at a time.

1. Members are given “Label the Cow” worksheets that are found on the following page and are asked to label the parts.
2. Members could be asked to point out specific body parts on a live animal or poster of a live animal. Conversely, if the leader points to a location on the animal, the members could be required to name the part.
3. Members could be given slips of paper and be asked to put them on the proper location on the animal.
4. If a quiet animal is available, put Post-It Note numbers on different parts of her and ask members to write down the body part that corresponds to each number.

Answers:

Label the Cow



Activity: Body Parts Crossword**Purpose:** To review the parts of the cow**Age Group:** All members**Preparation & Equipment:** copies of "Body Parts" crossword puzzle on the following page, pencils**Instructions:**

- Hand out copies of crossword puzzle for members to complete; could be done during the meeting or as a take home activity that would be reviewed at the following meeting

Debrief: Take up answers to the crossword puzzle and answer any questions members may have relating to it.

Answers:

Across:

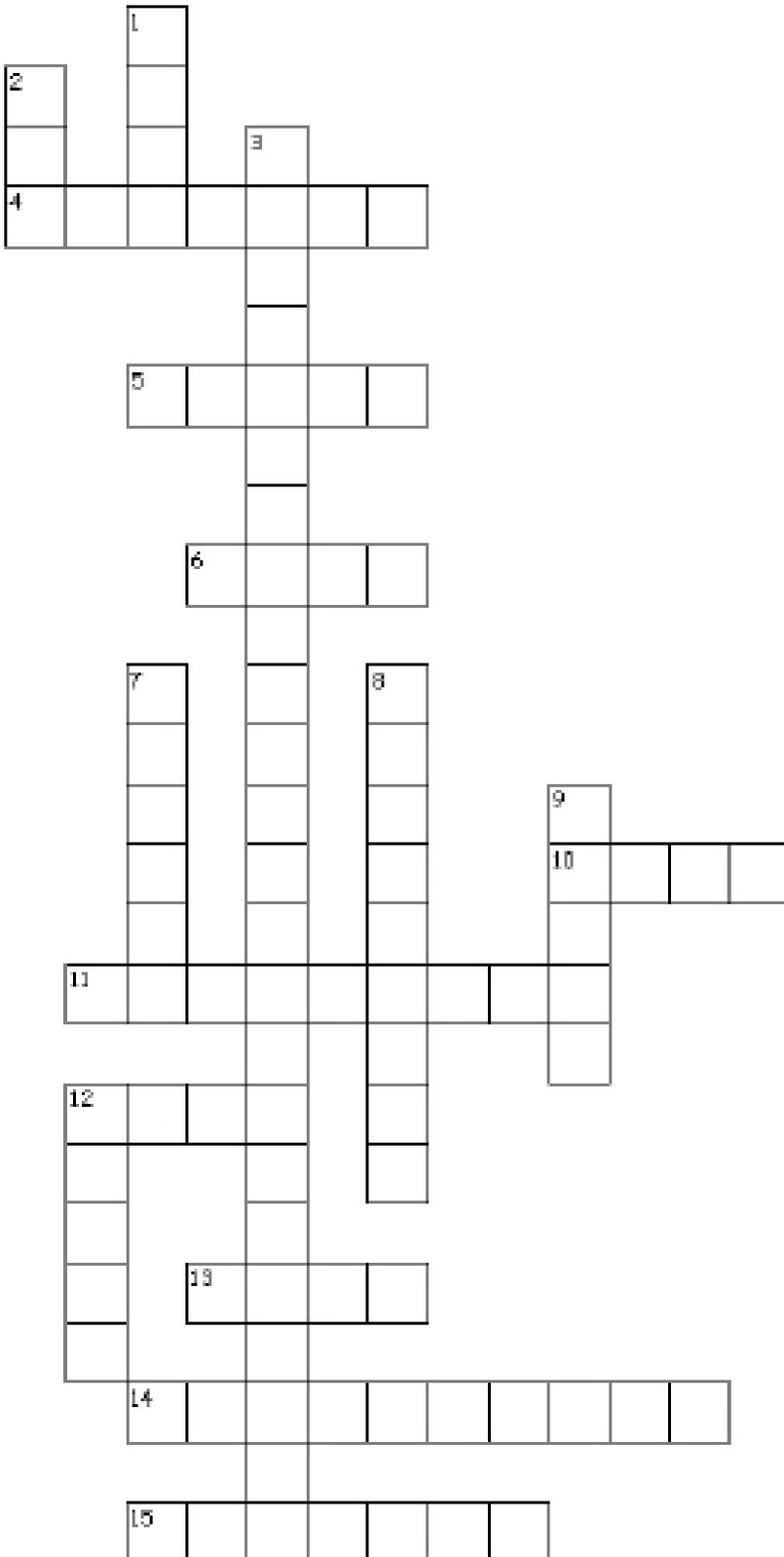
4. pastern
5. teats
6. rump
10. hoof
11. rear udder
12. tail
13. back
14. chest floor
15. withers

Down:

1. ribs
2. hip
3. median suspensory ligament
7. muzzle
8. fore udder
9. thurl
12. thigh



Body Parts Crossword



- Across
- 4. acts like a human ankle in walking
 - 5. correct size, shape and spacing help avoid injury and make milking easier
 - 6. correct structure helps ease of calving
 - 10. supports the leg and acts like a shoe
 - 11. its attachment should be high and wide
 - 12. a kind of "fly-swatter"
 - 13. contains the spine
 - 14. space for heart and lungs
 - 15. sharp area above the shoulders
- Down
- 1. form the barrel to hold the lungs and other organs
 - 2. joint controlling rear legs
 - 3. should form a deep crease in the rear udder
 - 7. the wider this is, the more she can eat
 - 8. front part of the udder
 - 9. bone between the hip and pin
 - 12. this part of the leg is thin on a "milky" cow



Answers to Cow Body Parts Crossword

Puzzle

Across

- 4. pastern
- 5. teat
- 6. rump
- 10. hoof
- 11. rear udder
- 12. tail
- 13. back
- 14. chest floor
- 15. withers

Down

- 1. ribs
- 2. hip
- 3. median suspensory ligament
- 7. muzzle
- 8. fore udder
- 9. thurl
- 12. shank



Activity: Judging Dairy Cattle

Purpose: To practice decision making, public speaking and self-confidence skills. To teach members about the ideal dairy cow.

Age Group: All members

Preparation & Equipment: Dairy cattle scorecard, copies of the parts of the cow page from the Activity Manual, copies of the reasons worksheet on the following page, pencils.

Time Allotted: 20 minutes

Instructions:

- Ask members to refer to the scorecard for judging dairy cattle that can be found in the 4-H Dairy Project Resource Manual. Discuss the parts of a cow and the desirable traits, going over the body of a cow as an example.
- Give members time to judge the class and formulate their reasons. For beginning members, a copy of the “Reasons Worksheet” found on the following page will be helpful to introduce them to the correct format of giving reasons. More advanced members should be able to formulate their own notes.
- This activity can be done several times in different meetings - to provide variation, focus on one breed at a time, or one part of the scorecard per meeting.

Debrief:

- Ask members what their placings were. How many members started with the same winner? How many had the bottom placing correct? Ask why someone placed one animal over another.
- Give members who are willing the opportunity to share their reasons – encourage members to do so without referring to their notes. Emphasize that judging is based on opinion and the reasons to support the placing actually matter more than the placings themselves.



REASONS WORKSHEET

Sir/Madam, I place this class of

I place _____ on the top because

I place _____ over _____ because

I place _____ over _____ because

I place _____ over _____ because

For these reasons, I place this class of

____, _____, _____, _____



Activity: The Judge's Corner – Check out those Mammary Systems

Purpose: When judging dairy cattle, the udder is the most important composite trait to assess, and is worth more on the dairy cattle judging scorecard than any other category. This activity teaches members to analyze the udders of two different dairy animals and is a good introduction to judging because it is less intimidating than judging an entire animal.

Age Group: All members

Time Allotted: 10 minutes

Preparation & Equipment: two or more cows for a comparison of their udders, paper and pencils, copies of the chart on the next page.

Instructions:

- Review the mammary system component of the Dairy Cattle Scorecard and the desirable traits judges look for when evaluating mammary systems. Then, ask the members to select which cow has more desirable characteristics based on the chart at the bottom of this activity.

Debrief: Is it easier to judge one part of a cow than the entire animal? Which animal has a better udder? Ask if anyone would like to give reasons why they would place one of the mammary systems over another if they were judging a class?

Alternatives:

- Use 4 cows instead of 2
- Ask members to judge the mammary systems and give formal reasons
- Instead of just using udders, other components of the animal could be assessed such as rump, feet and legs or dairy strength



The Judge's Corner - Worksheet

Look at each item in the chart below and give a point to the cow that is the best example of that characteristic:

Characteristic	Cow A	Cow B
Well-balanced udder with uniform quarters (size and shape)		
Quarters show a lot of veination		
Teats of moderate length and diameter		
Teats square under each quarter, slightly to the inside of the quarter		
Rear udder attached high and wide		
Median suspensory ligament is strong, showing definite cleaving between the halves of the udder		
Fore udder attachment is long and strong		
Udder is soft and pliable		



Activity: Functional Conformation of Dairy Cattle – Activities for Holstein Canada DVD

Purpose: To introduce members to the anatomy of dairy cattle and how conformation traits are related to the physiology of the dairy cow.

Age Group: Members 12 and over

Time Allotted: The entire video and discussions would take up approximately 2 hours to do properly. Viewing sections would be more practical (i.e. spend 15 minutes reviewing the rump section at a meeting)

Preparation & Equipment: Copy of “Functional Conformation of Dairy Cattle” DVD produced by Holstein Canada, computer, projector and screen if available.

Instructions: This DVD could be utilized in several ways:

- During the video, members could be given questions to answer. Sample questions and answers are provided on the following pages.
- After watching parts of the video, members could be given questions to answer or the entire group could discuss answers as a whole. Sample review questions and answers are provided on the following pages.
- After watching a part of the video on a particular composite trait, members could be asked to:
 - o Look at some cows in a barn and assess linear scores for traits related to that composite trait
 - o Judge a class of cows only looking at that particular trait (i.e. judge a class of rumps or mammary systems)
 - o Members could be asked to view cows in a barn and find examples of different defective traits, such as wry tails, recessed tailheads, weak crops, short fore udders, etc. The group could review each of their answers together.

General Conformation Review Questions:

1. Why is conformation appraisal important? *Answer: It helps develop animals that are more durable and functional; high production with low maintenance costs, long trouble-free lifetimes, greater profit for the dairy herd.*
2. How are traits assessed? *Answer: Traits are assessed by taking measurements or by rating them on a linear code (1-9)*
3. How many descriptive traits are assessed? *Answer: 24*
4. What are the four composite traits that the descriptive traits belong to? *Answer: Rump, Mammary System, Feet and Legs and Dairy Strength*
5. What is the highest numerical classification score that a cow can receive in Canada? *Answer: EX 97 points*
6. How many calves must a cow have to be classified Excellent? *Answer: three natural calvings*
7. What trends in milk production do you see as cows have higher final conformation scores? *Answer:*



Average production increases with each step in Final Score. High classifying cows make more milk, fat and protein than cows that classify poorly.

Mammary System Review Questions:

1. Where does the suspensory apparatus of the udder attach to the cow? *Answer: The base of the pelvis (40% of the attachment) and the midline of the body wall (60% of the attachment).*
2. What are the main support structures of the udder? *Answer: The lateral suspensory ligaments on each side of the udder and the medial suspensory ligament in the middle of the udder.*
3. Where do the median and lateral ligaments join together? *Answer: The ligaments become continuous (join) at the udder attachment.*
4. How many ligaments suspend the udder? *Answer: There are four ligaments – two lateral and two medial suspensory ligaments (left and right of each).*
5. What ligament forms the cleft between the halves of the udder? *Answer: The medial suspensory ligament.*
6. How can you tell if a cow has a strong medial suspensory ligament? *Answer: The teats are closer to the centre of the udder and the cleft between the halves of the udder is more defined.*
7. What characteristics are important for the development of a high and wide rear udder? *Answer: A wide pelvis and clean thighs.*
8. In addition to the suspensory ligaments, what helps to support the udder? *Answer: The skin and connective tissue.*
9. How is the height of the rear udder defined? *Answer: The distance from the vulva to the top of the milk secreting tissue (top of the supramammary lymph nodes).*
10. If the pelvis is narrow and the animal's thighs are not clean, what is the affect on the medial suspensory ligaments? *Answer: There is a lot of stress on the ligament because of downward and forward pressure on the udder.*
11. Most support for the fore udder comes from where? *Answer: Attachment of the median suspensory ligament to the body wall.*
12. What happens if the body wall is weak and sags to a vertical position? *Answer: The fore udder attachment is shorter and the udder becomes more pendulous.*
13. How much blood must flow through the udder to produce each litre of milk? *Answer: About 500 litres.*
14. How is udder depth measured? *Answer: The distance from the mid-point of the hock to the lowest point on the floor of the udder.*
15. Shallow udders are beneficial because they help keep udders free from contamination and injury. Why should an udder not be too shallow? *Answer: Because an udder that is too shallow does not have the capacity to produce a lot of milk.*
16. Why are soft, supple udders that are free from fleshiness more desirable? *Answer: They milk out more completely and are less susceptible to disease than fleshy udders.*
17. What is a weak or loose udder attachment a sign of? *Answer: An udder that will not last for very*



many lactations.

18. What can an outside teat placement be a sign of? *Answer: A weak or damaged rear udder attachment.*
19. How do you measure rear attachment width? *Answer: The width of the udder at the height of the supermammary lymph nodes.*
20. How do you measure teat placement? *Answer: The distance between the teat location and the centre of the udder.*
21. Teat placement squarely under the udder, slightly to the inside of the quarters is ideal. What problems result from teats that are too close or too far apart? *Answer: It is harder to attach milking equipment and milk out the cow.*
22. How do you measure teat length? *Answer: The average length of the rear teats. Rear teat length has a strong correlation with fore teat length.*
23. What are some poor udder characteristics that lower mammary system conformation scores? *Answer: Tilt, reverse tilt, short fore udder, short rear, lack of udder shape, unbalanced quarter, blind quarter, webbed teat, front teats back and rear teats back.*
24. What are the linear traits assessed for the mammary system? *Answer: Udder depth, udder texture, median suspensory, fore attachment, front teat placement, rear attachment height, rear attachment width, rear teat placement and teat length.*

Feet & Legs Review Questions:

1. What is locomotion and what is it influenced by? *Answer: Locomotion is the cow's ability to walk normally and it is influenced by the presence or absence of pain in the foot or leg, foot and leg conformation and the surface she is walking on.*
2. What are the bones in the hoof called? *Answer: The bones in the hoof are the 1st phalynx, 2nd phalynx (pastern) and 3^d phalynx (coffin bone).*
3. What is the white line in the hoof? *Answer: The white line is the area where the sole and the wall of the hoof come together.*
4. What should be the normal angle of the hock, which is controlled by the balance between the flexor and extendor tendons? *Answer: 155°*
5. What types of undesirable swelling occur in the hock? *Answer: Swelling on the outside of the hock from a fluid filled pocket, created to lubricate the tendons that pass over the bone, due to injury that causes irritation and the swelling and fluid accumulation inside the joint. The second type of swelling results in swelling to the front and inside of the hock and results from an arthritic condition.*
6. How is foot angle measured? *Answer: It is measured by following the hairline along a theoretical line that intersects the front leg. The ideal angle has a hairline that intersects the front leg at the knee.*
7. What is the problem with steep foot angles? *Answer: The problem is a lack of flexion and increased stress at the front and above the hoof.*
8. What is the problem with shallow foot angles? *Answer: Shallow foot angles cause added pressure on hoof causing injury or breakdown.*



9. What is heel depth? *Answer: At the rear of the foot heel depth is the distance from the hairline to the ground at the back of the outside heel.*
10. What are traits of desirable bone quality? *Flat, free of coarseness and swelling.*
11. What is the problem with extremely thin, fine bones in the leg? *There is not enough structural substance to support the cow.*
12. Rear legs side view is a conformation trait that assesses the curvature of the hock. How is it measured? *By an imaginary line up the middle of the shank, through the hock and assessing where it intersects at the rump region. Most desirable is intersection at the pins.*
13. What happens if a cow's legs are too straight? *Answer: They cannot absorb the repeated shock from walking and results in swelling.*
14. What happens if a cow's legs are too curved? *Answer: They are not sufficient to support the weight of the cow.*
15. What do straight legs from the rear show? *Answer: A cow that is comfortable putting weight on the outside of her foot.*
16. What is abduction? *Answer: The horizontal placement of the rear feet compared to the footprint left by the front foot when a cow is walking.*
17. What is a long stride? *Answer: When the rear foot is placed in the footprint left by the front foot when walking.*
18. What are some foot defects that decrease classification scores? *Answer: Abnormal claws, weak pasterns, boggy hocks, lack of bone, crampiness, thurls that are too far back or too low, toeing out.*
19. What are the linear traits associated with feet and legs? *Answer: Foot angle, heel depth, bone quality, rear legs – side view and rear legs – rear view.*

Dairy Strength Review Questions:

1. What is the Canadian Holstein cow known for around the world? *Answer: Having the strength and capacity combined with the angularity and dairy quality necessary to give her the capability to efficiently convert large quantities of forage into milk.*
2. What occupies the front of the body cavity? *Answer: The heart and lungs occupy the front of the body cavity.*
3. How is body depth measured? *Answer: By evaluating the amount of body below a horizontal line extending from the elbow of the cow.*
4. What is stature? *Answer: The height to the rump between the two hook bones.*
5. Why is extreme height not rewarded in the scorecard? *Answer: Because extreme height may be restrictive in some facilities and may not enhance longevity or productivity.*
6. What does the diaphragm separate? *Answer: The diaphragm separates the abdominal cavity from the thoracic cavity.*
7. What does dairy strength describe? *Answer: The frame of the cow.*
8. Describe the desirable rib structure of a cow. *Answer: Well sprung, open and angular.*



9. How is height at the front end measured? *Answer: It is measured to be the height at the front compared to the height of the rear of the animal.*
10. What should the height at the front end of a two year old cow be like and why? *Answer: Height at the front end should be level or slightly lower because her front end will continue to grow after the height at the rear stops growing.*
11. What is the problem with cows that are extremely tall in the front end? *Answer: Extremely tall front ends cause stress on the cow's hind legs.*
12. How is chest width measured? *Answer: Chest width is the width between the front legs at the chest floor.*
13. Why is a wide chest important? *Answer: A wide chest allows sufficient space for the front legs and vital organs, and usually allows the cow to carry width back through the rest of her body.*
14. What is the problem with extremely wide chest floors? *Answer: Cows that are very wide sometimes have undesirable heaviness and coarseness.*
15. What is the problem with extremely deep bodies? *Answer: Animals have extra mass that may cause mobility problems.*
16. What indicates angularity? *Answer: Indicator of angularity are Ribs with an outward spring from the vertebrae with wide spaces between the vertebrae and vertebrae that angle back towards the rear of the cow.*
17. What does angularity show? *Answer: Angularity shows the will to milk.*
18. What is body condition score and where are fat deposits assessed? *Answer: Body condition score is an assessment of the amount of body fat carried by the cow, measured on a 1 (very thin) to 5 (very fat) scale in quarter increments. Fat deposits are measured on the hooks and pins, and covering the ribs of the cow.*
19. What are underconditioned cows prone to? *Answer: Underconditioned cows are prone to fertility problems and discomfort.*
20. What are overconditioned cows prone to? *Answer: Underconditioned cows are prone to metabolic diseases, lameness and infertility.*
21. What are some defective traits associated with dairy strength? *Answer: Wry face, malformed jaw, shallow fore rib, weak crops, weak back, not well sprung or lacking balance.*
22. What are the linear traits associated with dairy strength? *Answer: Stature, height at front end, chest width, body depth and angularity.*

Rump Review Questions:

1. Why is it important to have a proper structure of the pelvis? *Answer: Pelvic structure is important for functionality and reproductive success.*
2. Why is it important for the pelvis to have a proper angle, strength and dimensions? *Answer: To facilitate calving ease and uterine health.*
3. Why is a wide pelvis important? *Answer: Width is important to facilitate calving ease and to allow for a high and wide rear udder attachment.*



4. How much higher should the hooks be than the pins? *Answer: The hooks should be 1.5 to 2.5 inches (3.8 to 6.4 cm) higher depending on the animal's age.*
5. What is the thurl? *Answer: The thurl is the point where the leg attaches to the pelvis by a ball and socket joint.*
6. What bone is the "hook" a part of? *Answer: The ileum. It is the 'wing' of the ileum.*
7. What should be the ratio of the distances between the hook to the thurl and the thurl to the pin be? *Answer: A 60:40 ratio.*
8. What does proper slope of the pelvis do? *Answer: Proper slope of the pelvis facilitates calving ease and drainage of the reproductive tract.*
9. What part of the conformation of the cow allows the reproductive tract to remain in its correct position? *Answer: The strength of the loin and slope of the rump allow the reproductive tract to remain in its correct position.*
10. What are two words to describe a desirable loin? *Answer: Desirable loins are wide and strong.*
11. Describe an ideal rump structure. *Answer: Ideal rumps are well sloped from hip to pin bone, strongly attached through the loin region and have adequate width.*
12. What is rump angle? *Answer: Rump angle is the angle from the top of the hip bone to the top of the pin bone.*
13. What happens to the pins when animals get more mature? *Answer: As cows get more mature, their pins get higher.*
14. What is the most important aspect of width of the animal and why? *Answer: The most important aspect of width is the width of the thurls, to provide adequate room for a calf during birth.*
15. Where is width measured? *Answer: Width is measured between the pins.*
16. What does the loin do? *Answer: The loin impacts fertility and calving ease, attaches the rump to the back and anchors the rib structure and many important organs.*
17. What are the linear classification traits associated with the rump? *Answer: Rump angle, pin width and loin strength.*
18. What are some defects that are related to the rump? *Answer: Advanced anus, advanced tailhead, recessed tailhead, high tailhead and wry tail.*



Activity: Judging Dairy Heifers

Purpose: To introduce members to the concept of judging using the dairy cattle scorecard and to practice giving reasons to justify decisions they have made.

Preparation & Equipment: A class of heifers is provided on the following page. Members could also use a class of animal pictures or live animals for this activity. A reasons worksheet is provided with the Judging Dairy Cattle activity earlier in this section.

Instructions:

- Members will be asked to judge and provide reasons on the class. To make members feel more comfortable giving reasons, they could do this in pairs or small groups. Members could also be asked to give their thoughts on a particular placing instead of a formal set of reasons.
- Variations: have members focus on judging parts of cows, ie. just the udder, or another body part.

Debrief: Discuss placings and reasons. Did most members have similar placings and reasons? How many started with the correct first place animal.

Answers to Sample Class on the Following Page:

I place this class of dairy heifers 1, 4, 3, 2.

Placing 1 at the top and over 4 on her advantage in general appearance. 1 is a growthier heifer with more size, stretch and scale, particularly standing taller in the withers. 1 combines this with more body capacity, having more depth of rib and length of barrel. In addition, 1 has more dairy character, being longer and cleaner about her neck and flatter in her thigh than 4. I do grant 4 more depth of heel.

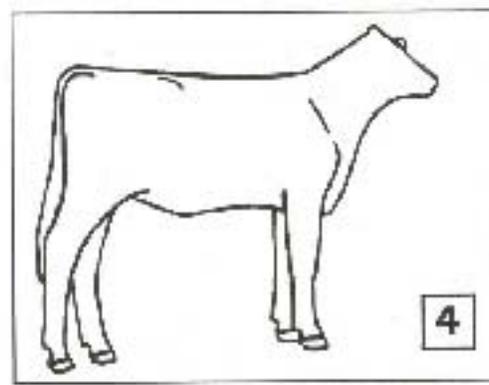
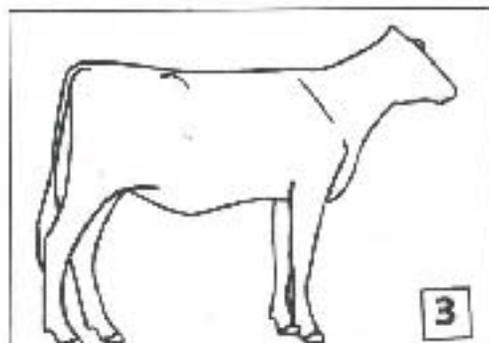
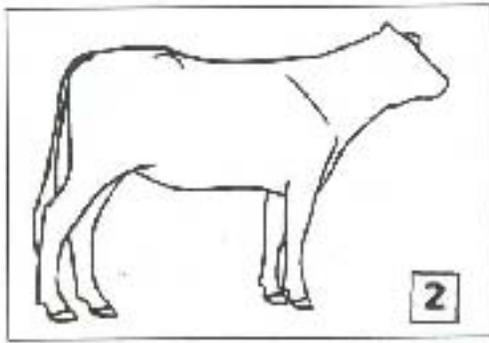
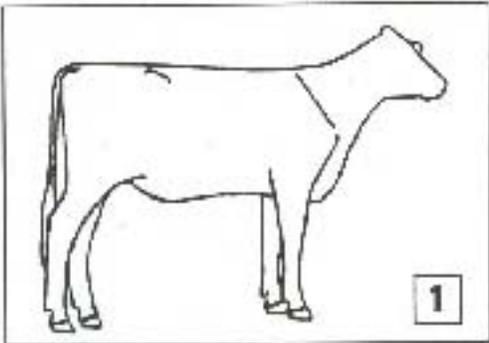
Placing 4 over 3 because of 4's advantage in general appearance and overall style and balance. 4 blends more smoothly from neck to shoulder and from shoulder to barrel. 4 is also stronger in her loin and tracks on a straighter set of hind legs, with less set to the hock. 4 has stronger pasterns and more depth of heel than 3, granted 3 does have an advantage in overall size and scale and angularity.

Placing 3 over 2 because of 3's advantage in dairy character, as 3 is cleaner cut about the head and neck and more flatter in her bone and thigh region. 3 also has an advantage in general appearance, being more feminine through her front end, straighter over her topline and more level from hooks to pins. Furthermore, 3 has more depth of rear rib than 2 although I will grant that 2 has slightly more depth of heel.

For these reasons I place this class of dairy heifers 1, 4, 3, 2. Cuts are 4-2-7.



Class of Heifers



Activity: What Traits Matter?

Purpose: To get members thinking about what traits are most important to their farms or their neighbour's farms. Members will realize that different farms have different breeding goals or philosophies.

Age Group: All members

Time Allotted: 10 minutes

Preparation & Equipment: Paper and pens or pencils.

Instructions:

- Ask members to write down the following list of traits and then rank them in the order of what's most important to the least important to them when selecting a calf.
 - o Breed
 - o Markings
 - o Cleanliness
 - o Rump
 - o Vaccinations on record
 - o Dairy strength
 - o Registered/Purebred/Grade
 - o Production Records
 - o General conformation
 - o Mammary Development
 - o Blemishes
 - o Feet and Legs
- Members should then present their opinions to the group and answer questions others may have about why they made their choices.

Debrief: Why did people have different answers? Remind members that there is no right or wrong order to rank the traits. Discuss different breeding goals that farms may have (i.e. type, production, health traits, etc.).



Activity: Calf Buying Selection*Activity adapted from Manitoba 4-H Junior Dairy Manual Draft 2000*

Purpose: To get members thinking about the different factors involved in making buying decisions and selecting animals to add to their herds.

Age Group: All members

Time Allotted: 10 minutes

Preparation & Equipment: Copies of the information on each hypothetical calf or one copy rewritten on chart paper so that all members can see it.

Instructions:

- Ask members to review the information on each of the hypothetical calves, and pick which one they would choose to purchase. Members should be able to provide 3 reasons for their choice. (Note: Based on different farm goals, members may have different answers)

Debrief: Remind members that choosing a heifer for the show ring is one part of the dairy business, but it is also important to select a calf that will grow into a high producing cow and remain in the herd for a number of years. What did members think was most important in making their decisions? What additional information would have helped them? Why should you gather and compare information before making a decision?

Alternative Activities:

- Members could look at live animals on a host farm and make selections about which animals they would prefer to purchase. Pedigree information could be used if available.
- Pedigrees could be examined to determine which animal the members would be most interested in purchasing, without seeing the actual animals.

<i>Calf 1 - Rita</i>	<i>Calf 2 - Glory</i>	<i>Calf 3 - Maria</i>
Birthdate: September 2 Price: \$950.00 Size: Average Present Health: Excellent Past Health: Okay Dam's Production: Average Sire's Merit: Unproven Heifer's Type: Sharp, dairy Dam's Type: Deep udder	Birthdate: September 24 Price: \$800.00 Size: Average Present Health: Very Good Past Health: Scours as calf Dam's Production: Above average Sire's Merit: Average proof Heifer's Type: Correct Feet & Legs Dam's Type: Unknown	Birthdate: October 11 Price: \$750.00 Size: Above Average Present Health: Excellent Past Health: Okay Dam's Production: Unknown Sire's Merit: High Proof Heifer's Type: Deep Bodied Dam's Type: Tall, Problem legs



Activity: Meet the Press at the Fair

Adapted from the Manitoba Senior 4-H Dairy Manual Draft 2000

Purpose: To teach members how to respond to the media to put agriculture and dairy farming in a positive light.

Age Group: All members

Time Allotted: 20 minutes

Preparation & Equipment: pens and pencils for brainstorming

Instructions:

- Set the scene for members by telling them that people around the world are becoming increasingly interested in the welfare of animals including pets, farm animals, laboratory animals, animals used for recreation and wild animals. People who raise animals are continually analyzing whether they are caring for the animals in the most humane way possible. When you exhibit at a show or other public venue, you may have the opportunity to present your feelings and views about animal rights to the public. A news reporter and a cameraperson are in the cattle barns and are preparing a story on animal rights and welfare for the 6:00pm news. They want to interview four people - a youth who is showing animals, a parent, a volunteer who works with youth groups interested in animals and a person who doesn't eat meat and is a strong spokesperson for animal rights.
- Split members into groups of about 6 people (may adjust activity based on number of members). The groups should decide who will play each of the roles, and the people with similar roles will meet to discuss how they will react in the interview. Then the groups get back together and discuss how the animals in the barn are being treated by answering the question "Why are these animals being treated as they are?" for the news reporter.

Debrief: What happened during your group's news conference? How did you feel in your role? What were the different points of view expressed? What would you do if you were confronted in real life by someone with very different opinions from yours? Did you learn anything from any of the other people in the group?



Activity: Line in the Sand

Purpose: To introduce members to the concept of ethics and get them thinking about proper and improper practices related to handling and showing dairy animals.

Age Category: All ages

Time Allotted: 10 minutes to answer questions and explain reasons, may take longer if discussion is sparked.

When to Use: In conjunction with discussion of 4-H Code of Conduct Forms, Dairy Cattle Showing Ethics Agreements, establishing guidelines for a 4-H show or as a component of an Animal Welfare or Fitting and Showing meeting

Preparation and Equipment: copies of question sheet on the next page if the activity is to be distributed to everyone

Background and Instructions:

- Ethics in dairy cattle showing has become an increasingly important issue. Concern for animal welfare and fair competition have led to rules for dairy cattle exhibitors, ultra sounding at major shows like The World Dairy Expo and The Royal Agricultural Winter Fair, and other regulatory activities.
- The 20 questions on the following pages will ask members to ponder which activities are ethical and which are unethical.
- This could be done individually, in small groups or as a large group activity.

Debrief: Take up the answers with members. Welcome discussion on various points as some members may see some topics as grey areas. While discussion may sway opinions, a general guideline for answers is:

Questions 1, 6, 7, 8, 11, 12, 16, 19 and 20 are ethical

Questions 2, 3, 4, 5, 9, 10, 13, 14, 15, 17, and 18 are unethical

Expect discussion on 2, 5, 7, and 12 in particular

When discussing whether an action is ethical or unethical, remind the members of the following questions:

Does it violate the law?

Does it qualify as fraudulent misrepresentation?

Does it compromise animal welfare?

Does the practice relate to real world agriculture?

Further discussion could include the following questions: *Is there such thing as being a little bit unethical? If so, is that okay? Where would they draw the line?*



Line in the Sand

As a 4-H member you should always strive to display ethical behaviour and fair play. For each of the situations below, check off if the action is ethical or unethical.

	Ethical	Unethical
1. An adult offers advice to a 4-H member about clipping their calf	<input type="checkbox"/>	<input type="checkbox"/>
2. A calf is born on November 26 th but the owner registers it with a birthdate of December 1 st	<input type="checkbox"/>	<input type="checkbox"/>
3. A calf is fat so the owner gives it Lasix, a diuretic to help it lose weight	<input type="checkbox"/>	<input type="checkbox"/>
4. A fitter puts body hair in a heifer's topline to fill in a low spot	<input type="checkbox"/>	<input type="checkbox"/>
5. Someone brings their cows to the fair with live ringworm	<input type="checkbox"/>	<input type="checkbox"/>
6. A cow gets sick at the show so the vet gives her a drug treatment	<input type="checkbox"/>	<input type="checkbox"/>
7. A cow has too much milk in her udder and starts to lose her seam. Her exhibitor puts ice on the inflamed udder to reduce the swelling and help put the crease back in her udder	<input type="checkbox"/>	<input type="checkbox"/>
8. Hair is trimmed from the animal to enhance her appearance	<input type="checkbox"/>	<input type="checkbox"/>
9. Ownership is changed on an animal for a show, and then changed back again once the show is over	<input type="checkbox"/>	<input type="checkbox"/>
10. A cow has too much milk in her udder and starts to lose her seam. Her exhibitor uses a rope to help create the illusion of a crease	<input type="checkbox"/>	<input type="checkbox"/>
11. A professional fitter is hired to help out at an open show	<input type="checkbox"/>	<input type="checkbox"/>
12. An animal is sprayed with paint to temporarily change her hair colour	<input type="checkbox"/>	<input type="checkbox"/>
13. A heifer does not want to drink at a show so water is forced into her with a tube	<input type="checkbox"/>	<input type="checkbox"/>
14. A parent comes to a 4-H show to clip their son's 4-H calf	<input type="checkbox"/>	<input type="checkbox"/>
15. An unruly animal is given a sedative to calm it down so it can be shown	<input type="checkbox"/>	<input type="checkbox"/>
16. Fly spray is used to keep flies away and keep an animal from fussing	<input type="checkbox"/>	<input type="checkbox"/>
17. An irritant is used to change the appearance of an animal	<input type="checkbox"/>	<input type="checkbox"/>
18. An animal was born on September 26 th and the owner registers it with a birth date of December 1 st	<input type="checkbox"/>	<input type="checkbox"/>
19. Cows are filled with hay and beet pulp to increase their body capacity	<input type="checkbox"/>	<input type="checkbox"/>
20. Milk is left in a cow's udder and her teats sealed with glue to make her udder appear fuller for the show	<input type="checkbox"/>	<input type="checkbox"/>



Activity: Take a Virtual Farm Tour

Purpose: To provide an alternative to visiting a dairy farm at a meeting

Age Group: All members

Time Allotted: Could be done as a take-home activity or during a meeting; if done at a meeting, the farm tour could be done in anywhere from 5 minutes to 30 minutes, depending on the detail with which the virtual farms are visited.

Preparation & Equipment: Computer, preferably also a projector, internet access or copies of the Virtual Farm Tours DVD from the Ontario Farm Animal Council.

Instructions:

- This activity is quite flexible – it can be done in small groups or as one large group; at home or at a club meeting. Members should have the opportunity to tour a tie stall and a free stall dairy farm.
- If using the internet, access www.farmissues.com, alternatively the farm tour DVD has the same farm tours on it.

Debrief: What different aspects of each farm were shown on the virtual tours? What are some of the similarities between tie stall and free stall farms? What are some of the differences? Which type of set up would the members prefer to have?



Activity: Stay Out of My Bubble - The Flight Zone Activity

Adapted From: 4-H Farm Safety Manual, April 2007

Purpose: We all have a need for personal space. Sometimes we call it our “personal bubble.” In order to get members thinking about the animal’s personal space and the animal’s comfort level have them complete this fun activity.

Age Group: All members

Time Allotted: 5 minutes

Preparation & Equipment: None

Instructions:

- Pick a partner.
- Have everyone form two lines so they are opposite to and facing their partner.
- Have one partner stay in one spot.
- Have the other partner approach their partner one step at a time.
- When the stationary partner begins to feel “uncomfortable” or that the person approaching is too close, they yell “stop.” The person stops and remains in that location.
- Once everyone is done look down the line. You will see that some people are very comfortable with people very close to them while others are not.
- Ask the members how they felt when the other person got too close.
- Change around and repeat the exercise so the other members have a chance to approach.

Debrief: Explain that this is how animals feel when they are approached. Some will be quite okay with us really close, others will not.



Activity: Get the point? – The Point of Balance that is!

Adapted From: 4-H Farm Safety Manual, April 2007

Purpose: For animals to practice and learn how to properly handle animals.

Age Group: All members

Time Allotted: 15 minutes

Preparation & Equipment: A pen (a round penning system if possible) and a quiet animal.

Instructions:

- If possible complete this exercise in a round pen. Choose an animal that is usually calm and has been well handled. Have the members learn the animal's "point of balance" by approaching the animal one at a time in the following positions:

(A leader should demonstrate the activity before asking members to try)

 - 1) To make an animal move forward, the handler should stand beside the animal, behind the shoulder or the "point of balance."
 - 2) To make an animal back up, the handler should stand beside the animal in front of the shoulder or the "point of balance."
 - 3) Make sure the members practice the handling information given in the meeting e.g. calm, firm, no sudden or loud noises, use a firm voice, do not show fear, etc..
 - 4) Have the onlookers watch for animal behaviour signals e.g. ear positioning, eye contact, tail motion, pawing etc.
 - 5) Show where the blind spot is, and the flight zone of the animal.
 - 6) After the demonstration, have each member write down six things to remember when working with an animal.

Debrief: As a group review everyone's answers and have a general discussion why understanding the point of balance and animal behaviour is important.



Activity: Safe Animal Handling Quiz

Adapted From: 4-H Farm Safety Manual, April 2007

Purpose: To review safe animal handling procedures.

Age Group: All members

Time Allotted: 10 minutes

Preparation & Equipment: Copies of the Safe Animal Handling Quiz on the following page

Instructions & Debrief:

- Members should complete the quiz and the answers should then be reviewed. Clarify questions that the members may have.

Answers: 10-b; 9-f; 8-c; 7-b; 6-abc; 5-c; 4-d; 3-b; 2-b; 1-d



Safe Animal Handling Quiz

- 1) Which animal causes the most livestock related injuries requiring hospitalization?
 - a) bull
 - b) cow
 - c) goat
 - d) horse
 - e) sheep
- 2) Which has the best hearing?
 - a) a human
 - b) an animal
- 3) The “flight zone” is:
 - a) the farthest a scared animal will run before stopping
 - b) the shortest distance between the handler and animal before the animal will move away
 - c) the longest distance between the handler and animal before the animal will move away
 - d) smaller in large pens
- 4) What is the best type of footwear when working around animals?
 - a) running shoes
 - b) rubber boots
 - c) leather boots
 - d) boots reinforced with a steel toe
- 5) Which does not happen to animals when they become scared?
 - a) their heart rate increases
 - b) their rate of breathing increases
 - c) their eyesight becomes clearer
 - d) adrenaline starts pumping
- 6) To prevent animal related injuries a person needs to have all but one of these:
 - a) common sense
 - b) knowledge of animal behaviours
 - c) training and experience
 - d) a strong electric prod
- 7) The “point of balance” is:
 - a) the middle of the animal
 - b) the imaginary line that determines if an animal moves forwards or backwards
 - c) usually around the rear of the animal
 - d) the height an animal can rear before falling over
- 8) What are the odds of surviving an attack by a bull?
 - a) 1 in 10
 - b) 1 in 25
 - c) 1 in 20
 - d) 1 in 0
- 9) Which are warning signs to look for when working around livestock?
 - a) pawing
 - b) bared teeth
 - c) pinned ears
 - d) snorting
 - e) raised back hair
 - f) all of the above
- 10) Animals have short memories so they don't remember how they have been treated in the past.
 - a) True
 - b) False



Activity: Dairy Jeopardy

Purpose: To test members' knowledge of the dairy industry in a fun way!

Age Level: All members - ensure that members are competing against their approximate age level.

Time Required: 30 minutes

Preparation & Equipment: Dairy Jeopardy game included on the 4-H Dairy Project CD; MS PowerPoint; laptop or PC; bells, horns, or other items to represent buzzers; LCD projector (optional). Load the Jeopardy game on your computer first; test it ahead of time to make sure it works, especially if you decide to use a projector.

Instructions:

- If you have a large group, you may want to put members in 3 teams with each member taking turns answering questions.
- Use the PowerPoint presentation included on the Dairy Project CD (if not included with this binder, you will need to get it from your ARC or download it from the 4-H Ontario website). Have members play Dairy Jeopardy.
- This is a good activity to do near the end of your club year.

