Kansas 4-H Dairy Cattle Leader Notebook

Level I

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Color a Rainbow Calf:  
Identifying the Parts of a Calf  
_Dairy Cattle, Level I_

What Members Will Learn . . .

ABOUT THE PROJECT:
- To recognize the body parts of a calf
- To identify at least seven parts of a calf
- To name, from memory, at least five parts of a calf

ABOUT THEMSELVES:
- Appreciate differences and similarities

Materials Needed:
- Activity Sheet 1, Coloring a Calf
- Activity Sheet 2, Matching Calf Parts
- Leader’s Key, Activity Sheet 1, Coloring a Calf
- Leader’s Key, Activity Sheet 2, Matching Calf Parts
- Crayons or coloring pencils (most members could bring their own)
- Flat surface, table, counter, etc.
- Flip chart or chalkboard

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

Knowing the parts of a calf is important when learning about the dairy cattle project. Knowing parts and correct dairy terminology will help increase your knowledge of dairy cattle. Knowing the parts of an animal are important in judging at contests, answering questions, judging your own cattle, talking to a vet about an animal’s sickness or injury or simply visiting with others in the dairy business.

Here is a picture to color. Since everyone has crayons we’ll work on this together. Color each part as I tell you the color and name of the part.

Pass out Activity Sheet 1, Coloring a Calf. Use Leader’s Key to give a part and color. **Note:** May want to let members color one sheet on their own and then do a correction sheet and compare.

After 15 or 30 minutes, review some of the main parts.

Hand out Activity Sheet 2, Matching Calf Parts to see how well they have learned main parts.

3–Dairy Cattle, Level 1
DIALOGUE FOR CRITICAL THINKING:

Share:
1. What parts of the calf did you learn for the first time?

2. What parts of the calf are hard/easy to remember? Why?

Process:
3. How many calf parts can you name? (Point to parts one at a time.)

4. Why do you think you need to know the parts of a calf?

Generalize:
5. Have you or someone you know ever judged dairy? How important was it to know the parts of dairy cattle and the general shape of each part?

6. What shapes do some parts have?

Apply:
7. As the calf grows, do these parts or shapes change? Why or why not?

8. What parts of the calf are similar to parts of other animals? Discuss.

GOING FURTHER:
- Design your own calf drawing and label each part.
- Visit a veterinarian’s office.
REFERENCES:

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5–Dairy Cattle, Level 1
COLOR A RAINBOW CALF: IDENTIFYING PARTS OF A CALF
DAIRY CATTLE, LEVEL I
Activity Sheet 1, Coloring a Calf

Color the following parts of a calf the corresponding color.

1. Poll—Orange
2. Ear—Pink
3. Head—Purple
4. Muzzle—Yellow
5. Eye—Gold
6. Neck—Brown
7. Brisket—Green
8. Shoulder—Pink
9. Withers—Red
10. Back—Green
11. Barrel—Blue
12. Rump—Red
13. Tail—Blue
14. Thigh—Orange
15. Hind leg—Yellow
16. Hock—Red
17. Hoof—Brown
18. Knee—Blue
19. Front leg—Pink
COLOR A RAINBOW CALF: IDENTIFYING PARTS OF A CALF
DAIRY CATTLE, LEVEL 1
Leader’s Key, Activity Sheet 1, Coloring a Calf

Color the following parts of a calf the corresponding color.

1. Poll—Orange
2. Ear—Pink
3. Head—Purple
4. Muzzle—Yellow
5. Eye—Gold
6. Neck—Brown
7. Brisket—Green
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11. Barrel—Blue
12. Rump—Red
13. Tail—Blue
14. Thigh—Orange
15. Hind leg—Yellow
16. Hock—Red
17. Hoof—Brown
18. Knee—Blue
19. Front leg—Pink
COLOR A RAINBOW CALF: IDENTIFYING PARTS OF A CALF
DAIRY CATTLE, LEVEL I
Activity Sheet 2, Matching Calf Parts

Draw a line from the word to the part on the calf.
COLOR A RAINBOW CALF: IDENTIFYING PARTS OF A CALF
DAIRY CATTLE, LEVEL I
Leader’s Key, Activity Sheet 2, Matching Calf Parts

Draw a line from the word to the part on the calf.
Beginning to Set Goals in Your Dairy Cattle Project

*Dairy Cattle, Level I*

What Members Will Learn . . .

ABOUT THE PROJECT:
- How to set project goals

ABOUT THEMSELVES:
- The importance of setting goals

Materials Needed:
- Chalkboard or flip chart
- Dairy Cattle Member Guide and Annual Report (MG-38)
- Activity Sheet 3, Learning Topics

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

Each year you will set several goals to accomplish during the project year. Goals help you get where you want to go.

If this is your first year, you might want to have just one goal, to select your project calf.

List one or two goals (MAP Step 1) on page 2 for this project year.

Breaking a goal into steps (MAP Step 2) helps you better understand the action needed to make that goal a reality. Some goals have many steps, some have a few.

With each step you need to set a deadline (MAP Step 3). Deadlines are when you expect to have that step of your goal done. As you meet the deadline you set for each step, you need to use an energizer (MAP Step 4). Energizers encourage you to move toward your goals by offering a small reward for meeting your deadline.

Now complete MAP Steps 6 and 7. You have set your goals for Year 1 of your dairy project.

Leader Notes

Put participants into groups of three or four. Mix new project members with youth who have had some experience with dairy or other animal projects. Hand out Member Guide and Annual Report (MG-38) plus Member Handout 1, Learning Topics. Let them help each other decide what their goals for the year will be.

Allow time for them to share their goals with a project friend and sign each other’s MAP Worksheets.
BEGIN TO SET GOALS IN YOUR DAIRY CATTLE PROJECT

**Leader Notes**

**ACTIVITY**

**DIALOGUE FOR CRITICAL THINKING:**

*Share:*
1. What is your first goal for the project year?
2. What goal do you like best? Why?

*Process:*
3. Why are these goals important?
4. Why is it important to set goals?

*Generalize:*
5. What are the advantages of working in a group when setting goals?

*Apply:*
6. What other groups have you worked in where you needed to set goals to help you make decisions?

**GOING FURTHER:**
- Use the goal setting process to set group goals

**REFERENCES:**

Lessons on:
- Selecting Your Project Calf
- Identifying Breeds of Cattle
- Handling a Calf

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BEGINNING TO SET GOALS IN YOUR DAIRY CATTLE PROJECT
DAIRY CATTLE, LEVEL I
Activity Sheet 3, Learning Topics

Place a check mark next to five of the topics you would like to learn about in your project.

_____ Identifying Parts of a Calf
_____ Beginning to Set Goals in Your Dairy Cattle Project
_____ Care of a Newborn Calf
_____ Housing for Your Calf
_____ Feeding a Bucket Calf
_____ Is Your Calf Sick or Well?
_____ Weaning Your Bucket Calf—And Other Management Practices
_____ Training Your Calf to Lead
_____ The Proper Way to Wash Your Calf
_____ How to Pack a Tack Box for a Show
_____ Foster Mother of the Human Race—The Dairy Cow

Think Back:
What I learned about dairy cattle so far:

________________________________________________________________________________________
________________________________________________________________________________________

What I learned about myself so far:

________________________________________________________________________________________
________________________________________________________________________________________
BEGIN TO SET GOALS IN YOUR DAIRY CATTLE PROJECT
What Members Will Learn . . .

ABOUT THE PROJECT:
- How to care for the newborn calf
- The value of colostrum for preventing health problems
- The importance of a good, healthy environment for the calf

ABOUT THEMSELVES:
- The value of colostrum for humans
- The importance of preventive health care
- The importance of their environment

Materials Needed:
- Bottle of tincture of iodine
- Two quart nipple bottle
- Pictures of good calf housing
- Syringes and vitamin vaccines
- Activity Sheet 4, Newborn Calf Care

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

The birth of calves on a dairy farm is a very important event because calves are the source of replacements for cows in the herd. The success of the dairy is closely related to raising good replacement heifers. Proper care of the newborn calf is important for giving the calf a good start in life.

Newborn calves can get sick real easy. Therefore, it is important to provide a clean environment for the newborn calf. A clean dry pen or a grassy paddock, when the weather permits, are the best areas for the newborn to begin its life.

Soon after a calf is born, its navel cord is broken and the calf loses its attachment from its dam (mother). The broken navel cord area allows easy access for bacteria which may cause an infection in the calf. This infection is called “navel ill.” To give the calf protection from navel ill, the navel should be thoroughly dipped in tincture of iodine. (Note: tincture of iodine should be used instead of iodine teat dip).

Another way to reduce the risk of infection is to wash the dam’s teats before allowing the calf to nurse. Bacteria on the cow’s teats can be the cause of scours in the young calf.

Leader Notes

Show members a bottle of tincture of iodine. Explain that tincture of iodine helps dry the navel cord, while iodine teat dip will tend to keep the cord moist and susceptible to infection. If possible, demonstrate dipping the navel of a newborn calf.
After making sure the newborn calf’s environment is satisfactory, the most important practice is to be sure that the calf receives at least two quarts of colostrum. Colostrum is the first milk produced by cows at calving time. It is essential to the well being of the newborn calf because colostrum contains antibodies, which are things that prevent certain diseases. Unless the calf receives colostrum within the first few hours after being born, the calf will likely become sick and may die.

The newborn calf can readily absorb the antibodies from colostrum for a few hours after being born, but this ability is seriously diminished after about 12 hours. Therefore, feeding at least 2 quarts of colostrum as soon after birth as practical is very important.

Fresh cows produce some colostrum for about two days after calving. The first milking has the highest concentration of antibodies and by far the most desirable for feeding to newborn calves. Even though the calf has very little ability to absorb the colostral antibodies after one day of age, it is still a good idea to continue to feed colostrum for two or three days because it tends to coat the intestine and helps prevent infections.

The calf should be separated from its dam soon after being born. Most successful dairies do not allow the calf to nurse its dam since there is no way of knowing how much colostrum it received.

At the time the calf is separated from its dam, an injection of vitamins A, D and E is recommended. The recommended amounts are: 500,000 I.U. of A, 75,000 I.U. of D, and 50 I.U. of E. These vitamins will help give the newborn calf a good start in life.

The next concern for giving the newborn calf a good start in life is housing. Calf housing should provide a clean, draft-free, dry environment to help keep it healthy. Good calf housing provides conditions that are comfortable for the calf and minimizes stress. We will talk about housing in the next lesson.

DIALOGUE FOR CRITICAL THINKING:

Share:
1. Name three things you must provide or do for a newborn calf.
2. How did you put tincture of iodine on the calf’s navel?
3. What happened when you fed a calf on the bottle?

Process:
4. Why is it important to feed colostrum?
5. Why use tincture of iodine on the navel?
GENERALIZE:
6. Human babies receive disease prevention antibodies from their mothers, but what kinds of shots do they get to prevent disease?

APPLY:
7. What special conditions do new human babies need to be safe and comfortable? (Consider temperature, clothing and other environmental factors)?

GOING FURTHER:
- Visit a dairy and observe the area where calves are born and housed.
- Visit with a dairy farmer about how colostrum is fed and when the calf is separated from its dam.

REFERENCES:
Raising Dairy Heifers, C-721, Cooperative Extension Service, Manhattan, Kansas 1991

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17–Dairy Cattle, Level 1
CARE OF A NEWBORN CALF
DAIRY CATTLE, LEVEL I
Activity Sheet 4, Newborn Calf Care

Number these statements in the order they occur:

   _____ Give calf 2 quarts of colostrum
   _____ Give injection of vitamins
   _____ Dip navel cord in tincture of iodine
   _____ Put calf in clean, draft-free, individual hutch
Housing for Your Calf
*Dairy Cattle, Level I*

What Members Will Learn . . .

**ABOUT THE PROJECT:**
- The importance of adequate housing for their calf
- The requirements of good housing

**ABOUT THEMSELVES:**
- Size of room available for them
- How they feel about their room
- The differences in housing that exists in the world

**Materials Needed:**
- A calf hutch
- Member Handout 1, Calf Hutch Diagram

**ACTIVITY TIME NEEDED:** 30 MINUTES

**ACTIVITY**

Housing for your calf is a critical consideration because it affects the environment. Good housing provides a (1) dry bed, (2) is draft free, and (3) has good ventilation. If these conditions are provided, your calf should not be under any environmental stress. Several housing types are available which will provide good environmental conditions.

Calves should be housed individually to help prevent the spread of diseases; to be able to determine how much dry feed they are eating; and to prevent calves from sucking each other. Individual pens may be used in an existing building, in elevated floor crates, or in calf hutches.

Calf hutches are the most common housing system in Kansas. Hutches provide the environmental conditions necessary for raising healthy calves. And, it is the least expensive housing system.

Although a calf hutch might appear to be cold and drafty, the three solid sides of the hutch prevent wind from blowing through it.

Calf hutches should be bedded with straw or shavings to provide a dry bed for the calf. An outside pen that measures approximately 4 feet by 8 feet will allow the calf to have some exercise, and it will have enough surface area so that it will stay reasonably dry. Calves may be tethered with a dog chain and collar which will allow them to move around the hutch to get into shade. Tethering will give you a “head start” in training the calf to lead.

**Leader Notes**

This lesson should be conducted at a dairy farm where the calf housing can be toured. Since hutches are the most common housing system, a farm using hutches would be a logical location for the meeting.

Discuss the requirements for a good housing system and show the members how calf hutches can provide these requirements.

Encourage members to go inside a calf hutch to see how big it is and how warm or cool it feels.
HOUSING FOR YOUR CALF

Hutches should be open to the south in the winter to avoid north winds and to let sunlight in during the day. During the summer, the hutch should face the north to provide more shade. The hutch could also be set on 4-inch blocks to allow more air movement.

Water should be placed on the outside of the hutch and the dry feed on the inside. This keeps the hutch drier and prevents the calf from slopping water into its feed.

Hutches should be moved to a clean spot between calves. If an empty hutch is not needed immediately, turn the hutch upside down and the sunlight will help sanitize it.

Floor pens in buildings can provide a good environment for calves if the building is well ventilated. Floor pens should be approximately 4 feet by 6 feet in size. The pens should have three solid sides with a gate for the front. This will prevent drafts and nose-to-nose contact with other calves.

Floor pens are not as easy to clean. Therefore, diseases may be a problem if this system of housing is used.

DIALOGUE FOR CRITICAL THINKING:
Share:
1. What are several important parts of the calf hutch?

2. What parts of the hutch made it comfortable for the calf?

Process:
3. How important is the direction that the open side of the hutch faces? Why?

4. What are the main things that the pen and hutch provide for the calf?

Generalize:
5. What types of shelter are needed for other animals? Why?

6. What do you consider to be important about your room at home?

7. What are some of the different types of housing used in different countries? For what reasons?

Apply:
8. Make a diagram of what an ideal kids’ room would look like. How might this change in other parts of the world?
GOING FURTHER:
- Visit a dairy farm and look at the calf housing. Ask about the advantages and disadvantages of the system.

REFERENCES:
Raising Dairy Heifers, C-721, Cooperative Extension Service, Manhattan, Kansas

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HOUSING FOR YOUR CALF
DAIRY CATTLE, LEVEL I
Member Handout 1, Calf Hutch Diagram
INSTRUCTIONS:
1. Nail front and back corner 2 × 4 to side by placing 2 × 4 on floor.

2. Put side on top of 2 × 4 leaving 2 × 4 down from top of side the width of a 2 × 4.

3. Nail 48 inch 2 × 6 to lower end of 2 × 4 below plyboard side.

4. Do same for other side of hut.

5. Stand sides up, nail 40 inch 2 × 4 on top of corner 2 × 4, leaving bottom of front 2 × 4 flush with front of side, and top of back 2 × 4 flush with back of side.

6. Nail 43 1/2 inch 2 × 6 at bottom on front and back of hut.

7. Nail back plyboard on.

8. Nail 10 inch 2 × 4 on inside of side flush with top.

9. Place top on hut square and nail.

10. Plane 41 1/2 inch 1 × 4 to fit under roof on front of hut.

You will need:
• Two sheets 5/8 inch exterior plyboard cut as indicated below.

Cut 2—2 × 4s, 40 1/4 inches long
Cut 2—2 × 6s, 48 inches long
Cut 2—2 × 6s, 43 1/2 inches long
Feeding a Bucket Calf

Dairy Cattle, Level I

What Members Will Learn . . .

ABOUT THE PROJECT:
• How to teach a calf to drink from a bucket or nurse a bottle
• How to feed the correct amount of milk or milk replacer
• The importance of feeding the calf dry feed

ABOUT THEMSELVES:
• The importance of cleanliness
• How they feel about using clean food containers and silverware

Materials Needed:
• A 2 gallon plastic bucket
• A 2 quart nipple bottle
• A label from a milk replacer
• A sample of calf starter
• Member Handout 3, Recommended Calf Starter

ACTIVITY TIME NEEDED: 45 MINUTES

ACTIVITY

Your calf will instinctively nurse its mother, but nursing a nipple bottle or drinking from a bucket is a new learning experience for your calf. When teaching your calf to drink from bottle or bucket, it may be necessary for an adult or an older member to help hold the calf.

Either a nipple bottle or bucket may be used for feeding milk or milk replacer. A nipple bottle is convenient for measuring the correct amount of liquid feed. A bucket is convenient for encouraging calves to consume calf starter—place a handful of starter in the bucket just as the calf finishes drinking.

The easiest way to teach your calf to consume milk or milk replacer is to take advantage of its own instincts. Since calves will instinctively nurse, insert one or two fingers in its mouth and let the calf start sucking. Then insert the nipple of the bottle in its mouth and let it continue to suck. If bucket feeding is used, force the calf’s mouth into the bucket of milk while it is sucking on your fingers. It may be necessary for a large person to straddle the calf’s neck when starting the calf on the bucket.

Leader Notes

Show nipple bottle and plastic pail. Put a handful of calf starter in the pail.

If possible, have a newborn calf available to demonstrate the technique of teaching the calf to consume liquid feed.
## Leader Notes

Show a label from a milk replacer indicating percentages of protein and fat.

Milk or milk replacer should be fed at the rate of 8 percent of the calf’s birth weight. This amount could be increased to 10 percent of birth weight on extremely cold days.

Pass out Member Handout 2, Sample Calf Starter. Most youth will purchase a commercial calf starter. Compare ingredients to this sample. See if members can actually identify corn and oats in the feed.

Note: Water helps maintain the clotting enzyme (rennet) which is needed in the calf’s stomach.

## ACTIVITY

During the milk feeding period, your calf will become gentler if you pet or brush it while it is feeding. This will help later when training your calf to lead.

The decision to feed milk or milk replacer will probably depend on whether or not milk is available. Most dairies have about enough waste milk (unsalable) such as antibiotic treated or high somatic cell count cows so that milk feeding is the most economical. If milk replacer is fed, it should contain at least 22 percent protein and 15 percent fat.

Follow label instructions when using milk replacer. Holding the level of liquid feed constant encourages the calf to consume calf starter as its size and appetite increase. A calf weighing about 100 pounds at birth should be fed 8 pounds of liquid (approximately 1 gallon) in two equal feedings each day. Likewise, a calf weighing 80 pounds should be fed about 6.5 pounds each day in two equal feedings.

Each calf should be fed from a separate nipple bottle or bucket to avoid spreading diseases from one calf to another. If this is not possible, thoroughly wash the nipple and bottle or bucket before the next calf is fed.

Within a few days after the calf is born, it should be encouraged to consume dry feed, both calf starter and hay, to avoid upset stomachs and prevent nutritional scours. Dry feed consumption is necessary for the calf to develop a functional rumen. In the beginning, feed small amounts of calf starter and a grass or grass-legume hay. It is important to keep the dry feed fresh, so don’t feed more than the calf will clean up in a day.

Water should be made available for the calf even though it is being fed milk or milk replacer. It is best to offer water at least 20 minutes after feeding the liquid feed.

When your calf is eating at least 1½ pound of calf starter each day, it may be weaned from liquid feed. This will usually be at about six weeks of age. After weaning, continue feeding all of the calf starter and hay the calf will eat.

### DIALOGUE FOR CRITICAL THINKING:

**Share:**
1. Did you use a nipple bottle or bucket?
2. What problems did you have in getting your calf to drink?
3. How did it feel to have a calf suck your fingers?

**Process:**
4. What is the recommended amount of milk or milk replacer? Why should it be limited?
5. When should dry feed be offered to a newborn calf? Why?

6. Why is it important to wash the nipple, bottle or bucket after each feeding?

**Generalize:**

7. Why is it important for you to have clean dishes and silverware for eating?

**Apply:**

8. What are some important things to remember the next time you help prepare a family meal?

**GOING FURTHER:**

- Visit a dairy farm and watch the calf feeding operation.
- Ask a dairy farmer if milk or milk replacer is fed and why.
- Visit a feed store and ask about the different milk replacers available.

**REFERENCES:**

Raising Dairy Heifers, C-721, Cooperative Extension Service, Manhattan, Kansas 1991

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**FEEDING A BUCKET CALF**

**DAIRY CATTLE, LEVEL I**

**Member Handout 2, Sample Calf Starter**

Compare this sample to those actually used or purchased from a feed store. What is different? What is the same?

<table>
<thead>
<tr>
<th>100 Pounds Calf Starter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn, cracked ...................... 51.5 lbs.</td>
</tr>
<tr>
<td>Oats, rolled ....................... 20.0 lbs.</td>
</tr>
<tr>
<td>Soybean meal ....................... 19.5 lbs.</td>
</tr>
<tr>
<td>Molasses ........................... 7.0 lbs.</td>
</tr>
<tr>
<td>Limestone, ground ............... 1.2 lbs.</td>
</tr>
<tr>
<td>Trace mineral salt ............... 0.3 lbs.</td>
</tr>
<tr>
<td>Dicalcium phosphate .............. 0.3 lbs.</td>
</tr>
<tr>
<td>Salt .................................. 0.2 lbs.</td>
</tr>
</tbody>
</table>

**Vitamins ADE***

* Add (IU/lb) Vitamin A, 1000; Vitamin D, 140; Vitamin E, 20.
Is Your Calf Sick or Well?

*Dairy Cattle, Level I*

**What Will Members Learn . . .**

**ABOUT THE PROJECT:**
- To recognize early signs of a sick calf
- To develop good diagnostic skills
- To recognize a normal animal
- To observe closely and make comparisons

**ABOUT THEMSELVES:**
- Their normal body temperature
- Improve observation skills

**Materials Needed:**
- Slips of paper with characteristics of sick animals
- Newsprint
- Markers
- Model of calf, stuffed animal or small live calf

**ACTIVITY TIME NEEDED:** 30 MINUTES

**ACTIVITY**

Today, we are going to talk about how to recognize a sick calf and how to tell if a calf looks healthy. To be able to care for your calf, or any other animal, you must know its behavior so well that you can tell when it isn’t acting normally. This means you must become very good at watching your animal and understanding what you see. We call this observing your animal.

Healthy animals act differently from sick animals. Have you ever seen a sick calf? How does a sick calf look?

It is important that you learn to recognize the different ways a healthy and a sick calf act. And since animals are unable to talk, we must be very good observers.

If your calf has any of these signs (point to sick list), you can check to be sure it is sick by taking its temperature.

Have you ever had a fever? How did you know for sure what your temperature was? The normal body temperature of humans is 98.6°F Fahrenheit.

---

**Leader Notes**

Record group responses on a large sheet of newsprint. Add these characteristics if children don’t identify them:
- droopy ears and head
- dry, crusty, or snotty nose
- gaunt—gone off feed or water
- diarrhea, color and smell
- rapid or noisy breathing
- bloated stomach protruding left side
Let me show you the way we take the temperature of a calf. I will use a glass animal thermometer and then you can practice doing this on the model. First, you need to restrain the calf. If your animal is used to you, tying it up may be all you need to do. If not, or if it is really big, you may need to use a squeeze chute to keep it from moving around. Gently lift the tail and insert the thermometer into the rectum about 2 inches (show 2 inches on thermometer). You need to hold it there for about one minute or until you count to 60, (1001, 1002, 1003, etc.).

Stay calm and don’t move around while you are holding the thermometer in the calf or your animal will become nervous. After one minute, remove the thermometer and wipe it off quickly with a paper towel or clean rag; then read the temperature. You may need to have your parent or someone else help you do this. Sometimes it is hard to read. Write the temperature of your animal on a piece of paper so you won’t forget it.

What is your temperature when you are well? (98.6°F) A calf’s normal temperature is higher than yours. It is 101.5°F. If the calf’s temperature is higher than 102°F, you should seek help from an adult.

Another illness to watch for is called bloat. It is very much like when you have a stomachache caused by a lot of gas in your stomach. This sometimes occurs after eating food like beans. People generally have a way of relieving gas (be prepared for laughter), but sometimes calves can’t do this. What do you think might happen to the calf if it can’t pass gas? The part of the stomach where gas builds up in calves is called the rumen. You will know if this happens to your animal if its left side begins to swell, because that is where the rumen is located.

If your calf bloats, try walking it at a good pace to relieve the gas. If it is still bloated after 15 minutes of walking, call a veterinarian or someone who can help you. You must find a way to get rid of this gas, or the animal can die.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What are some of the signs of a sick calf?
2. What happened when taking the temperature of a calf or a model?

**Process:**
3. What problems, if any, did you have taking the temperature of a calf?
4. Why do you **not** put the thermometer in the calf’s mouth?
5. What is one simple way to try to get rid of bloat in a calf?
ACTIVITY

Generalize:
6. How is the calf thermometer different from others you have seen?

Apply:
7. What will you do different the next time you take a calf’s temperature?

8. What types of thermometers might you need for other animals?

GOING FURTHER:
• Visit a zoo or farm.
• Visit a veterinarian.

REFERENCES:
Minnesota Project Meeting Guide

Author:
Brian A. Swisher, County Extension Agent, 4-H Youth Programs, Kansas State University (adapted from “Examining a Healthy Animal,” Thomas D. Zurcher. University of Minnesota)

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Weaning Your Bucket Calf—
And Other Management Practices

Dairy Cattle, Level I

What Members Will Learn . . .

ABOUT THE PROJECT:
• How to wean your calf from milk
• How to feed your calf after weaning
• Other management practices

ABOUT THEMSELVES:
• Events in their life that cause stress
• How they feel about stressful activities

Materials Needed:
• Member Handout 3, Sample Calf Diets
• Activity Sheet 5, Calf Vaccination Schedule

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

There comes a time in your calf’s life when it must be weaned from milk. It is not practical to feed milk or milk replacer after calves are consuming enough dry feed to continue growing well. The change from a diet composed of milk and dry feed to one that is all dry feed can create some stress on your calf. This is one reason why it is important for your calf to eat calf starter and hay at an early age—so it will be somewhat adjusted to dry feed.

Weaning is a stressful experience for your calf. You may notice that your calf may bawl for milk for a couple of days, especially near feeding time. The change of its diet causes some stress, too.

Since weaning can be somewhat stressful on your calf, the only thing you should do at weaning is to discontinue feeding its liquid portion of the diet. Doing other things such as moving it to a group pen, dehorning, vaccinating, etc., can cause additional stress on your calf. Therefore, the only change that should be made in your calf’s life at weaning time is to wean it from milk or milk replacer.

Usually by the time calves are 6 weeks old they can be weaned from their liquid feeds. The key for determining when a calf can be weaned is the amount of calf starter it is eating. Calves can be weaned when they are consuming at least $1\frac{1}{2}$ pounds of calf starter per day.

Note: Two commercial mixes could be used.
WEANING YOUR BUCKET CALF

The amount of nutrients consumed is important to the recently weaned calf in order for it to continue growing well. Until the calf is about 3 months old, continue feeding all of the calf starter your calf will eat plus hay fed free choice. At that time, a less expensive grower mix could replace the more expensive calf starter.

About a week after your calf has been weaned, it can be moved to a group pen with six or seven other calves of similar size. Never put a recently weaned calf in a group of larger calves since small calves will not compete very well. Calves may be put into larger groups after they have made the social adjustment to competing with one another.

Your calf is going to need some shots, called vaccinations, to keep it healthy and prevent certain diseases later in life. You should consider the following vaccines: IBR-PI3, BVD, H. somnus, Shipping Fever, Black Leg, Lock Jaw, Malignant Edema, Brucellosis (if it is a heifer) and Leptospirosis. You need to visit with a veterinarian about which vaccines to use and when to use them.

Soon after your calf has been weaned is a good time to train it to lead. Your calf will not be as hard to handle at this age, and this training will be useful when it comes time to show it at the fair.

DIALOGUE FOR CRITICAL THINKING:

Share:
1. How did your calf or others act when their liquid milk was not given to them?
2. How well was your calf eating starter ration when weaned?

Process:
3. Why is it important for your calf to be eating 1 1/2 pounds of starter ration before weaning?
4. What are the significant differences between the starter and grower rations?
5. What was the most important thing you learned about shots for your calf?

Generalize:
6. Have you ever observed a younger brother or sister when your parents decided to quit giving them a bottle? How did the child react? Was this a stressful time for your family? Why or Why not?
7. Can you remember getting various shots when you were younger (before starting school)? What were the shots for? How did you feel about getting the shots? Why do you think the shots were needed before going to school?

ACTIVITY

Pass out Member Handout 3, Sample Calf Diets, and refer the members to the calf starter mix. Pour a starter mix in a bucket. Let members feel and smell the mix. Identify grains.

Show the members the example of a calf grower mix on Member Handout 3. Pour grower mix in a bucket to examine as before. Compare the two mixes for feel, smell, etc.

Give members Activity Sheet 5, Calf Vaccination Schedule. Discuss what shots are for, when and where to give them, and why they are needed. Have members record dates for their calves.

Show the members the example of a calf grower mix on Member Handout 3. Pour grower mix in a bucket to examine as before. Compare the two mixes for feel, smell, etc.

Give members Activity Sheet 5, Calf Vaccination Schedule. Discuss what shots are for, when and where to give them, and why they are needed. Have members record dates for their calves.

34–Dairy Cattle, Level 1
8. What are some other times in your life that you were maybe afraid or scared? (Staying overnight away from home, sleeping in a strange place or new room, first day of school, etc.)

9. How do you think you would feel if you only did one scary thing at a time rather than several at a time?

**Apply:**
10. Ask a nurse or doctor to discuss weaning babies from milk and giving shots for protection.

**GOING FURTHER:**
- Visit a dairy and observe how calves are housed and fed before and after weaning.
- Ask a dairy farmer about the age when calves are weaned and how they are fed after weaning.
- Ask a dairy farmer about their vaccination program.

**REFERENCES:**
Raising Dairy Heifers, C-721, Cooperative Extension Service, Manhattan, Kansas 1991

**Author:**
James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

**Reviewed by:**
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WEANING YOUR CALF—AND OTHER MANAGEMENT PRACTICES
DAIRY CATTLE, LEVEL 1
Member Handout 3, Sample Calf Diets

These diets could be taken to your local elevator for preparation or purchase a prepared commercial feed. Compare prices.

**CALF STARTER DIET**

- Corn, Cracked ....................... 52.0 pounds
- Oats, Rolled ......................... 20.0 pounds
- Soybean Meal ...................... 19.5 pounds
- Molasses .............................. 7.1 pounds
- Limestone, Ground .............. 1.0 pounds
- Trace Mineral Salt ............ 0.25 pounds
- Dicalcium Phosphate ......... 0.15 pounds
- Vitamin Supplement
  (Should supply 1000 I.U. vitamin A, 140 I.U. vitamin D, and 25 I.U. vitamin E per pound of starter)

**CALF GROWER DIET**

- Corn, Cracked ....................... 76.0 pounds
- Soybean Meal ...................... 17.0 pounds
- Molasses, Liquid ................. 5.0 pounds
- Limestone, Ground ............... 1.2 pounds
- Trace Mineral Salt .............. 0.3 pounds
- Dicalcium Phosphate ........ 0.3 pounds
- Salt ..................................... 0.2 pounds
- Vitamin ADE
- Vitamin A ............................ 1000 IU/lb
- Vitamin D ............................ 140 IU/lb
- Vitamin E ............................. 20 IU/lb
- Additives (Lasalocid and/or another coccidiostat may be added)
## Activity Sheet 5, Calf Vaccination Schedule

Insert dates for each vaccination.

<table>
<thead>
<tr>
<th>Vaccination</th>
<th>Insert Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Calf Born</td>
<td></td>
</tr>
<tr>
<td>IBR—PI3 (2–3 days old)</td>
<td></td>
</tr>
<tr>
<td>H. somnus (2–3 days old)</td>
<td></td>
</tr>
<tr>
<td>IBR—PI3 (6 weeks old)</td>
<td></td>
</tr>
<tr>
<td>BVD (6 weeks old)</td>
<td></td>
</tr>
<tr>
<td>H. somnus (6 weeks old)</td>
<td></td>
</tr>
<tr>
<td>Shipping Fever (6 weeks old)</td>
<td></td>
</tr>
<tr>
<td>Black Leg, Malignant Edema, Lock Jaw (6 weeks old)</td>
<td></td>
</tr>
<tr>
<td>Brucellosis (4–6 months old)</td>
<td></td>
</tr>
<tr>
<td>Black Leg, Malignant Edema, Lock Jaw (4–6 months old)</td>
<td></td>
</tr>
<tr>
<td>IBR—PI3 (6 months old)</td>
<td></td>
</tr>
<tr>
<td>H. somnus (6 months old)</td>
<td></td>
</tr>
<tr>
<td>BVD (6 months old)</td>
<td></td>
</tr>
<tr>
<td>IBR—PI3 (10–12 months old)</td>
<td></td>
</tr>
<tr>
<td>BVD (10–12 months old)</td>
<td></td>
</tr>
<tr>
<td>Black Leg, Malignant Edema, Lock Jaw (10–12 months old)</td>
<td></td>
</tr>
<tr>
<td>Leptospirosis (10–12 months old)</td>
<td></td>
</tr>
</tbody>
</table>
Training Your Calf to Lead

*Dairy Cattle, Level I*

**What Members Will Learn . . .**

**ABOUT THE PROJECT:**
- To train a dairy calf to lead
- To train a dairy calf for showing

**ABOUT THEMSELVES:**
- The value of patience
- The importance of being kind to others

**Materials Needed:**
- Halters (rope and strap)
- Brush

**ACTIVITY TIME NEEDED:** 30 MINUTES

**ACTIVITY**

Your dairy calf needs to be trained for leading for two reasons: it makes handling the animal much easier and a well-trained calf will compete much better in the show ring.

Training a calf to lead is sometimes time consuming and some calves will test your patience. However, after a few short lessons, you will be amazed at how well your calf responds to your training.

**TRAINING TO LEAD**

If you are raising your calf from birth, there are some things you can do to help when the time comes for training the calf to lead. During the milk feeding period, your calf will become gentler if you will pet it while feeding. If your calf is housed in a calf hutch, tethering it to the hutch with a dog collar and a 6-foot piece of chain will give you a “head start” in training the calf to lead.

A good time to train your calf to lead is soon after weaning. At this time the calf is small enough to be easily controlled. If your calf has never been tied, start by tying the calf in a shed with feed and water until it is accustomed to being tied. If your calf is accustomed to being tied, a good way to train your calf to lead is to keep the calf tied in a shed where it can be fed but not watered. Then, morning and evening you can lead your calf to water. After a few trips to water, the calf will soon respond to this reward. When you return from watering your calf, reward it with feed and give it a good brushing.

**Leader Notes**

If possible, this lesson should be conducted in a location where a small calf can be used for demonstration purposes.
In the beginning, you may need some help from someone to gently push your calf from behind. Try to lead your calf by not tugging hard on the halter. Instead, most of the pressure to encourage the calf to move should come from behind by someone pushing your calf. Remember, your calf will respond to kindness and praise better than to harsh treatment.

When tying your calf, a rope halter is OK if the calf does not struggle too much, in which case, the rope may irritate the bridge of its nose and cause a sore. A strap halter or one with some cushioning is recommended if the calf fights the halter when tied.

**BEGINNING TO TRAIN**

After the calf is easy to lead to water, continue keeping the calf tied and start training the calf to show. Dairy animals look best when they are walking with their heads up and taking short steps. Start leading your calf to water making it walk slowly and lifting on the chin strap to keep its head up.

Next, you need to train your calf to pose. Your calf needs to be trained to stand with its head held high when you put pressure on the halter. In addition, you should train your heifer to back by putting pressure on the calf’s shoulder with your right hand and pushing back on the halter with the left hand. This technique will be extremely useful in the show ring when you are posing your calf for the judge since sometimes you need to change the position of its feet.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What happened when you first tried to lead your calf?
2. What did you do to get your calf to lead easily?
3. How did you feel when your calf finally began to lead?

**Process:**
4. How do you think your calf learns best?

**Generalize:**
5. How do you feel when learning something new?
6. How does being kind to others make you feel?
7. How do you feel when a friend is kind to you?
8. What did you learn about being patient to others?
Apply:

9. If a calf responds better to kindness and praise, what do you think would be the best way to talk to friends or teach younger brothers and sisters something?

10. How will being patient be useful to you in the future?

GOING FURTHER:

• Attend a dairy show and observe that some animals are better trained than others for showing.
• Observe how experienced members show their animals with the head held high and walking slowly.

REFERENCES:

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The Proper Way to Wash Your Calf
*Dairy Cattle, Level I*

What Members Will Learn . . .

ABOUT THE PROJECT:
- How to wash a calf
- Learn the equipment needed to wash a calf

ABOUT THEMSELVES:
- The importance of their personal hygiene

Materials Needed:
- Bucket calf
- Livestock soap
- Rubber brush
- Sponge or rag
- Wash bucket
- Rice root brush
- Scotch comb
- Water hose
- Safe place to wash your calf; wash racks
- Fly repellant or livestock dip
- Activity Sheet 6, Word Search for Washing Your Calf
- Leader’s Key, Activity Sheet 6, Word Search for Washing Your Calf

ACTIVITY TIME NEEDED: 60 MINUTES

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>Leader Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEP 1: Washing your calf can be fun. But it can also be dangerous. This is not a time for games. Move slowly so as not to frighten your calf. Put a nylon halter on your calf as a rope halter will swell once it gets wet. Tie the calf leaving only a few inches of room on the rope. This will keep the calf from moving around.</td>
<td>Using a small calf, let each member participate in the wash job doing one step at a time under close supervision.</td>
</tr>
<tr>
<td>STEP 2: Fill a wash bucket with water from the hose and add enough livestock soap to form a lather. Use only soap that is recommended for livestock. Don’t put the soap directly on the calf as it may irritate the skin and cause dandruff and scaling.</td>
<td></td>
</tr>
<tr>
<td>STEP 3: Before wetting down the calf use the scotch comb and rice root brush to remove as much of the mud and dirt accumulated on the body of your calf</td>
<td></td>
</tr>
</tbody>
</table>
as possible. Turn the hose on medium pressure and use your finger to form a spray or use a spray nozzle on the hose. Starting at the calf’s feet, wet down its legs all around. Then slowly wet down its underline and work up the body toward the topline. Last, wet its head, holding the ears cupped closed with your hand. Don’t get water into the calf’s ears. If water enters the calf’s ear, its ear will hang down. If the water is allowed to remain, there is danger of infection. Once again, use the scotch comb to remove any mud on the calf.

STEP 4:  
Using the sponge or rag, apply soapy water from the wash bucket to the calf and scrub the calf with the rubber brush. Wash the legs and underline as well as the sides and topline. When you wash the head, again, be careful so that you don’t get water or soap in its ears.

STEP 5:  
To rinse the calf, work from the top down. First, rinse the head, cupping the ears closed with your hand. Then starting at the topline, rinse the soap completely out of the calf’s haircoat. Pay careful attention to this step as any soap left will cause dandruff.

STEP 6:  
Empty out the wash bucket and rinse it well. Then fill it with clean water and put one capful of fly repellant or livestock dip into the water. Carefully and slowly, pour the dip over the calf’s topline, starting at the shoulders and pouring toward the rump. Don’t pour this mixture on its head. This will cut down on the number of flies attacking your calf and will help with grooming the hair.

STEP 7:  
The last step is to brush and dry your calf. Using a scotch comb followed by a rice root brush, comb the hair on the body and legs with the lay of the hair. Brush or comb until the hair is smooth.

DIALOGUE FOR CRITICAL THINKING:  
Share:  
1. What happened when you or your group began wetting the calf?  
2. What were the easiest/hardest parts of the calf to wash? Why?  

Process:  
3. Why do you need to use a nylon halter when washing your calf?  
4. Why is it important to use the correct type of soap?  
5. Why is it important to keep water out of the calf’s ears?
Generalize:
6. Why do you think you were told to wash the calf by doing things in a special way or order?

7. Why is it important to follow directions closely when washing a calf or doing something important?

Apply:
8. Where else would you use this washing process? Discuss.

9. Why do you think your parents or teacher ask you to do certain things in a particular way?

GOING FURTHER:
• Go to a dairy show and observe cattle being washed.

REFERENCES:

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45–Dairy Cattle, Level 1
THE PROPER WAY TO WASH YOUR CALF
DAIRY CATTLE, LEVEL I
Activity Sheet 6, Word Search for Washing Your Calf

Directions: Look for and circle the items on this list needed to properly wash a calf. Some letters may be used more than once.

- water hose
- wash racks
- rubber brush
- fly repellant
- calf
- scotch comb
- sponge
- bucket
- dip
- soap

T H O W A S H R A C K S P
P S W A S H S A C A L A F
I U F Y O U U T D O O L L
D R N O T N R E E S A S Y
K B E E D A B K K C C P R
C R A S G E T C A O S O E
O E H O O W O U S T T N P
T B I H C T O B K C A G E
S B R R R S O R H P H E E L
E U H E A L E S T C E R L
V R V T E A C A R O M U A
I I F A F S I W O M R T N
L A I W L T R I E B S X T
THE PROPER WAY TO WASH YOUR CALF
DAIRY CATTLE, LEVEL I
Leader’s Key, Activity Sheet 6, Word Search for Washing Your Calf

Directions: Look for and circle the items on this list needed to properly wash a calf. Some letters may be used more than once.

- water hose
- wash racks
- rubber brush
- fly repellant
- calf
- scotch comb
- sponge
- bucket
- dip
- soap

THO
PSWASHHSAKLAF
IUFOOUTDOLL
DRNOTREEESASY
KBEEDABKCPR
CRAGETCASOEO
OEHOOUSTTNP
TBIHCTOBCAGE
SBRRSORHPHEEL
EUHEALESCTERL
VRVTEACAROMUA
IIFFASIWOMRTN
LAILWLTIREBSSXT
THE PROPER WAY TO WASH YOUR CALF
Being Prepared:
How to Pack a Tack Box for a Show
Dairy Cattle, Level I

What Members Will Learn . . .

ABOUT THE PROJECT:
• To identify important items to be packed in a tack box for a dairy cattle show
• Why each item is necessary and how it is used

ABOUT THEMSELVES:
• Importance of being organized

Materials Needed:
• Tack box packed with items listed below—could be obtained from an older member
• Paper and pencils for each member
• Activity Sheet 7, Being Prepared: Packing Tack for Show
• Leader’s Key, Activity Sheet 7, Being Prepared: Packing Tack for Show

ACTIVITY TIME NEEDED: 30 MINUTES

ACTIVITY

The tack box is a box used to carry equipment needed at a dairy show.

Water buckets: not the 5-gallon buckets, but instead a bucket that a dairy animal can get its head into all the way to the bottom.

Feed pans: one for each animal.

Show halters: calf size and cow size.

Currycomb: one for grooming when hair is long.

Rice root brush: at least one, use it to groom your animal to obtain a shiny hair coat.

Wash brush or rubber comb: use it to get your animal clean when washing—be sure it is sturdy enough to get wet.

Sand paper: to polish hooves.

Soap: you will need to use soap for washing a day or two before the show.

Leader Notes

There are many ways you could do this. If you have a packed tack box, empty it and as you refill it identify each item and explain its use—this can be done in any order. Or you could hold up an item and have members identify and explain it. You could even make a game out of it.

Give each member a piece of paper and pencil and have them list what they think are the five most important things to have in a tack box. There are no right or wrong answers. Have each member read his/her list and explain why they picked these items.
HOW TO PACK A TACK BOX

Tail comb: to tease the hair on the tail for show.

Clippers: for last minute trimming before the show.

Cloth rags and light oil: for polishing hooves and to wipe dust from hair coat.

Water hose and spray nozzle: to wash your animal.

Padlock: to lock your tack box and keep supplies safe.

Magic marker and stall cards: to hang above your animal in the stall for identification.

Extension cords: in case an outlet is not nearby when you use the clippers.

Electrical adapter: in case the outlet is not grounded.

Spare rope halters: in case the one your animal is wearing breaks.

Health Kit: contains syringe, antibiotics, etc., for your animal.

First Aid Kit: in case of minor accidents to yourself.

DIALOGUE FOR CRITICAL THINKING:

Share:
1. How big is your tack box?
2. What is in the tack box that you use the most? Why?

Process:
3. Why do you need a tack box?
4. How important is it to be able to find things quickly? What can you do to keep the tack box organized?

Generalize:
5. How will having a well-organized tack box help you be better prepared for the next show or fair?
6. What else might you need at a show? Why?

Apply:
7. What are other uses for a tack box?
8. What other 4-H or school events do you need to plan for, to be well organized?

List five important items for showing a bucket calf. Pass out Activity Sheet 7, Being Prepared: Packing Tack for a Show and have members complete the exercise for review.
REFERENCES:

Author:
Randy Perry, former Extension Assistant, Animal Sciences and Industry, Kansas State University
Deborah K. Lyons-Blythe, former County Extension Agent, Agriculture, Kansas State University

Edited by:
James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

Reviewed by:
James P. Adams, Extension Specialist, 4-H and Youth Programs, Kansas State University

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## BEING PREPARED: HOW TO PACK A TACK BOX FOR A SHOW

### DAIRY CATTLE, LEVEL I

Activity Sheet 7, Being Prepared: Packing Tack for a Show

Match the item with the correct use.

<table>
<thead>
<tr>
<th>Item</th>
<th>Use</th>
</tr>
</thead>
<tbody>
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<td>Water Bucket</td>
<td>To groom calf for shiny hair coat.</td>
</tr>
<tr>
<td>Curry Comb</td>
<td>For grooming when hair is long.</td>
</tr>
<tr>
<td>Rice Root Brush</td>
<td>To treat yourself for minor accidents.</td>
</tr>
<tr>
<td>Rubber Brush</td>
<td>To give your calf a drink.</td>
</tr>
<tr>
<td>Soap</td>
<td>For last minute trimming before the show.</td>
</tr>
<tr>
<td>Clippers</td>
<td>To fill out stall cards.</td>
</tr>
<tr>
<td>Padlock</td>
<td>To wash your calf.</td>
</tr>
<tr>
<td>Magic Marker</td>
<td>To help get your calf clean.</td>
</tr>
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<td>To lock tackbox and keep supplies safe.</td>
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## BEING PREPARED: HOW TO PACK A TACK BOX FOR A SHOW
### DAIRY CATTLE, LEVEL I
**Leader’s Key, Activity Sheet 7, Being Prepared: Packing Tack for a Show**

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Foster Mother of the Human Race — The Dairy Cow

Dairy Cattle, Level I

What Members Will Learn . . .

ABOUT THE PROJECT:
• The contribution the dairy cow makes to our diet
• How cows produce milk

ABOUT THEMSELVES:
• What dairy products are a part of their diet
• How they feel about the importance of the dairy cow

Materials Needed:
• Activity Sheet 8, Dairy Cow Quiz
• Leader’s Key, Activity Sheet 8, Dairy Cow Quiz

ACTIVITY TIME NEEDED: 45 MINUTES

ACTIVITY

All mammals produce enough milk to feed their young, but the dairy cow is a specialized milk producer because she produces enough milk to feed her calf and enough more to supply dairy products for 25 people. Because the dairy cow makes an important contribution to our diet by supplying nutritious dairy products, she is known as “The Foster Mother of the Human Race.”

Milk and dairy products have played an important role in America’s history since 1611 when the first cows were brought to Jamestown, Virginia. Our forefathers understood the necessity of having dairy cows to furnish them with nutritious dairy products at a time when the food supply was not plentiful. The need for these same products still exists today, but we tend to take the plentiful supply of dairy products for granted because they are so readily available.

The average dairy cow produces about 14,000 pounds (1625 gallons) of milk each year. Some cows produce more than twice this amount of milk. The efficiency of the dairy cow to produce milk is the result of many years of selection for this characteristic. During the last 10 years milk production per cow has increased almost 22 percent!

The dairy cow eats about 80 pounds of feed and drinks about 30 gallons of water each day which is why she is able to produce so much milk. The dairy cow’s appetite is bigger than any other farm animal.

Leader Notes

Give each member Activity Sheet 8, Dairy Cow Quiz as a pretest to build their curiosity. Quiz can be given individually, in pairs or small groups.

Let members discuss their answers and share with each other before discussing the information in the lesson.
The dairy cow efficiently changes the feed she eats into milk for us to enjoy. She eats large amounts of forages (pasture, hay and silage) plus grain, protein supplement, minerals and vitamins to produce a large quantity of milk. About one-half of the feed eaten by dairy cows is forage. Since we do not eat pasture, hay, or silage, the dairy cow is not in competition with humans for much of her feed supply.

The dairy cow actually converts low quality feed into milk that is much more nutritious than the feed she consumed. Milk is known as an almost perfect food because of the nutrients it contains.

Milk is an excellent source of protein which is needed for growth and development. The protein of milk contains all of the essential amino acids (building blocks) required in our diet. Calcium is also generously supplied by milk for building strong bones and teeth. About 75 percent of the calcium in our diet comes from milk and dairy products. Milk is also rich in vitamins which are required for important processes in our body.

The dairy cow has four compartments in her stomach which allow her to eat and use large amounts of feed. Proteins, minerals and vitamins are carried in the bloodstream and are provided to help make milk.

About half of the milk produced by dairy cows is consumed as fluid milk, either whole milk, skim milk, butter milk, or chocolate milk. The remainder of the milk supply is made into dairy products, such as, cheese, cottage cheese, butter, powdered milk, yogurt, and ice cream. All of these dairy products are excellent sources of the nutrients found in milk.

So, the dairy cow is known as the foster mother of the human race because she is able to convert raw materials (feed) into milk which is an almost ideal source of nutrients for the human race.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**
1. What do you think is the most exciting thing you learned about the dairy cow?
2. What are the main foods for the cow?

**Process:**
3. Why do you think milk is such an important food for people?
4. What other milk products do you like? Why?
5. Why do you think the dairy cow is called the “foster mother of the human race?”
Generalize:
6. How many dairy products do you eat each day and how important are they to you?

Apply:
7. Talk about how important the dairy cow is to the human race. How would life be different without dairy cattle and milk?

GOING FURTHER:
• Visit a supermarket and observe all of the different kinds of dairy products.

REFERENCES:

Author:
James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

Reviewed by:
Edward P. Call, Professor Emeritus, Dairy Science, Kansas State University
James P. Adams, Extension Specialist, 4-H and Youth Program, Kansas State University

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FOSTER MOTHER OF THE HUMAN RACE—THE DAIRY COW
DAIRY CATTLE, LEVEL I
Activity Sheet 8, Dairy Cow Quiz

Fill in the blanks of the following statements from the following list:

ice cream 25 calcium
ruminant 80 14,000
vitamins protein 30
1611 cheese perfect
butter

1. Some of the non-fluid products made from milk are _______________, _______________ and _______________.

2. Milk is known as an almost _______________ food.

3. Milk is an excellent source of _______________, _______________ and _______________ for your diet.

4. The average dairy cow produces about _______________ pounds of milk each year.

5. The first dairy cows were brought to this country in the year _______________.

6. The dairy cow can consume and digest large amounts of forage because she is a _______________.

7. One dairy cow produces enough milk to feed her calf and supplies dairy products for _______________ people.

8. A dairy cow eats about _______________ pounds of feed each day.

9. A dairy cow drinks about _______________ gallons of water each day.
FOSTER MOTHER OF THE HUMAN RACE—THE DAIRY COW
DAIRY CATTLE, LEVEL I
Leader’s Key, Activity Sheet 8, Dairy Cow Quiz

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- ruminant
- 80
- 14,000
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- 30
- 1611
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