

County _____

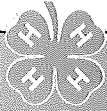
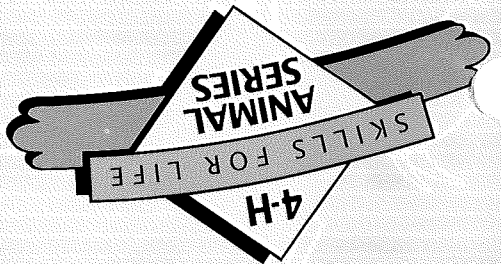
Name _____

Dairy Goat Project Activities

Level 2



Stepping Out



Note to the Project Helper

If you were a project helper for one or more youth who participated in Dairy Goat 1, *Getting Your Goat*, you know what a rewarding and important role this is. As a helper, you are able to help youth grow and develop in positive ways as they learn about dairy goats and about themselves. You can nurture and cultivate their interest in this project by guiding their planning, helping them complete their projects and recognizing them for a job well done.

Your Role

- Become familiar with the material in this activity guide and the *Helper's Guide*
- Support youth in their efforts to set goals and complete the *Stepping Out* Achievement Program
- Help youth get to know themselves, including their strengths and weaknesses
- Encourage the use of the experiential learning cycle described on this page

About These 4-H Activity Guides

These guides are not textbooks. They are activity guides. Several fact-filled books about goats are listed as resources on page 36 of this guide. 4-H activities are active, hands-on, engaging activities that are guided by the 4-H motto: Learning by Doing.

As youth explore a dairy goat project of interest to them, they also practice important life skills. Although a few dairy goat project youth will find careers with goats, ALL youth will benefit from the life skills they acquire as they complete the activities in these guides.

Learner Outcomes

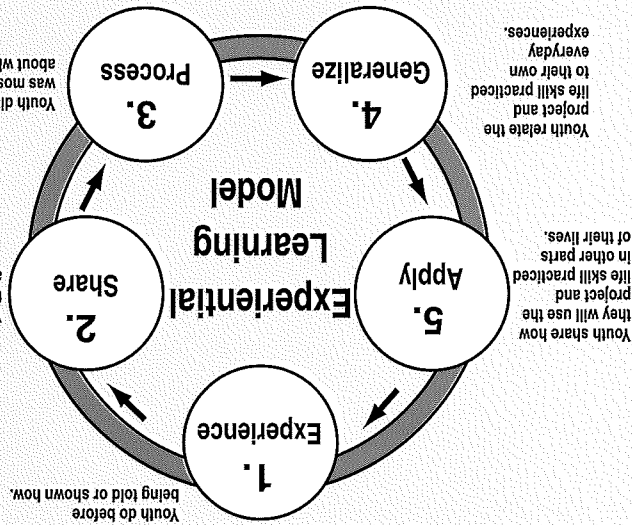
Youth who explore this curriculum will develop essential dairy goat project skills such as demonstrating proper goat management and health practices, developing goat fitting and showing skills, selecting a goat that will meet their needs, promoting goat products and the goat industry and comprehending national and international goat-related issues. Youth will also practice the life skills of record keeping, decision making, leadership, communication, planning and organizing and more.

Experiential Learning Model

This five-step model is included in each activity in this series.

Experiential Learning Model

Pfeiffer, J.W., & Jones, J.E.,
 "Reference Guide to Handbooks and
 Annals" © 1983 John Wiley & Sons,
 Inc. Reprinted with permission of
 John Wiley & Sons, Inc.



Good luck in your role as Project Helper and thanks for contributing to the positive development of young people!

Dairy Goat Helper's Guide

The Dairy Goat *Helper's Guide* provides additional learn-by-doing activities that can be adapted for families, classrooms, after school camps. It also contains information about characteristics of youth, the skill development, teaching experientially, group meeting ideas and answers to many of the activities in the youth guides.

All activities include a description of the skills to be practiced, discussion questions, suggestions for additional activities ("Udder Ideas") and other helpful information. Vocabulary words are *italicized* and included in each book's glossary ("Beat Street Talk"). The Success Indicator listed for each activity is an excellent way to evaluate the youth's success. Each of the guides includes an achievement program to encourage youth to learn more about dairy goats while developing important life skills. "My Brain Gain" is a quick and fun way for youth to assess their knowledge before and after they complete the Achievement Program. In the *Helper's Guide* you will find another evaluation piece titled "Evaluating the Impact." Use this before beginning each level and after the youth has completed each level.

Guides 1, 2 and 3 are developmentally appropriate for grades 3-5, 6-8 and 9-12 respectively, but may be used by youth in any grade based on their project skills and experience.

The Dairy Goat Series

- 1 - Getting Your Goat 4-H BU-08352
- 2 - Stepping Out 4-H BU-08353
- 3 - Showing the Way 4-H BU-08354
- 4-H BU-08355

As you can see, the youth first attempt the activity on their own. After the youth do as much of the activity as they can, you then meet together and discuss: What did they do? What was important? How does what they did relate to their lives? How might they use these life and project skills in the future? Your ability to ask thought-provoking questions and listen to the youth's ideas will add to the educational impact of the experience.

What's Inside?

Stepping Out

Note to the Project Helper Inside Front Cover

1 What's Inside?

2 Welcome to Stepping Out

3 Stepping Out Planning Guide

4 Stepping Out Achievement Program

5 Stepping Out Completion Certificate and Photo Gallery

6 Horns and Hooves and Worms, Oh My!

8 Two Words, First Word Sounds Like

10 All Stocked Up

12 Goats Eat Oats and

14 Hey, How's That Hay?

16 Got More Milk?

18 The Heat is On!

20 Here Come the Kids!

22 Kidding Around

24 Milk It for all it's Worth

26 CSI: Mastitis

28 And the Winner Is

30 Talk Like a Judge

32 Ethics: A Good Value

34 Beat Street Talk 2 (Glossary)

36 Goat Resources

36 Photo Credits

..... Inside Back Cover

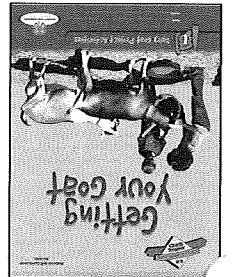
4-H Product Review Team: Susan Kerr, WA, Chair; Steve Sutton, TN; Mandy Marable, GA; Tom Zurcher, MI

Graphic Design: Northern Design Group, MN

Financial Support: National 4-H Curriculum

Dairy Goat 1

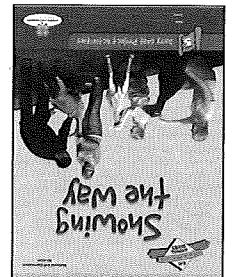
Chapter 1 Selection and Judging
So, You Think a Goat Is for You
All Goats Are Not the Same!
Parts from Polls to Pasterns
Chapter 2 Feeds and Nutrition
The Big Switch
Checking the Tag
Chapter 3 Management Skills
Goat Security Check
May I Check Your Goat?
When I Get "A Round Tull"
For the Record
Chapter 4 Fitting and Showing
Show Time!
Looking Good!
Show Like a Pro
Be a Sport
Chapter 5 The World of Goats
Delightful Dairy Products



4-H BU-08352

Dairy Goat 3

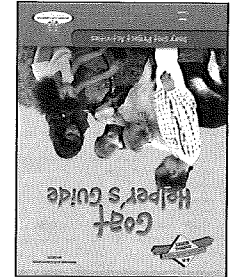
Showing the Way
Chapter 1 Health and Management Skills
Getting Parasites Out of Sight
One Fish, Two Fish, Red Fish, Blue Fish!
What's the Score?
Two, Four, Six, Eight, Now
It's Time to Evaluate!
Chapter 2 Genetics and Reproduction
Breeding Up
Hip Hip Hoopay for DNA
Thaw the Straw or Truck the Buck?
Twist and Shout, Get That Kid Out!
Chapter 3 Leadership
Goat for the Gold
Y'all Come!
Are Goats in Your Future?
Chapter 4 National and International Issues
Up, Up and Away!
Putting Your Best Hoof Forward
Global Greatness of Goats



4-H BU-08354

Dairy Goat Helper's Guide

Chapter 1 Games and Activities
G-O-A-T-S Bingo
Demo Time!
Show What You Know!
Goatees and X, Y, Zs
Playing Goat Pyramid
Hit the Road!
Bowling for Answers
Teaching with Triangle Tag
Chapter 2 Dairy Goat Project Skills
Plan Your Project Year
OSHA for Goats?
The Circle of Life
Record-Setting Fun
Chapter 3 Developing Character
Animal Welfare: Helping Animals
"Fair" Well
Goodbye Old Friend



4-H BU-08355

Acknowledgments

2006 4-H Dairy Goat Revision Team: Gary Fredricks, WA, Coordinator; Susan Kerr, WA, Writer and Liaison; Steve Sutton, TN; Sierra Ham, TN; Jo Ellen Roehrig, NY; Cindy Bean, WA; Tatiana Luisa Stanton, NY; Ashley Conway, WA; and Amber Conway, WA.

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Welcome to Stepping Out

Whying In

Congratulations! If you are reading this, you probably have completed Level 1 of the 4-H dairy goat curriculum series, *Getting Your Goat*. You've already learned a lot about goats, including breeds, body parts, nutrition, management, record keeping, showing and much more. In *Stepping Out*, you will build on what you learned. You will investigate diseases, feeding, reproduction, milking, judging, ethics and lots more. You'll also gain life skills along the way—important skills like communication, leadership, record keeping, decision making and planning and organizing—skills that will be valuable to you long after this project is completed.

The activities in *Stepping Out* are more challenging than the activities in *Getting Your Goat* because you are now older, more experienced, more confident and more knowledgeable. You are asked to expand your horizons and help plan some activities. You'll delve deeper into some topics and practice your communication and research skills, too.

- Master basic goat management skills
- Recognize and prevent dairy goat diseases
- Stock a goat medicine cabinet
- Formulate a balanced ration
- Recognize quality forage
- Feed for different production levels
- Recognize signs of estrus in a doe
- Prepare for normal kidding
- Care for newborn kids
- Master milking procedures
- Use mastitis detection tools
- Judge dairy goats
- Give oral reasons
- Practice ethical basis for actions

Have fun and enjoy these activities as you learn more about dairy goats. You'll be in Level 3 in no time!

Stepping Out

Project Guidelines

- Set your goals and record project highlights
- Do at least seven activities in the *Stepping Out* Achievement Program each year and complete the program within three years
- Practice and develop the life skills of decision making, leadership, communication, record keeping and planning and organizing
- Increase your knowledge about goats and improve your skills needed to be a good goat caretaker

Stepping Out Achievement Program

While you are having fun doing the activities, you'll also be completing the *Stepping Out* Achievement Program. This program will help you set goals, record your successes and be recognized for your hard work. When you complete the program, you can earn the Completion Certificate on page 5.

Your Project Helper

Your project helper is on your team supporting you and making learning more fun. This person may be a parent, goat breeder, veterinarian, project leader, advisor, neighbor or older friend who knows about goats. The choice is yours. As you do the activities, you'll discuss with your helper what you did and answer the questions in the "Ruminations" part of each activity. Sometimes your helper will work with you to find resources, including people, organizations, Web sites, events, magazines and books necessary to complete an activity. After you have successfully completed each activity, your helper will date and initial your achievement program.

Write your project helper's contact information here:

My project helper:

Phone:

E-mail:

Good Luck and Have Fun with Dairy Goat 2 Stepping Out

Stepping out Planning Guide

Dairy Goat Project Highlights

Date and list the exciting things you do and learn.

Attach a photo or drawing of you and your goat here.

My Dairy Goat Project Goals

My name _____
 My animal's name or number _____
 Breed _____
 What I want to do and learn in *Stepping Out*

1. _____
2. _____
3. _____
4. _____
5. _____

My Brain Gain

Here's an easy way to tell if you learned something new and developed important project skills. **BEFORE** you do the activities in this guide, circle the number that is the best measurement of what you know before the activity, then circle the number that is the best measurement of what you know **AFTER** you complete the activity. You may be surprised how much you learned! Share the results with your helper.

Begin each statement with the words "I know how to..." then circle: 1 (not at all), 2 (somewhat) or 3 (a lot).

I know how to...		Before	After
Conduct a goal management skills day		1 2 3	1 2 3
Explain cause, signs, diagnosis and prevention of common dairy goat diseases		1 2 3	1 2 3
Stock a goat medicine cabinet		1 2 3	1 2 3
Formulate a balanced ration		1 2 3	1 2 3
Explain reasons for hay judging decisions		1 2 3	1 2 3
Feed for various production levels		1 2 3	1 2 3
Describe signs of estrus in a doe		1 2 3	1 2 3
Describe a normal delivery and how to prepare for it		1 2 3	1 2 3
Conduct a skillathon to practice caring for newborn kids		1 2 3	1 2 3
Describe proper milking procedures		1 2 3	1 2 3
Explain how to detect clinical and subclinical mastitis		1 2 3	1 2 3
Compare the strengths and weaknesses of two goats		1 2 3	1 2 3
Judge goats and give oral reasons for placings		1 2 3	1 2 3
Explain consequences of ethical and unethical behavior		1 2 3	1 2 3

Stepping Out Achievement Program

Directions

- Do at least seven of the *Stepping Out* and/or "Udder Ideas" activities each year.
- Complete at least 21 of the *Stepping Out* and/or "Udder Ideas" activities within three years to complete this Achievement Program.
- Have your project helper date and initial the activities as you complete and discuss them.
- Complete the "My Brain Gain" survey after you do the activities in this book.

Activity	Date	Helper's initials
Chapter 1 Health and Management		
Horns and Hooves and Worms, Oh My!		
Two Words, First Word Sounds Like...		
All Stocked Up		
Chapter 2 Feeds and Nutrition		
Goats Eat Oats and...		
Hey, How's That Hay?		
Got More Milk?		
Chapter 3 Reproduction		
Crackin' Down on Heat Detection		
Here Come the Kids!		
Kidding Around		
Chapter 4 Milk and Milking		
Milk It for All It's Worth		
CSI: Mastitis		
Chapter 5 Judging		
And the Winner Is ...		
Talk Like a Judge		
Ethics: A Good Value		

Udder Ideas

Select and do any of the "Udder Ideas" activities in *Stepping Out* or make up your own. Record the page and number of each one you complete and get your helper's initials.

Page	Number	Date completed	Helper's initials

Write your own activity here.

Date	Helper's initials

Write your own activity here.

Date	Helper's initials

Write your own activity here.

Date	Helper's initials

Stepping out Completion Certificate

I certify that

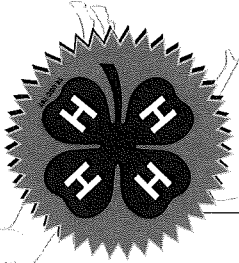
_____ has completed all requirements of the

Stepping Out Achievement Program

in the 4-H Dairy Goat Series.

Helper's Signature _____

Date _____



In this space, paste a drawing or photo of you and your goat in Year #1 of *Stepping Out*.

In this space, paste a drawing or photo of you and your goat in Year #2 of *Stepping Out*.

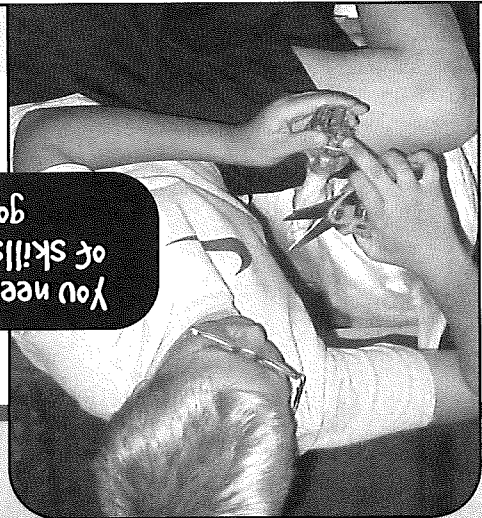
In this space, paste a drawing or photo of you and your goat in Year #3 of *Stepping Out*.

Horns and Hooves and Worms, Oh My!

As you have probably discovered, many routine management practices are needed to keep goats healthy. If you haven't mastered these basic skills yet, this activity is just what you need. You'll also practice your planning skills as you take on the leadership responsibilities needed. Get ready for an educational and exciting event!

Goat to it!

With your group, plan a Goat Management Skills day. Discuss what will be needed to sponsor a successful event. You may choose to open your event to the public or just invite other goat project youth. The outline below may help you or you may choose to use another planning guide. Attach your planning notes to this page. Ask your local newspaper to cover your event.



You need to master a lot of skills to care for your goat properly.

Our Goat Management Skills Day Planning Guide

Teachers and resource people		
Date of event		Location
Skill(s) to emphasize		
Item	Who is responsible?	Deadline
Advertising plan		
Refreshments		
Sanitation plan		
Equipment needed		
Evaluation method		
Schedule for the day		
Other		
Other		
Completed?	Deadline	Completed?

Discuss the answers to these questions with your helper.

Ruminations

Say cheese! (Share what you did)

- What skill(s) did you focus on?
- What was the biggest planning challenge you faced?

The Buck Stops Here (Process what's important)

- What routine skills do goat producers need to have?
- Why is thorough planning needed before a big event?

- Which skills could you already do and which were new to you?
- What other events have you helped plan or sponsor?

Spread It Around (Generalize to your life)

- If you did this event again, what would you change?
- How can you improve your goat management skills?

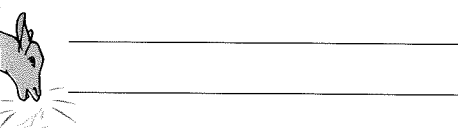
Browse For More (Apply what you learned)

- Vermoin
- Coccidiostat
- Bleaf Talk

- Ask your 4-H agent to help you obtain insurance for your event.
- Remember to follow all food safety guidelines for the refreshments you will serve.

Revised by Susan Kerr.

Bits & Butts



Keep 'em Healthy

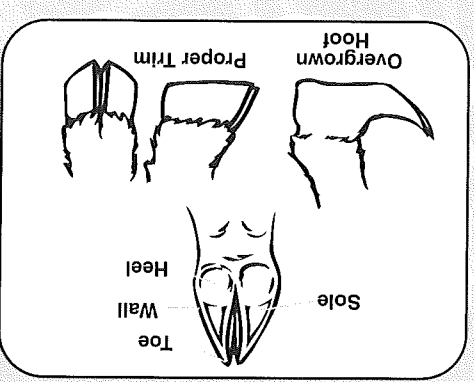
Why Cool facts

Disbudding - Disbudding keeps dairy goat kids from growing horns and hurting each other or you. Most dairy goat shows will not allow animals with horns. Disbud before kids are a week old. Use a disbudding box to restrain the kid. Have an experienced goat producer show you how to disbud several times before you do one yourself. Dangers include heating too much (which will damage the kid's brain) and heating too little (the horns will grow back). Never use disbudding pastes or caustic sticks. They can cause blindness in the kid and under burns to the dam. Apply ice to the kid's head after disbudding. Discuss other pain control options with your veterinarian.

De worming - Controlling worms in your herd should be a part of your total herd health program. Medications help control worms but are not a substitute for good management habits. Always keep pen areas clean and dry; keep food and water supplies fresh and clean; remove animal wastes promptly; keep cats and vermin out of goats' feed; keep goats out of wet, marshy areas; do not graze pastures down below three inches tall; use legal coccidiostats in kids' grain or minerals; feed hay above the ground. Work with your veterinarian to select the best dewormer and deworming program for your herd.

Castro n - Kids can be castrated from one week to several months old. Elastic bands may be applied to the top of a young buckling's scrotum; there is no open wound to get infected, but you must be sure that both testicles are below the band and the band isn't too close to the body and blocking urine flow. Testicles can also be removed by cutting the scrotum with a knife and removing the testicles, but an experienced goat producer should show you how to do this. Also make sure the kid has a high level of tetanus antibodies, either from colostrum or a tetanus anti-toxin injection.

Hoof Trimming - A goat's hooves should be trimmed every six weeks or as needed. Neglected hooves can lead to foot rot, lameness, cracked walls, uneven milk production. Use hoof trimmers or pruning shears. Never use a knife. Avoid cutting into pink areas of the heel or sole or the goat will bleed. Clean dirt from the sole and trim the walls so they are level with the sole. Trim the heels so they are level with the ground. Trim the toe off to proper length and trim the dewclaws as needed. When finished, the ground-hoof line should be parallel to the hoof-hair line.



Identification - Identifying each goat is essential for accurate record keeping. The preferred form of identification is ear tattooing for goats. LaManchas are tattooed in the tail web. The National Scrapie Eradication Program requires goat owners to tag or tattoo every breeding animal with a herd identification number. If you tattoo registered animals, your breed association will assign you a number to use. Disinfect ear taggers and prevent disease transmission.

Conduct a short survey after your event so participants can give you their feedback about how effective the day was. This will help you make the program better next time.

1. Sponsor a workshop to help others learn how to build a disbudding box.
2. Make a scrapbook of your Goat Management Skills day and share it with your group. Include photos, planning notes, newspaper articles, comments from participants, etc.

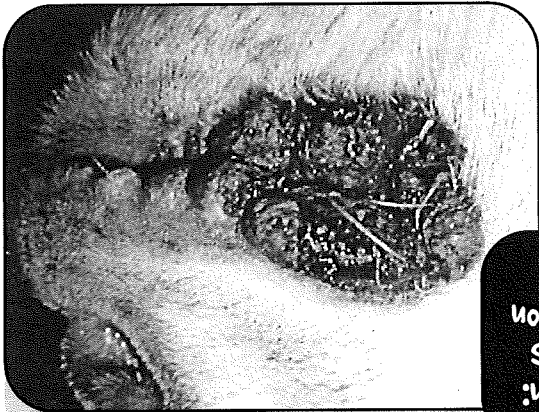
Udder Ideas

This game is like charades in reverse. Someone should volunteer to be the first to act out the disease they investigated but they will start by acting out prevention steps, then diagnosis, signs of illness, cause and finally the name of the disease. The other youth can work alone or in teams to guess what the youth is acting out. A key point is that you can't jump ahead and guess the name of the disease until all the

previous categories have been acted out. Someone should be scorekeeper and identify the first person to guess each charade correctly. If someone jumped ahead to another category, they lose the number of points of the category to which they jumped. The group can establish other rules or the game can be played just for fun with no scorekeeping.

Name of disease (5 points)			
Cause (4 points)	Signs of illness (3 points)	How to diagnose (2 points)	Prevention (1 point)

Photo courtesy Keith Thompson, Massey University, New Zealand. Used with permission.



Sore Mouth:
Note scabs and crusts on mouth.

Work on your own or gather a group of youth interested in investigating dairy goat diseases. Assign or let each person select one or more disease(s) to investigate. Everyone should summarize the key points of each disease on a 3 x 5 card using the format shown below. You could bring resources for everyone to use, everyone could bring his/her own or everyone could take his/her assignment home to work on and bring the finished card(s) to the next meeting. If you are working alone, you may stop here.

Goat to it!

Just like in any other finely-tuned machine, plenty of things can go wrong with a dairy goat. They can experience nutritional, bacterial, viral and many other types of diseases. All these diseases can be overwhelming to learn about! This activity will encourage you to research dairy diseases on your own, then reinforce learning through an enjoyable game. Through research, peer support, adult encouragement and a fun learning environment, you will become familiar with the major diseases of dairy goats.

Two words, first word sounds like...

Dairy Goat	Recognizing and preventing dairy goat diseases
Life Skill:	Communication
Education	NS-5-8.6: Personal and social perspectives: Natural hazards
Standard:	Explains causes, signs, diagnosis and prevention of common dairy goat diseases.
Success Indicator:	

1. Travel with a veterinarian for a day and keep a journal about the dairy goat diseases and illnesses you see, then share what you saw with your helper or group.
2. Develop games or activities to help younger dairy goat project youth learn about goat diseases.

Under Ideas



Bleat Street talk

Laminitis

Milk fever

Navel ill

- How can you use what you learned to prevent diseases in your animal(s)?
- How can you use a game like charades to help you improve your communication skills?

Browse for More (Apply what you learned)

- What other games have you played to learn new information?
- What is your preferred learning style?

Spread It Around (Generalize to your life)

- Why do you need to become good at communicating information to others?
- Why is it essential to be able to recognize signs of disease in your animal?

The Buck Stops Here (Process what's important)

- How is playing games a fun way to learn?
- What diseases that you investigated were new to you?

Say Cressel (Share what you did)

Discuss the answers to these questions with your helper.

Ruminations

- Toxic indigestion
- Pneumonia
- Rabies
- Mastitis
- Milk Fever
- Retained placenta
- Ketosis
- Blackleg
- Bloat
- Pinkeye
- Dystocia
- Lymphosarcoma
- Tuberculosis
- Brucellosis
- Polioencephalomalacia
- Listeriosis
- White muscle disease
- Coccidiosis
- Lice
- Johne's disease
- Mange
- Wooden tongue
- Foot rot
- Laminitis (founder)
- Navel ill
- Bottle jaw
- Acidosis
- Ringworm
- Proapsed uterus
- Metritis
- Caseous
- Lymphadenitis
- (abscesses)
- Caprine Arthritis
- Encephalitis virus
- Tetanus
- Parasites
- Poisoning

Here is a list of major and minor conditions of dairy goats you could select from for this activity.

When Your Wether is Under the Weather

Why Cool facts



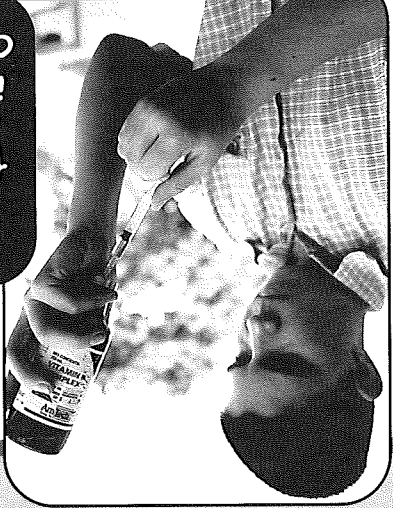
Goat with fetanus

Photo courtesy Dr. James Thompson, Somerset Animal Hospital. Used with permission.

Item	Estimated cost	Actual cost	Priority	Check if have item

My Goat Medicine Cabinet Supplies

Make sure you know how to use and store all medications in your medicine cabinet properly!



In the first column of the chart below, write down every item you think you'll need in your goat medicine cabinet; attach a separate page if you need more room. In the next column, write down what you think this item will cost. Now do some research—check supply catalogs, feed stores, your veterinarian's office or Web sites to determine the actual cost of each item. Your budget may not allow you to purchase every item you want, so prioritize each item—which are the most important? Finally, put a check in the last column if you already have or could borrow this item.

Goat to it!

Dairy Goat Skill: Stocking a medicine cabinet

Life Skill: Decision making

Education: NL-ENG-K-12.8: Developing research skills

Standard: research skills

Success Indicator: Creates an inventory list for a goat medicine cabinet.

It's 10 PM on a Saturday and your goat has just cut herself. All the stores are closed. What will you do? Well, if you have a well-stocked medicine cabinet, you won't have to panic. This activity will help you think through your goat's routine and emergency health needs and gather what you'll need to care for her.

All Stocked Up

Say cheese! (Share what you did)

- What did you include in your medicine cabinet?
- What items did you already have?

The Buck Stops Here (Process what's important)

- What is the purpose of a medicine cabinet?
- How did you decide what items to include in your goat's medicine cabinet?

Spread It Around (Generalize to your life)

- What is in your family's medicine cabinet?
- What is missing from your family's medicine cabinet that should be there?

Browse for More (Apply what you learned)

- How will you make sure your goat's medicine cabinet stays up-to-date?
- How can you remember the purpose of each item in your goat's medicine cabinet?

Probiotic

quality assurance

Bleat Street Talk



WARNING
Extra-label use means using a medication in a species, at a dose rate or in a way not specifically listed on the label. It is legal only with the approval of a licensed veterinarian. It is a violation of federal law to use a medication without this permission.

Udder Ideas

1. Working with other members of your family, inventory and organize the supplies in your home's medicine cabinet.
2. Assemble an emergency first aid kit to put in your car.

Your goat medicine cabinet will help you handle a lot of your goat's first aid needs, but call your veterinarian whenever you have questions about an animal's injury or illness.

Bits Butts

Record Keeping
Record keeping is essential! Your quality assurance program requires you to record all treatments given to your animal. Record medications given, dates, dose, route of administration, product given, product serial number, withholding time for meat and milk and the animal's identity. Also include the cost of the treatment and the prescribing veterinarian's contact information.

Storage
Some items may need special storage, such as away from light or at a certain temperature. Follow the directions on the label. Note expiration dates and replace items as needed.

- Mineral oil
- Baking soda
- *Probiotic* paste
- Bandage material
- Adhesive tape
- Sterile gauze pads
- Antibiotics
- Electrolytes
- Hoof rot medication
- Stethoscope
- Epinephrine
- Scissors
- Forceps
- Hemostats
- Small flashlight
- Thermometer
- Weight tape
- Syringes
- Needles
- Dewormers
- Hydrogen peroxide
- 7% iodine
- Udder ointment
- Tetanus anti-toxin
- C and D anti-toxin
- Anti-inflammatory medications
- Anti-histamines
- Tube feeder
- Colostrum
- CMT paddle and reagent
- Coccidiosis treatment
- Louse powder
- Activated charcoal
- Rubbing alcohol
- CDT vaccine
- Thiamin or Vitamin B complex
- Injectable Vitamin E/Selenium
- Ant-acid or anti-diarrhea medications if recommended by your veterinarian

Here is a list of suggested items to include in a goat medicine cabinet. Your list could have more or fewer items. Very few medications are approved for use in goats, so work with your veterinarian to obtain permission to use medications not otherwise approved for goats.

Stocking Up

Why Cool facts

Goats Eat Oats and ...

Just like you, goats have specific nutritional requirements to stay healthy. As a goat caretaker, you need to understand the nutrient groups and the ingredients rich in those nutrients. This knowledge will help you put together a ration that is *balanced*.

Dairy Goat	Formulates a balanced diet
Skill:	Communication
Life Skill:	Recognize and apply mathematics in contexts outside of mathematics
Education	NM-PROB.CONN.PK-12.3:
Standard:	Formulates a ration that has all the nutrient groups represented.
Success Indicator:	

This activity has three parts. First, match the nutrient groups with the descriptions (each number may be used more than once). Second, create a ration for a particular goat. Third, present your ration to your helper or family, giving reasons for each ingredient selected.

My Goat's Ration

Type of goat _____

Stage of production _____

Total amount fed per day (pounds) _____

Ingredients	% in Ration	Ingredient Nutrient Group
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

100%

- Nutrient Group**
1. Protein
 2. Water
 3. Minerals
 4. Energy
 5. Vitamins

- Description**
- _____ a. Least expensive feed ingredient
 - _____ b. Supplied by green pastures and sunshine
 - _____ c. Provided by forages and grains
 - _____ d. A, B, C, D, E and K
 - _____ e. Should have access to this nutrient at all times
 - _____ f. Calcium and phosphorus
 - _____ g. Most expensive part of the ration
 - _____ h. Salt
 - _____ i. Ration should contain 16% of this for high milk production
 - _____ j. Copper, selenium and zinc
 - _____ k. Alfalfa hay or soybean meal
 - _____ l. Corn, barley or oats



Learn to recognize feed ingredients and feed your animal properly.



1. Explain to your helper why goats can survive by eating hay but cats and dogs cannot.
2. Start a feed sample collection. Collect and label as many different types of feed samples as you can. Use your collection to create educational games and activities for a group. Replace samples as needed to keep them fresh.

Under Ideas

Protein Requirements (% of ration)	
Kids	12% to 14% protein between weaning and seven months, 9% protein thereafter
Does	9% protein when dry 12-16% protein when lactating
Bucks and wethers	9% protein

Protein Requirements (% of ration)

2. Grain. If you think your goat is not gaining weight, is too thin, has a dull coat or other signs of inadequate nutrition, increase the grain from four to eight ounces over a three to five day period. If you add more grain, add baking soda to the grain or provide baking soda free choice. More grain means a more acid rumen. Acid can kill normal rumen bacteria, which causes digestive problems for the goat. Probiotics can be added to the diet to help ensure your goat has healthy rumen bacteria while being fed grain.

1. No grain. Provide at least one daily feeding of good grass hay plus a mineral mix. Keep the calcium-to-phosphorus ratio between 2:1 and 3:1. Using a dairy vitamin/mineral salt will accomplish this. For bucks and wethers that need more fat and muscle on them, feed a supplement that has about 30% fat and 16% protein. A 50-pound animal only needs about one teaspoon of this supplement daily.

Bucks and Wethers—Healthy Feeding Options

Does in Milk. A doe in milk needs extra protein and energy to make milk. Milking does need excellent hay and at least one pound of grain for each four pounds of milk produced.

Normal Feeding Regimen. Feed about 3% of a mature goat's body weight in total *dry matter* every day. Fitty to 100% of a goat's diet should be hay and forage. Many goats will need grain and supplements to make milk and maintain average body condition. Some goats do well on just good hay, browse and pasture. Animals expected to produce more milk simply need more nutrients to do so.

Goats are natural browsers, but they do not always have access to their natural diet. It is up to you to provide your goat with the nutrition it needs. Use roughage (pasture, hay, silage, browse) as the foundation of your goat's diet. Add concentrates (examples: soybean meal for protein, corn for energy) to provide what is lacking from the forage. Provide a vitamin and mineral supplement and water free choice.

Tips on Feeding Goats

Why cool facts

Ruminations

Discuss the answers to these questions with your helper.

Say cheese! (Share what you did)

- What are the five nutrients and what feeds contain them?
- How did you determine the ration for your goat?

The Buck Stops Here (Process what's important)

- How did telling others about the ration you created help you understand it better?
- Why is it important to meet all of a goat's nutritional needs?

Spread It Around (Generalize to your life)

- What do you do to make sure you eat a balanced diet every day?
- What are the consequences of eating an improper diet?

Browse for More (Apply what you learned)

- How will you change your goat's diet depending on milk production, pregnancy, weather or other factors?
- How can you improve your ability to communicate your decisions to others?

Bits & Butts

A good diet will help your animal perform to its full potential.

The protein content of hay is important because protein is usually the most expensive nutrient.



Bleat Street Palatability

What is the cost of one bale of each sample?

Sample 1 Type of hay: _____ Weight of bale: _____ Cost of bale: _____

Sample 2 Type of hay: _____ Weight of bale: _____ Cost of bale: _____

Sample 3 Type of hay: _____ Weight of bale: _____ Cost of bale: _____

Sample 4 Type of hay: _____ Weight of bale: _____ Cost of bale: _____

Write your reasons for your placing. Use the placing card on page 15 as a guide.

Which one of these samples would you choose for your goats?

Hay Judging Notes					
Characteristic	Total maximum points	Sample 1 Type:	Sample 2 Type:	Sample 3 Type:	Sample 4 Type:
Color	5				
Leafiness	10				
Odor	5				
Maturity	10				
Foreign matter (%)	10				
Texture or coarseness	5				
Optional: Palatability	10 bonus points				
Total points	50				
My ranking	1st, 2nd, 3rd or 4th				

Collect four samples of hay. They can be a legume such as alfalfa or clover or a grass hay such as oats, orchardgrass or timothy. If you can't find samples of one kind that are very different in quality, use different kinds of hay. Play the role of a hay buyer. Judge the samples and present your reasons to your helper.

Complete the Hay Judging Notes form and the Oral Reasons Note Card to help you give your reasons. Note: *palatability* refers to how acceptable it is to your goat; the most palatable sample is the one they prefer to eat. Finally, fill in the hay bale cost chart.

Goat to it!

As you discovered in "Goats Eat Oats and...", goats need both the right kinds and amounts of food to stay healthy and grow. A well-nourished animal is more content, is better able to carry healthy kids and produces more milk. This activity will help you see not all hay is the same quality.

Hey, How's That Hay?

Dairy Goat Skill: Recognizing quality forage	Life Skill: Decision making
Education: NS-5-8.2: Physical Science—Properties and changes of	Standard: Properties and changes of properties in matter.
Success Indicator: Explains reasons for hay judging decisions.	

Discuss the answers to these questions with your helper.

Ruminations

- Say Cheese!** (Share what you did)
- What kinds of hay did you judge?
 - What did you look for when you judged the hay?

The Buck Stops Here

(Process what's important)

- Which hay is the best value? Why?
- What other information would help you with your purchasing decision?

Spread It Around

(Generalize to your life)

- What other purchasing decisions do you have to make in the goat project?
- How is selecting hay like selecting clothing?

Browse for More

(Apply what you learned)

- What will you look for the next time you need to purchase hay?
- What would you advise others to consider when purchasing hay?

Oral Reasons Note Card

Class _____ placed this class of _____

I placed _____ over _____ in the top pair because _____

I grant _____ was _____ than _____

Going to the middle pair, I placed _____ over _____ because _____

I admit _____ was _____ than _____

I placed _____ over _____ in the bottom pair because _____

I realize _____ was _____ than _____

Hay, Man

Why Cool Facts

Hay is usually the backbone of a feeding program. Forages are usually the least expensive way to give your goat most of the nutrients she needs for maintenance, growth and production. Grains, minerals and other supplements complete your goat's balanced diet.

Quality

The ultimate judge of hay quality is a chemical analysis performed at a testing laboratory. This will reveal the protein content as well as the availability of other nutrients in the hay. Several factors affect hay quality:

- Kind of hay (legume vs. grass hay)
- Maturity (amount of seed heads, coarseness and size of stems)
- Storage and handling (bleaching, mold, dirt)
- Foreign matter (weeds, rocks, etc.)

Selecting Hay

Store bales inside a shed or on a dry, level, well-drained and covered site. Do not store bales on the ground because they will wick up moisture from the soil, which will rot the hay and promote mold growth. Mold robs hay of nutrients and can also cause serious goat health problems such as miscarriages.

Storing Hay

Store bales inside a shed or on a dry, level, well-drained and covered site.

50% grain and the other 40 to (hay or alfalfa) and the form of roughage daily intake should be in supplements. Make sure the hay has the level of nutrients to match the production of the goat. For example, a heavy milker should have nutrient-rich legume hay;

Crop	Stage of Growth	Percent Crude Protein
Alfalfa	Early Bloom	18
Alfalfa	Full Bloom	14
Wheat	Boot	18
Wheat	Full Bloom	8.5
Sudan	Early Boot	17
Sudan	Full Bloom	8
Brome	Late Boot	17
Brome	Full Bloom	12.5
Prairie Grass	Early Boot	13
Prairie Grass	Mature	6

Vary with Plant Maturity

Udder Ideas

1. Participate in a competitive hay judging contest.
2. Give a demonstration on selecting high quality hay.
3. Talk with a hay producer about all the factors that go into producing high-quality hay. Share what you discovered with your helper or group.

			% grain
			% and type of hay
Dry period	Late lactation	Early lactation	

How would you change the above base ration to feed a doe during early lactation, late lactation and during the dry period?

			Base diet: 60% grass hay, 40% grain
			Feed 80% grass hay, 20% grain
			Feed a grain with 16% protein
			Feed 60% grain and 40% grass hay
			Feed very good alfalfa instead of grass hay
			Feed corn and oats instead of grain mix
			Feed 75% grain and 25% grass hay
			Limit access to water
			Feed wheat instead of grain mix
			Limit access to minerals
			Feed 60% poor quality hay, 40% grain

My predictions about how ration changes affect goat health and production



Many decisions go into creating a good ration for your goat!

This activity will help you predict what will happen to goat health, milk production and milk quality depending on various changes in the ration. Starting with a ration of 60% grass hay, 40% grain mix with 12% protein, free access to water and a mineral mix, predict what will happen to milk production, milk fat production and goat health when the indicated changes are made to the ration. In each cell in the chart below, put an up arrow for "increases or improves," a dash for "no change" and a down arrow for "decrease or declines." If you can be specific about the changes to the goat's health, note those.

Goat to it!

There are as many different ways to feed a goat as there are blades of grass in a pasture. The decisions you make about your feeding program will depend on your herd's health, weather, feed costs, genetics, production goals and many other factors. As you determine your herd's ration, there will be many things to keep in mind to maximize feed efficiency and promote milk production.

Got More Milk?

Dairy Goat Skill: Feeding for production

Life Skill: Decision making

Education: NM-PROB.CONN.PK-12.3: Recognize and apply mathematics in contexts outside of mathematics

Success Indicator: Feeds for various production levels.

Ruminations

Say Cheese! (Share what you did)

- How would the ration changes affect goat production and health?
- How did you make your decisions about the impact of the rations?

The Buck Stops Here (Process what's important)

- What decisions do you have to make about your goat's diet?
- What are the impacts of a poor diet on your goat's health and production?

Spread It Around (Generalize to your life)

- If you increased your activity level, how would you change your diet to help you stay healthy?
- What other decisions do you have to make to keep yourself healthy?

Browse for More (Apply what you learned)

- How would you incorporate pasture into a ration and how would it affect production?
- Explain why maximizing production is not the same as maximizing health or profitability.



Bleat Street Talk

Ketosis
Acidosis

Concentrates

The Need for Feed

Why Cool facts

Early Lactation

Milk production normally rises rapidly and peaks between 50 to 70 days after kidding. However, dry matter intake doesn't peak until 75 to 100 days after kidding. In early lactation, does can't consume enough nutrients to meet their nutritional demands for top milk production. Therefore, does lose weight as they draw on their fat reserves to meet their energy needs.

Because energy is usually the limiting nutrient for milk production, grain is added to the ration of lactating goats. Most rations are balanced at about 50% of the daily dry matter intake as forage and 50% as grain. If forages are more than 55% of the ration, energy is limited, which causes a drop in milk production and greater incidence of *ketosis*. Rations with more than 60% grain cause rumen pH to drop below 6.2, which can cause *acidosis*, feed intake reduction, lower milk production and reduced milk fat content.

Feeding high quality forage can fulfill the doe's fiber requirements, meet the doe's need for protein and energy and allow for a lower percent of *concentrates* in the ration. This is a healthier and less expensive ration than one containing a large amount of grain. It also promotes high milk fat production. To maximize milk production, feed high quality forages that provide a high level of energy in the ration.

Late Lactation

During this period, does no longer maintain top milk production. Forty to 50% of the nutrients consumed during this period support milk production. The rest of the nutrients cover maintenance, the requirements of new fetal growth and recovery of fat reserves lost during early lactation.

Dry Period

Adjust the ration to provide less energy and protein so that the doe doesn't become overconditioned during the dry period. Provide about 1.5 pounds of 12% to 14% protein grain mix and good quality, long-stemmed grass hay with plenty of fiber. Do not feed much alfalfa hay because it contains too much calcium, protein and energy for the dry period.

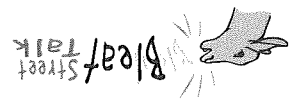
If you have questions about your animal's diet, talk with your veterinarian or Extension educator.

Udder Ideas

1. Contact the nutritionist from the feed company that makes your goat's feed and ask him/her to calculate a ration for your herd.

2. Visit a dairy goat farm and find out what rations are fed there. Share your findings with your helper.

3. Design a year-long feeding program for your goat herd that includes bucks, kids and does at different levels of production.



Estrous cycle Estrus Seasonally polyestrous Vocalization
 Estrogen Progesterone Follicle Corpus luteum Ovation

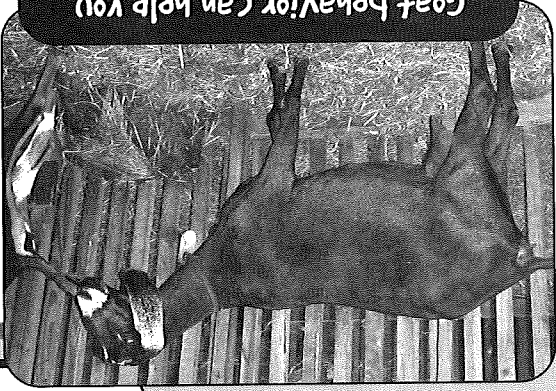
My on-farm observations of goat behavior			
Behavior I observed	Doe is in or out of estrus?	Breeder's comments	Doe's name or number

My Predictions of Goat Behavior	
Behavior of does in estrus	Behavior of does not in estrus

On your farm visit, observe five different does if possible. In the second chart below, record each doe's name or number and the behavior you observed her displaying. Based on that behavior, decide if you think each doe is in heat or not and record your decision. Finally, talk with the breeder about each doe to find out if the breeder thinks each animal is in heat or not. If the doe is not in heat, ask the breeder what signs of heat that doe shows when she is in heat. Record the breeder's comments where indicated.

NOTE: On your farm visit, be sure to wear clean and disinfected clothing and boots, try not to disturb the herd and follow any other requirements asked of you by the breeder.

Goat behavior can help you with heat detection. Some does will show interest when another doe is in heat urinates.



Find a goat breeder near you who will allow you to visit his/her herd. Talk with the breeder and ask when would be the best time for you to visit because you would like to observe does in heat; for some herds, this will mean visiting during certain months of the year. Before you visit the herd, make predictions about the behavior you will observe and record your predictions in the first chart below.

Goat to it!

Dairy Goat Skill: Recognizing signs of estrus in a doe	Life Skill: Acquiring and evaluating information	Education: NS-5-8.1: Science as Inquiry: Abilities necessary to do scientific inquiry	Success Indicator: Describes signs of estrus in a doe.
---	---	--	---

You want goat milk for your family, so that means you have to get your doe bred so she can have a kid and start lactating. How will you know when to breed her? There are some key things to look for and this activity will help you find out what they are. Get ready to investigate signs of estrus in a doe because the heat is on!

The Heat is On!

Ruminations

Discuss the answers to these questions with your helper.

Say Creese! (Share what you did)

- Where did you go to observe goats for this activity?
- What did you do to prepare for your visit to the herd?

The Buck Stops Here (Process what's important)

- How is a doe's behavior related to changes in hormones during her estrous cycle?
- Why is it important to acquire and evaluate information about your doe when you want to breed her?

Spread It Around (Generalize to your life)

- What are other times when you use your observation skills to make decisions?
- Besides timing, what other decisions do you have to make regarding breeding your doe?

Browse for More (Apply what you learned)

- How will you use your new knowledge when it is time to watch for heat in your doe?
- How can you become better at heat detection in goats?

Bits & Butts

- The European breeds are fall breeders. The African breeds are more likely to breed "out of season."
- As heat progresses, a doe's mucus discharge changes from clear to cloudy. For natural service, a doe's discharge should be like an egg white, thick and slightly cloudy at the time of mating. For artificial insemination, breed the doe later in her cycle, when there is less but more cloudy mucus.

Udder Ideas

The signs of heat are caused by the hormone *estrogen*. This hormone is produced by the structure that contains the mature egg(s) about to be released from the ovary; this structure is called a *follicle*. After the follicle ruptures and releases the egg, it becomes another structure called a corpus luteum (C.L. or "yellow body"). The C.L. produces a hormone called *progesterone*. If the doe becomes pregnant, the C.L. remains throughout pregnancy. If the doe doesn't get pregnant, the C.L. slowly disappears, the next egg matures and the doe comes into her next heat.

- Excessive activity (pacing, vocalization)
- Decreased appetite
- Tail wagging
- Decreased milk production
- Frequent squatting to urinate
- Discharge of mucus from vulva
- Change in behavior
- Stands to be mounted by a buck

Does are called *seasonally polyestrous* which means they come into heat more than once at a certain time of the year. It is more likely kids will survive if they are born in the spring, so natural selection has favored a natural breeding season for goats in the fall. Does usually conceive in the fall, are pregnant through the winter and kid in the spring.

Most does come into heat on a regular *estrous cycle* that is about 21 days long. They will only stand to be bred by the buck for one to three days during this cycle. During the rest of the cycle, does won't stand for the buck and cannot become pregnant. *Ovulation* occurs toward the end of standing heat.

The hormones involved with the estrous cycle cause changes in the doe that can help you tell when to breed her. When she is ready to be bred, a doe may show these signs:

1. Ask goat producers what methods they use to detect heat. Summarize what you learned and share it with your group or helper.
2. Create a diagram, poster or model of a doe's ovary. Make sure what you create contains the major structures that can be found on an ovary. Investigate and report on the function of these structures. Share what you created with your group or enter it in a science fair.
3. Ask a veterinarian to show you the ovary of a cow or goat and point out its structures.

Like Clockwork?

Why cool facts

Normal Kidding Matching Activity

Stage of labor	Event	Events I have seen
Stage 1: Preparation	Doe strains and pushes	
	Doe passes placenta	
	Teats fill with milk	
	Water bag appears	
Stage 2: Delivery	Doe goes off by herself	
	Doe wags tail, squats and strains	
	Tailhead ligaments relax	
	Doe cries and paces	
Stage 3: Delivery of placenta	Doe stands up and lies down often	
	Kid's nose and/or feet appear	
	Kid is delivered	
	Doe stops eating	
	Kid's body appears	

In the matching activity below, the events are out of order. Correct this by drawing an arrow from the event to the stage of labor in which this event occurs. Put a check mark in the last column next to each kidding event you have seen.

Three to six weeks before my doe kids, I need to _____

Two to three weeks before my doe kids, I need to _____

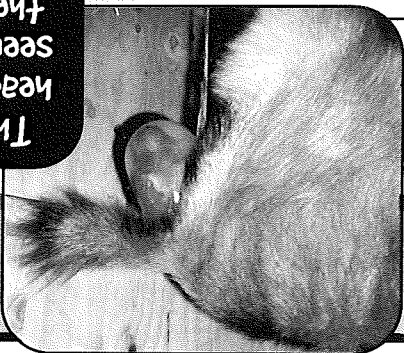
One or two days before my doe kids, I need to _____

Reflect on the things you need to do to get ready for kidding and write them in the correct spaces below.

Goat to it!

You have a lot of work to do before your kids arrive: review your records, gather supplies, get pens ready and much more! One of the most important skills for goat producers to master is the ability to tell when there is a kidding problem. This activity will help you prepare for kidding and explore the normal kidding process. A future activity will help you investigate *dystocia*. Both activities will help you sharpen your decision making skills as you get ready for the kids!

Here Come the Kids!

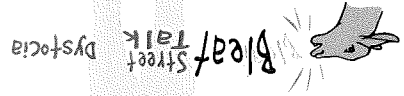


This kid's head can be seen within the water bag.

Dairy Goat Skill: Preparing for normal kidding
Life Skill: Decision making
Education: NS.5-8.3 Life Science: Reproduction and heredity
Standard: Describes a normal delivery and how to prepare for it.
Success Indicator:

Now you can see the importance of good record keeping! To figure out when to perform crucial health procedures on your pregnant doe, you need to know her breeding date and calculate her due date.

Bits & Butts



- What careers require excellent decision making skills?
 - How can you prepare for problems with kidding?
- Browse for More** (Apply what you learned)

- When is another example of when knowing what is normal helped you recognize the abnormal?
 - In what situations do you find yourself making many decisions quickly?
- Spread It Around** (Generalize to your life)

- What are some decisions you'll have to make at kidding time?
 - What things do you need to do to be ready for kidding?
- The Buck Stops Here** (Process what's important)
- What happens during the three stages of labor?
 - What signs of labor have you seen?

Say Cheese! (Share what you did)

Discuss the answers to these questions with your helper.

Ruminations

You're Kidding!

Why cool facts

Goats have been kidding all by themselves for thousands of years and human help isn't needed very often. However, there are some routine things you can do to help the doe and kid.

Preparing for Kidding

- Put does that are about to kid in a separate pen
- Have clean kidding pens ready
- Make sure all equipment is disinfected
- Have heat-treated colostrum and pasteurized milk on hand
- Have all supplies ready

Suggested Kidding Supplies

- Towels
- Human ear bulb syringe to suction nasal mucus
- Heat lamps
- Bottles and nipples
- Electrolyte solution
- Tube feeder
- 60cc dose syringe
- Vitamin E/Selenium
- Tetanus anti-toxin
- Syringes and needles
- Approved antibiotics

The Kidding Process

There are three stages of labor: Stage 1 is preparation, during which internal, unseen changes are happening within the doe. Ligaments are relaxing, her uterus is contracting, her milk is coming in and she is getting restless. Active labor occurs and the kid is delivered during Stage 2. Stage 3 ends when the placenta is passed. As a young caretaker, your major responsibilities at kidding time are to be on hand to watch the doe for signs of trouble, call someone experienced for help if needed and care for kids after they are born. As you gain experience, you will be able to help with some birthing problems yourself.

Warnings

- Have an adult carefully check the set up of heat lamps to make sure there is no risk of fire or possible harm to the kid.
- Have someone experienced show you how to tube feed a kid properly before you do it yourself.

Udder Ideas

1. Watch a normal birth and take photos or videotape it. Share what you created with your helper or group.
2. Talk to a veterinarian about how to identify dystocias and how to correct them.

Kidding Around

Is kidding time fun? You bet it is! It's not only fun but it's also exciting. At kidding time, you have to be ready to do your part—from routine tasks to helping kids with problems. This activity will help you brush up on your kidding time skills.

Goat to it!

To prepare yourself and others for the arrival of the new kids on the farm, sponsor a skillathon with several stations that focus on neonatal kid care tasks. Alone or with other group members, decide what tasks need to be performed when a kid is born and create a skillathon station for each task. Using a model cloth kid will help you make this activity very realistic for the participants. In the space below, list the skillathon stations you created.

Our Skillathon Station Tasks

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

A skillathon is a learning-by-doing opportunity for youth. Skillathon station facilitators must not give answers; instead, they should guide learning by asking questions. To make learning memorable for participants, station facilitators must not show participants how to do a task—participants should discover how to do the task through their own experimentation and with the guidance of the facilitator's questions.

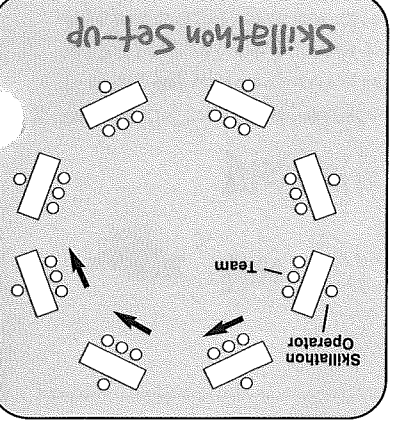
TIP

Skillathon Learning-by-Doing Cycle

1. Form teams of two to five members.
2. Make supplies available at each station.
3. Provide the teams with realistic situations and tasks to which to respond.
4. Step back and give the teams time to discover their own solutions to the task.
5. Respond to teams' questions with questions so answers are their own.
6. Listen to teams' solutions.
7. Accept the teams' solutions.
8. Ask questions to help them build on what they presented.
9. Reinforce their efforts with praise.

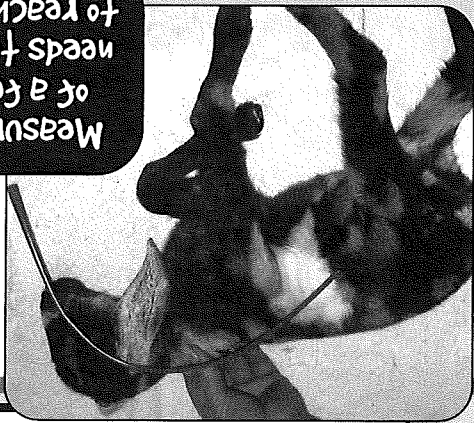
Outline for Each Skillathon Station Activity

- Situation
- Materials needed
- Time required
- Group size
- Questions:
- Share what you did
- Process what's important
- Generalize to your life
- Apply what you learned



This tube is fully inserted.

Measure how much of a feeding tube needs to be inserted to reach the last rib.



Dairy Goat Skill:	Caring for newborn kids
Life Skill:	Planning and organizing
Education:	NS-5-8.3 Life Science: Reproduction and heredity
Standard:	Reproduction and heredity
Success Indicator:	Conducts a skillathon to practice caring for newborn kids.

1. Visit a goat farm during kidding time. Observe normal and abnormal kiddings and watch what is done to help each doe. Share what you observed with your helper or group.
2. Discuss with your helper how you would care for a kid from birth to one week of age. Create an educational poster on this topic and present it at your county fair.

Udder Ideas

Stimulating Respiration
Gently tickling the tissue just inside the nose with a piece of straw will make newborn kids sneeze and breathe deeply. After a difficult birth, some kids may have mucus in their nostrils and this can impair breathing. Use a human ear bulb syringe to draw out this mucus.

Injections
Newborn kids may need an injection of Vitamin E/Selenium. If the doe wasn't properly vaccinated during pregnancy, the kid may need injections of antitoxins for Tetanus and Enterotoxemia. Work with your veterinarian to develop a Selenium supplementation program and an effective vaccination program.

Goat Skillathon Station Ideas
colostrum soon after birth to both generate heat and supply them with energy. If a doe is ill, has too many kids to care for, has poor mothering instincts or the kid is abnormal, a newborn can easily grow weak and cold. If you find a weak newborn, put your finger in its mouth. If it is cool, warm it as soon as possible with a warm bath or warming box. **After the kid's mouth is warm**, feed a bottle of warm colostrum or tube feed it if it won't nurse.

Common Problems
The two major problems of newborns are related: *hypothermia* and starvation. Because they have no stores of body fat to use, kids must consume

Routine Tasks: Clip, Dip, Strip and Sip
• **Clip** or scrape the umbilical cord to one inch long
• **Dip** the navel with strong iodine to prevent navel ill
• **Strip** the plug out of the doe's teats
• Make sure the kid gets a **sip** of colostrum as soon as possible. The kid needs to ingest at least 10% of its body weight in colostrum within 12 hours of birth. Colostrum contains vitamins, calories and disease-fighting *antibodies*.

Goat Skillathon Station Ideas
• Delivering a kid
• Warming a chilled kid
• Tube feeding a kid
• Giving injections to a newborn kid
• Treating a newborn's navel
• Stimulating respiration
• Clearing mucus from nose
• Checking a newborn's temperature

Newborn Kid Care

Why cool facts

Discuss the answers to these questions with your helper.

Ruminations

- Say **Creezel** (Share what you did)
- What skillathon stations did you create?
- Where did you get the supplies you needed?

The Buck Stops Here (Process what's important)

- Why should you practice these skills before kids are born?
- What kind of planning was needed to make your skillathon successful?

Spread It Around (Generalize to your life)

- What are some other things you practice so you can be prepared when the time comes?
- Which skills could you already do and which were new to you?

Browse for More (Apply what you learned)

- What can you do to get prepared to assist a doe in labor?
- What are other ways you could teach these skills to others?



You'll need to do some work ahead of time to get ready to lead this activity for less experienced youth. Start by finding a good example of a clean, well-organized dairy goat milking *parlor* where you can conduct this activity. With your helper, a dairy goat milk producer or your own experience, create an inventory of everything needed to milk a goat properly. Also create a list of the proper order of milking procedures. This will be the answer sheet for this activity. Attach a copy of your answer sheet to this page.

Before the other youth arrive, set out all the equipment and supplies involved with the milking process. Label each item with a large letter ("A," "B," "C," etc.) but do not name them. When the participants arrive, give each person a piece of lined paper and ask them to identify and write down the proper name of each labeled item; an older youth or adult can help younger participants with the writing. Individual or team work is OK.

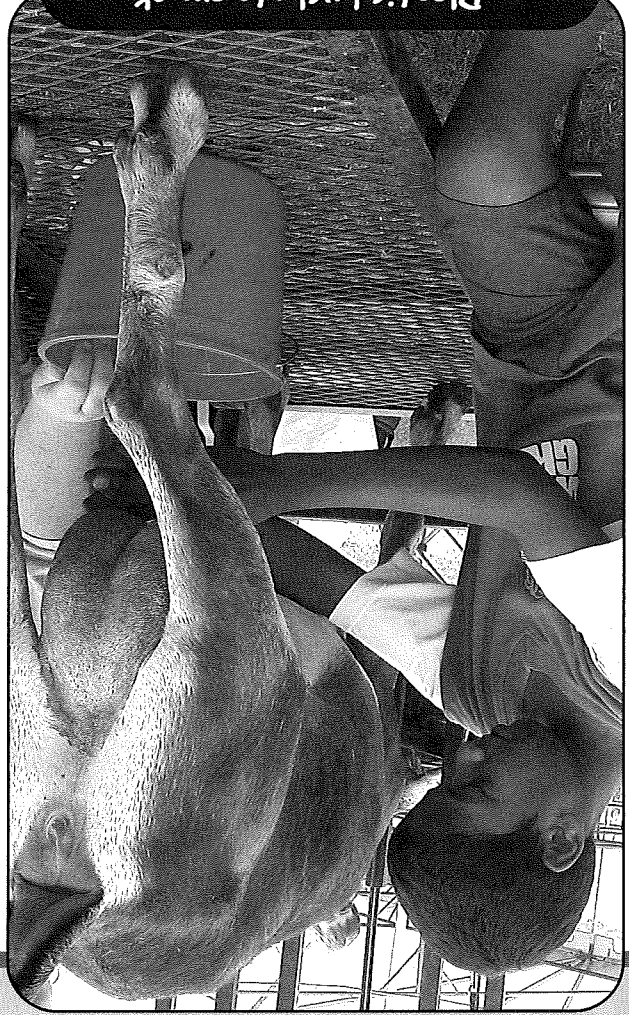
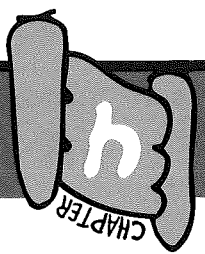
On the back of his/her paper, ask each youth to number and describe each step of the milking process in order. Include the items listed on the front of his/her paper he/she should use in each step. When everyone is finished, go over each item and each step in the milking process. When differences arise, discuss each person's answer OK as long as youth can justify them.

Goat to it!

If one of the reasons you decided to own a goat is to produce fresh, wholesome milk for your family, this activity is for you! There are a lot of steps to keep in mind when harvesting milk properly and this activity will help you investigate what those are. You'll also have the opportunity to practice your leadership skills as you guide less experienced goat project youth through the learning process. The squeeze is on to learn about milking!

Milk it for All It's Worth

Milk and Milking



Plastic buckets are OK for milking demonstrations. Use stainless steel for milk that will be consumed.

Skill: Mastering milking procedures	Life Skill: Leadership
Education: NL-ENG.K-12.4	Standard: Communication skills
Success: Describes proper milking procedures.	Indicator: Describes proper milking procedures.



Street Talk
Best practices
Milk let-down
Teat orifice
Mastitis
Parlor

Ruminations

Say Cheese! (Share what you did)

- What are the steps you discovered for milking a goat properly?
- How did it feel to lead an educational activity for less experienced youth?
- Why is it essential that you follow proper dairy goat milking procedures?
- Why are youth leaders so helpful for less experienced youth?

The Buck Stops Here (Process what's important)

- What other ways do you practice proper food safety procedures?
- What other educational activities have you led?

Spread It Around (Generalize to your life)

- Based on what you discovered, how will you change your milking procedures?
- What careers involve teaching and leading others?

Browse for More (Apply what you learned)

- A grade A dairy is one that can legally sell milk to the public. There are strict requirements that must be met and maintained to achieve this designation. Inspections by government health agency representatives ensure proper procedures and facilities are being used. Selling milk for human use without a grade A permit is illegal.
- Post-milking teat dips help close the teat orifice and help prevent bacteria from entering the teat and causing mastitis.

Written by Susan Kerr.

Bits & Butts

Udder Ideas

1. Visit a commercial goat or cow dairy during milking time and observe milking procedures. Ask lots of questions so it will be an educational experience for you. Share what you learned with your group.
2. Conduct a taste comparison of your goat's milk based on her diet. Keep careful notes about what she is fed and how you and your family like the taste of the milk depending on this diet. Remember to make any changes in your goat's diet slowly so her rumen microorganisms have time to adjust.

supplies ready.

Preparing the milking area
The milking area should be very clean. Keep flies, vermin and other animals out of the parlor. Do not store grain in the parlor. Have plenty of individual clean paper towels (cloth or paper) available and all your other

Wash and dry your hands immediately before milking each goat and between goats. If you are ill, have someone else harvest the milk. Keep your hair controlled.

Preparing the milker
Wash and dry your hands immediately before milking each goat and between goats. If you are ill, have someone else harvest the milk. Keep your hair controlled.

Preparing the goat
A milk goat's udder, belly and tail areas should be clipped regularly so they are free from hair and debris. Have the goat stand on a milking stand or platform for milking. Wash teats with an approved antiseptic soap and rinse well before each milking; this cleans the teats and encourages milk letdown. Apply a disinfectant pre-dip to both teats after washing/before milking. Using individual towels for each goat, make sure teats are dry before milking. Use a strip cup to check for abnormal milk in all goats before each milking. You may feed grain while the goat is being milked.

Storing milk
All milk should be cooled in ice water to 40°F or below as soon as possible. Milk will cool more quickly in multiple smaller containers instead of one large container. Pasteurized milk can stay fresh and safe for up to 14 days if kept at or below 40°F. Milk that cannot be consumed in that time can be made into butter, cheese or ice cream or fed to other animals.

Home pasteurization
Milk should be pasteurized with a pasteurizer or by heating it to 155°F for 30 minutes. This will kill any disease-causing organisms that may be in the milk as well as prolong its safe storage life. Pasteurized milk can be consumed as is or made into other dairy products.

Harvesting milk
Whether you milk by hand or machine, use clean and sanitized stainless steel equipment. Sanitize equipment between uses on different animals. Milk out each goat completely but don't overmilk. Pour harvested milk through a filter into a sanitized container. After milking, dip each teat in an approved sanitizer.

Perfect Parlor Practices

Why cool facts

CSI: Mastitis

If you have dairy animals, mastitis is one of your biggest worries. Being able to detect mastitis is a key skill for dairy goat owners and this activity will help you find out why. You'll also practice using a common mastitis detector to gather and judge new information.

Goat to it!

Dairy Goat Skill: Using mastitis detection tools
Life Skill: Acquiring and evaluating information
Education: NS.5-8-1: Science as Inquiry: Abilities necessary to do scientific inquiry
Success Standard: Explains how to detect clinical and subclinical mastitis.

Obtain a California Mastitis Test (CMT) paddle and reagent from a veterinarian, dairy producer or farm supply store. Clean the paddle thoroughly. Number the paddle wells and place the following contents in each one:

- Well #1 — one tablespoon normal goat milk
- Well #2 — one tablespoon water
- Well #3 — one tablespoon sugar
- Well #4 — one tablespoon active dry yeast

In the chart below, record your *hypothesis* of what you think will happen when you add one tablespoon of diluted CMT reagent to each of the four paddles. Add the reagent, carefully swirl the paddle and record what you observe.



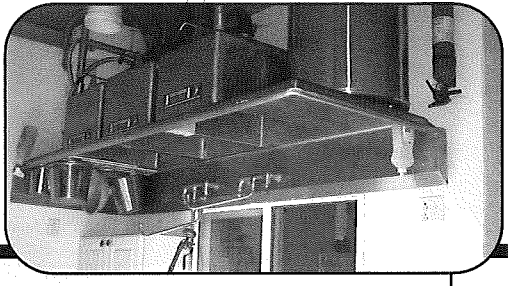
The CMT paddle was designed for the four teats of a dairy cow's udder.

Photo courtesy Animal Health Publications. Used with permission.

Results of My CMT Experiment

Well #	My hypothesis	My observations
1		
2		
3		
4		

Excellent sanitation is the best way to prevent mastitis.



Bleat Street
Somatic Cell Count (SCC) Dry off DNA

Hypothesis DNA Pathogen clinical Subclinical

Udder Ideas

1. At your veterinarian's office, follow a mastitis case from collection of the sample, culture of the pathogen and antibiotic sensitivity testing. Create an educational poster or presentation about what you learned.
2. Obtain DHIA record sheets and focus on SCC reports from each doe. What management decisions would you make based on this information if you were the manager of this dairy? Why?

Mastitis can be caused by several different types of pathogens. Many cases of mastitis improve if the abnormal milk is milked out often, but some cases will require medication. Work with your veterinarian to identify the cause and develop an effective treatment plan.

Signs of mastitis include heat, pain, redness and swelling of the affected half of the udder, reduced milk production and usually a change in the physical properties of the milk from that side. White clumps may appear. Watery, bloody or gassy milk usually indicate a very serious case of mastitis.

Diagnosis of clinical mastitis is easy, but testing is needed to identify subclinical cases. DHIA reports include a somatic cell count (SCC) for each doe. Somatic cells are usually white blood cells sent to fight pathogens in the milk. Even normal goat milk can contain many such cells, but a tremendous increase in cells can mean a goat has mastitis.

The California Mastitis Test is a way to detect subclinical mastitis. The reagent reacts with DNA in somatic cells in the milk—the more cells, the more DNA and the more gummy the reagent becomes when mixed with affected milk.

The likelihood of mastitis is greater in dirty environments, when a goat isn't milked regularly, if she leaks milk, if her mammary system is injured or if anything is injected into the teat. New infections can occur in a goat's dry-off period, especially if she is in a dirty environment. Talk with your veterinarian about using a long-acting antibiotic infusion in both teats to prevent mastitis during the dry period.

A mastitis prevention plan should be part of your quality assurance program. To prevent mastitis, be CLEAN before, during and after milking. Sanitize your hands or milking units between goats; wash and pre-dip teats before milking. Always examine milk from each teat for abnormalities before milking each goat. Do a CMT if you have any doubts about the quality of a goat's milk. For more information about mastitis prevention or treatment, talk with your veterinarian.

Clots, Clumps and Other Crud

Why whey cool facts

Discuss the answers to these questions with your helper.

Ruminations

- Say Cheesel (Share what you did)
- What did you observe?
- What surprised you most?

The Buck Stops Here (Process what's important)

- How did what happened differ from what you expected?
- How does the CMT detect mastitis?

Spread It Around (Generalize to your life)

- What other scientific experiments have you conducted?
- What careers involve acquiring and evaluating information?

Browse for More (Apply what you learned)

- How does mastitis affect milk quality and quantity?
- Why is the risk of mastitis increased during the early dry period? What can you do to reduce this risk?

Bits & Butts

Mastitis is common because milk is an excellent environment for bacteria - it provides the food, moisture and warmth that bacteria need to live and multiply.

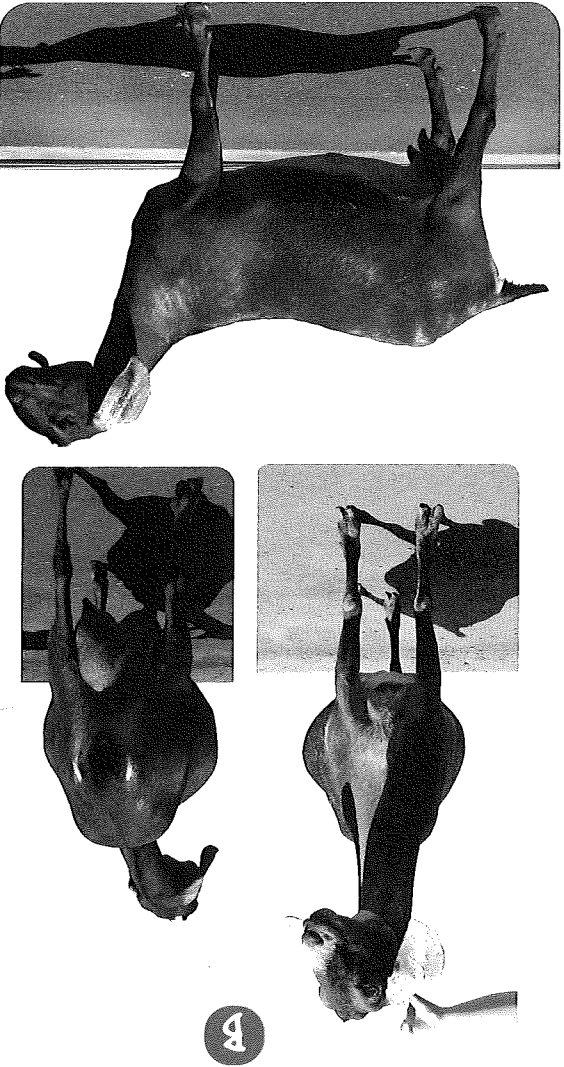
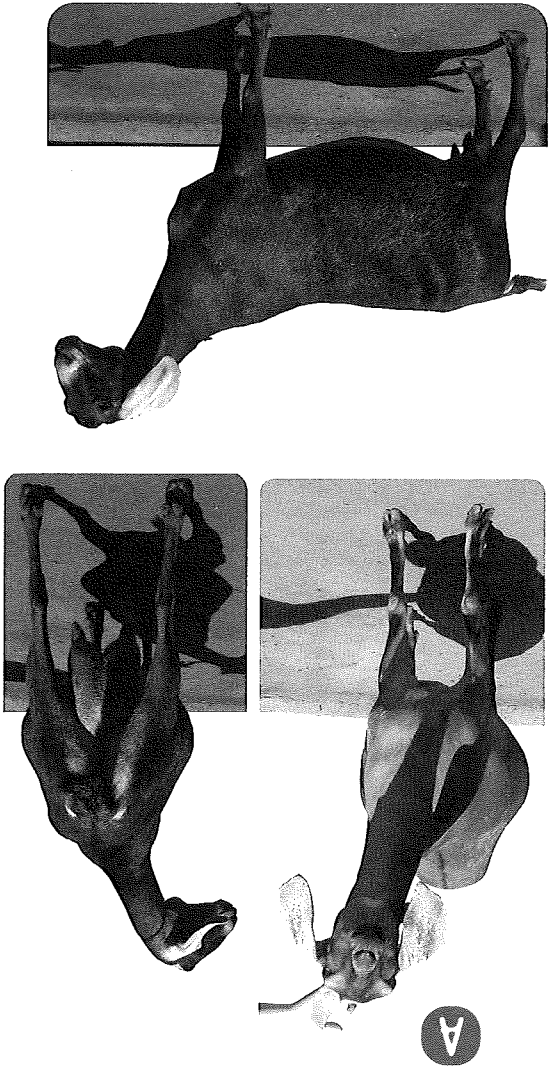
Goat to it!

You know the goats' body parts from what you learned in Dairy Goat 1, *Getting Your Goat*. Now you can have fun comparing *lactating* dairy goats. The Dairy Goat Scorecard for does is divided into four separate categories:

- General Appearance
- Dairy Character
- Body Capacity and Mammary System
- Decide which of the two goats shown is closer to the ideal dairy goat by answering the questions under each category on page 29. Put the letter of the better goat on the line after each question and decide how many points allowed for each question should be awarded to each goat.

Today you may just need to choose what to eat for lunch, but some day you may need to choose between two colleges to attend, two careers to pursue or two houses to buy. The more you practice, the better you'll be at making good choices. This activity will help you improve your ability to judge and select the better of two goats.

And the Winner Is...



Dairy Goat Skill:	Judging goats
Life Skill:	Decision making
Education:	NS.5-8.3 Life Science: Structure and function in living systems
Standard:	Compares the strengths and weaknesses of two goats.
Success Indicator:	Compares the strengths and weaknesses of two goats.

- Spread It Around** (Generalize to your life)
- How does it help to have an ideal in mind when choosing something?
 - When have you had to choose between things before?

- The Buck Stops Here** (Process what's important)
- How did answering the questions help you make your final decision?
 - Why should you learn how to judge animals?

- Say Cheese!** (Share what you did)
- How did you place the two goats?
 - What was easy and hard about judging these goats?

Discuss the answers to these questions with your helper.

Ruminations

Acknowledgement: Scorecard adapted and abbreviated from American Dairy Goat Association scorecard.

Best overall goat (check A or B)		A	B
General Appearance (femininity and attractiveness) 35 points possible			
Overall: Which goat has the best general appearance? _____			
1. Which goat is longer or taller?	_____	_____	_____
2. Which doe has a stronger jaw, longer ears and a more roman nose?	_____	_____	_____
3. Which goat's neck blends smoothly and cleanly into the withers and shoulders?	_____	_____	_____
4. Which goat has a straighter top line being more nearly level from hips to pins?	_____	_____	_____
5. Which goat has stronger pasterns and more appropriately shaped and placed legs?	_____	_____	_____
Sub-total points: _____			
Daily Character (sharpness, lack of excess fat) 20 points possible			
Overall: Which goat has the best dairy character? _____			
1. Which goat has a longer, leaner neck?	_____	_____	_____
2. Which is more angular (wedge-shaped that tapers from narrow at the front to wide at the back)?	_____	_____	_____
3. Which goat has a more incurving thigh?	_____	_____	_____
4. Which doe is carrying less fat?	_____	_____	_____
Sub-total points: _____			
Body Capacity (size, depth and width throughout) 10 points possible			
Overall: Which goat has the most body capacity? _____			
1. Which doe is deeper in the heart girth, has a more prominent brisket and a wider chest floor?	_____	_____	_____
2. Which doe has a deeper barrel?	_____	_____	_____
Sub-total points: _____			
Mammary System (strength of attachment, shape, capacity) 35 points possible			
Overall: Which goat has the best mammary system? _____			
1. Which goat has a stronger medial suspensory ligament?	_____	_____	_____
2. Which goat has a longer, smoother-blended fore udder?	_____	_____	_____
3. Which goat has a higher, wider rear attachment?	_____	_____	_____
4. Which goat has a more balanced mammary system?	_____	_____	_____
5. Which goat has more properly placed and shaped teats?	_____	_____	_____
Sub-total points: _____			
TOTAL SCORE			

Dairy Goat Scorecard

Udder Ideas

1. Use the list of questions to compare goats in your herd or a friend's herd.
2. Judge fiber, market, pack and pygmy goats.
3. Compare does' conformation (type) with their production levels. Share what you discovered with your helper.
4. Study the ADGA scorecard at the Dairy Goat Project Online site www.4-hcurriculum.org/

- Browse for More** (Apply what you learned)
- When you have to make a judgment or decision in the future, what questions will you ask yourself?
 - What opportunities can you use to practice your judging skills?

- There are scorecards for bucks and junior does, too.

Bits & Butts

Being able to judge goats will help you compete in judging contests as well as select better animals to purchase, breed and keep. Contact your favorite dairy goat breed association for judging standards for that breed.

Judging Goats

Why Cool Facts

Goat to it!

Talk Like a Judge

Now that you are familiar with dairy goats—their parts, ideal characteristics and how to identify weaknesses and strengths—you are ready to make your own decisions and be “the judge.” This activity will give you an opportunity to practice presenting reasons on two or more goats.

Judge and give oral reasons on four goats from magazines, books, Web sites or real life. In the box below, record the source of goats you used for judging. The questions and scorecard provided in the previous activity may help you or you may prefer to find or create your own scorecards. Write your oral reasons in the space provided.



Being able to judge animals will serve you well in the future.

Source of Goats I Judged

Oral Reasons Note Card

Class _____ I placed this class of _____ because _____ (list age and breed).

I placed _____ over _____ because _____

Next, I placed _____ over _____ because _____

In my final placing I favored _____ over _____ because _____

Dairy Goat Skill:	judging goats and giving oral reasons
Life Skill:	Decision making
Education:	NS.5-8.3 Life Science: Structure and function in living systems
Success Indicator:	Judges goats and gives oral reasons for placings.

1. Practice giving reasons without notes to an adult at your next meeting.
2. Attend a dairy project goat show and compare your ringside placing with those of the official judges.
3. Organize a judging contest for your club or family. Encourage everyone to give reasons at least once.

Udder Ideas

- Deeper in the heart region
- More open in ribbing
- Fuller in the crops
- Longer body
- Deeper in the rib
- Deeper in the heel
- rear legs
- Walks more freely on the
- More correct foot
- Less set to the hock
- Longer and wider rump
- More level from thurl to thurl
- More level from hips to pins
- Cleaner about the throat
- More alert
- More breed character
- parts
- Smoother blending of body
- More balance
- Longer from head to tail
- Taller
- More size and scale
- Dairy Character
- Less excess flesh
- Sharper over the shoulders
- Sharper at the withers
- Sharper and cleaner throughout
- More refined
- Leaner through the thigh
- More angular
- Mammary System
- More capacious udder
- More strongly attached
- Showing more quality
- Higher and wider rear udder attachment
- More balance between udder halves
- Udder carried higher above the hocks
- More cleft in the udder
- Showing more bloom of udder
- Teats hanging more nearly plumb
- Teats more desirable in size and shape

Comparative Terms
 Below are terms you can use when giving oral reasons. Practice them in front of a mirror and then use them during a judging contest.

- Use common terminology
- List major points first
- Give reasons that are clear and concise
- Use comparisons not descriptions when placing animals
- Avoid the terms "better" or "I think"
- Indicate how age or stage of lactation influences your placing
- Always end by commending a feature of the animal you placed fourth.

Tips for Presenting

Tips for Presenting Oral Reasons
 Why cool facts

- What will you look for the next time you select an animal for purchase?
- How can you improve your ability to judge goats and give oral reasons?

Browse for More (Apply what you learned)

- How do you use your judging skills as a consumer?
- When are other times you've written or spoken your preferences or decisions?

Spread It Around (Generalize to your life)

- What differences did you find between the goats you placed?
- What did you find most difficult about placing the goats and writing reasons?
- How does judging help you practice your decision making skills?
- Why is judging a valuable skill for both youth and adult goat producers?

Say Cheese! (Share what you did)

Discuss the answers to these questions with your helper.



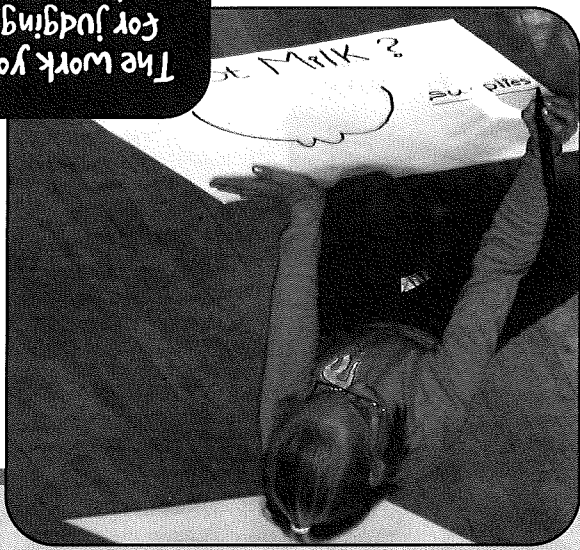
● "Character building begins in our infancy, and continues until death." — Eleanor Roosevelt

● "Whatever you want to be in life, you're training for it now." — Lt. Colonel Michael P. Anderson, STS-107 Space Shuttle Columbia Payload Commander

Lined writing area for student responses.

"Despite hard work, _____'s animals never seem to do very well in the show ring. She/he is determined to received a Grand Champion ribbon this year, so she/he has decided to..."

The work you enter for judging should be your own!



You have a lot of freedom in this activity; how it turns out is totally up to you. Given the first sentence provided in the box below, create a short story that involves a young dairy goat producer making choices based on his/her ethics. Anything you want to create is OK because this is fiction. It might be fun to create a scenario that is much different from anything you would ever choose to do! After you report what your fictional youth chose to do, conclude with a statement about what happened as a result of his/her actions. Note: If you prefer, you may tell your story to someone else out loud instead of writing it in the space provided.

Goat to it!

What color ribbon would your ethics win—blue, red or white? What color would you like them to win? One way you can become a "blue ribbon youth" and gain new communication skills is to explore the topic of ethics. Through this activity, you'll investigate how your ethics are involved in the dairy goat project. The decisions you make and actions you take determine what color ribbon your ethics would deserve to win. Remember, winning isn't everything—CHARACTER is!

Ethics: A Good Value

Table with 2 columns: Dairy Goat Skill and Indicator. Rows include: Practicing ethical basis for actions, Communication, NL-ENG.K-12.12: Applying language skills, Explains consequences of ethical and unethical behavior.

Discuss the answers to these questions with your helper.

Ruminations

Say Creese! (Share what you did)

- What scenario did you create?
- What were the consequences of your person's actions?

The Buck Stops Here (Process what's important)

- How do your actions communicate your character to others?
- Where and why are ethics important in the dairy goat project?

Spread It Around (Generalize to your life)

- What are some examples of ethical and unethical behavior you have seen or heard about in the news?
- How important are good character and ethics to you? Why?

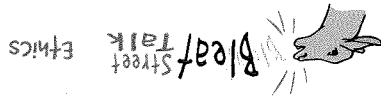
Browse for More (Apply what you learned)

- How can you communicate the importance of ethics to others?
- How will you change your actions and behaviors as a result of this activity?

Acknowledgement: CHARACTER COUNTS! is a service mark of the CHARACTER COUNTS! Coalition and a project of the Josephson Institute of Ethics.

Adapted from activities in 4-H beef, dairy, dog and meat goat curricula and from information provided by Hubert Wilkerson, Sunil B. Page and Dr. Timothy G. Page.

Written by Susan Kerr.



Udder Ideas

1. Make a video of skits involving ethical issues.

2. Visit the CHARACTER COUNTS! Web site and investigate how the character traits of caring and citizenship are involved in youth livestock projects.

3. Write a much longer story where someone experiences the consequences of making an unethical decision about his/her goat. Share your story with your group, helper or family.

WARNING

Disregarding medication withdrawal times and using unapproved or illegal medications jeopardizes the safety of our food supply. Using medications improperly in food animals is a federal offense and is punishable by large fines and jail time.

When you participate in youth livestock activities, you are carrying on a long tradition of positive youth behavior. Because you are representing 4-H, FFA or your family, your actions have an impact on the public's perception of the group you represent. It is essential your behavior is legal and ethical at all times so youth livestock projects and shows have good reputations. It is also time for you to build a reputation as an ethical and fair person.

The general public and urban consumers come to youth livestock shows and fairs to learn about agriculture. They do not want to see—nor should they see—unethical behavior from livestock producers of any age. Think carefully about your actions at a livestock show—the public could be watching. If you always act as though you have a camera recording everything you do, you will probably always to the right thing. When you are committing unethical actions. No words here can help you understand or accept this situation and you have a right to be upset! You cannot control others' actions, but you can control your own and become a "blue ribbon" person of integrity and character.

As you are developing your personal code of ethics, it will be disturbing to see others (even adults) benefit from committing unethical actions. No words here can help you understand or accept this situation and you have a right to be upset! You cannot control others' actions, but you can control your own and become a "blue ribbon" person of integrity and character.

any of these questions is NO, don't do it! You'll be glad afterward? Do I want anyone to know?" If the answer to "Is it legal? Is it ethical? Will I feel bad about myself?" attempted to bend the rules, ask yourself these questions: though you have a camera recording everything you do, the public could be watching. If you always act as unethical behavior from livestock producers of any age. Think carefully about your actions at a livestock show— They do not want to see—nor should they see— unethical behavior from livestock producers of any age. though you have a camera recording everything you do, you will probably always to the right thing. When you are committing unethical actions. No words here can help you understand or accept this situation and you have a right to be upset! You cannot control others' actions, but you can control your own and become a "blue ribbon" person of integrity and character.

Do the Right Thing

Why Cool facts

This is the second of three Goat Talk glossaries for you to use to increase your "goat" vocabulary. See how many of these words your family knows.



D

DHIA - Dairy Herd Improvement Association, an organization dedicated to improving the dairy industry through an extensive record-keeping program.

Diet - All the feeds an animal consumes every day.

DNA - Deoxyribonucleic acid; building block of living things; found in cells and carries genetic information.

Dry matter - Weight of feed an animal consumes with water weight subtracted.

Dry off - Allow an animal to stop producing milk so her udder can get ready for the next lactation.

Dystocia - Abnormal or difficult birthing process.

E

Estrogen - Reproductive hormone released by mature follicles; causes female to be receptive to male.

Estrous cycle - Series of regular 21-day cycles of hormonal events during which a doe comes into heat (estrus); other stages are proestrus, diestrus, metestrus and anestrus.

Estrus - Heat; portion of reproductive cycle when doe is willing to receive buck.

Ethics - Moral principles that identify actions as acceptable or unacceptable as generally observed by society; system of values applied to a situation, action or behavior to determine if it is acceptable.

F

Follicle - Structure on ovary that contains a mature egg that is ready to be released and fertilized; secretes estrogen.

A

Acidosis - Condition caused by too much grain or other carbohydrates in the diet, which causes illness due to abnormally low rumen pH.

Antibodies - Proteins found in colostrum, the bloodstream and commercial anti-toxins that protect against disease by neutralizing specific disease-causing agents.

Balanced - Ration that has the proper amounts of each nutrient to meet an animal's nutritional requirements.

Best practices - Research-based procedures shown to produce best results.

C

Clinical - Can be observed.

Coccidostat - Substance added to feed, salt or minerals to keep intestinal coccidia parasites under control.

Concentrates - Feeds with high levels of certain nutrients; soybean meal is a protein concentrate and corn is an energy concentrate.

Corpus luteum - Structure on ovary that develops after release of egg from follicle; secretes progesterone; Latin for 'yellow body.'

H

Hypothermia - Abnormally low internal body temperature.

Hypothesis - Theory or idea that can be tested through the scientific process and experimentation.

K

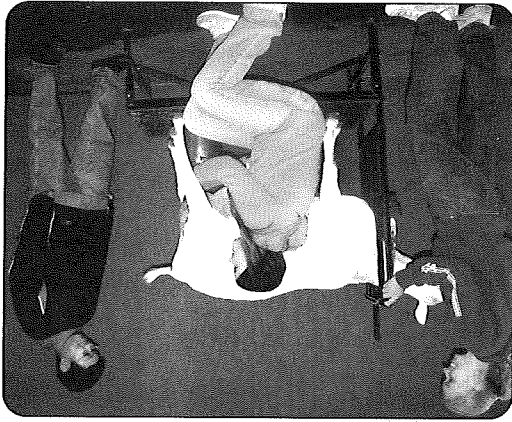
Ketosis - Illness that can occur in late pregnancy when a doe is pregnant with several kids; doe cannot ingest enough energy to meet the nutritional demands of the growing kids so the doe's fat deposits are mobilized. Some by-products of fat mobilization are toxic and make the doe ill.

L

Lactating - Producing milk.

Laminitis - Also known as founder, inflammation of the tissues that connect the hoof and the coffin bone that resides within it.

Quality forage is the basis of a good nutrition program.



Ovulation - When a mature egg is released from the ovary in preparation for fertilization.

O

Navel Ill - Disease caused by bacteria that enter a kid's body through the umbilical cord; can cause internal abscesses, infected joints and death.

N

Milk letdown - Process needed for a dairy animal to release her milk from the udder; happens as a result of routine pre-milking practices and the action of the hormone oxytocin.

Milk fever - Condition caused by too little calcium in bloodstream, usually within a day before or after kidding or at peak production; also called periparturient hypocalcemia.

Mastitis - Inflammation of the mammary gland, usually caused by bacteria.

M

Palatability - Acceptability regarding taste.

P

Parlor - Area where a dairy animal is milked.

Pathogen - Disease-causing agent such as bacteria or viruses.

Probiotic - Commercially-produced preparation of dried beneficial rumen microorganisms.

Progesterone - Reproductive hormone produced by corpus luteum; suppresses estrus and maintains pregnancy.

R

Ration - Proportions of each ingredient in a diet.

V

Vermis - Disease-spreading, destructive and/or annoying pests such as rats, mice and insects.

Vocalization - Crying or other noises made orally.

T

Teat orifice - Opening of each teat through which milk exits and bacteria can enter.

Subclinical - Cannot be observed.

S

Seasonally polyestrous - Comes into heat through regular cycles multiple times at a certain time of the year.

Somatic cell count (SCC) - Number of white blood cells and other cells from an animal's body found in milk.

Goat Resources

The following are examples of resources to help you complete the activities and learn more about this exciting project. Dairy and non-dairy goat resources are included. The Extension Service does not endorse any non-Extension resources.

Magazines and Journals

- Dairy Goat Journal
145 Industrial Drive
Medford, WI 54451
- Goat Tracks Magazine: Journal of the Working Goat
ECPG-GT
Box 755
Estacada, OR 97023
- United Caprine News
P.O. Box 328
Crowley, TX 76036
- Wild Fibers
P.O. Box 1752
Rockland, ME 04841
- Ruminations: The Nigerian Dwarf Goat Magazine
22705 Hwy 36
Cheshire, OR 97419
- The GOAT Magazine
9250 New Salem Road
Pleasantville, OH 43148

Miscellaneous Resources

- "The Line in the Sand"
- "What's the Beef?"
- "A Step Beyond"
- "The Heart of the Matter"
- "A Question of Ethics"

All available at:
 Goodwin Educational Videos
 Instructional Materials Service
 Texas A&M University
 College Station, TX 77843-2588

ADGA educational videotapes and "Dairy Goat Grooming and Showmanship" • "Goat Basics" Contact ADGA for loan or rental information

Goat Learning Kit
 The Ohio State University
 254 Agricultural Administration Bldg.
 2120 Fyffe Road
 Columbus, OH 43210-1067

DAS-0002, Goat Breeding & Reproduction (DVD)
 Instructional Video Library
 Ag Communications Services
 Room 19, Scovell Hall
 University of Kentucky
 Lexington, KY 40546-0064

Books

- Dairy Goat Judging Techniques
by Harvey Considine
ISBN: 0-93084-802-0
- Dairy Goats for Pleasure and Profit
by Harvey Considine
ISBN: 0-93084-800-4
- Goat Health Handbook
by Thomas R. Theford, DVM
ISBN: 1-57360-001-6
- Goat Medicine
by Mary C. Smith & David M. Sherman
ISBN: 0-8121-1478-7
- Raising Milk Goats Successfully
by Gail Luttmann
ISBN: 0-91358-924-1
- Raising Milk Goats the Modern Way
by Jerry Belanger
ISBN: 0-88266-576-6
- The Illustrated Standard of the Dairy Goat
by Nancy Lee Owen
ASIN: B0006WR0LK
- The New Goat Handbook
by Ulrich Jaudas and Matthew M. Vriends
ISBN: 0-81204-090-2
- Your Goats: A Kid's Guide to Raising and Showing
by Gail Damerow
ISBN: 0-88266-825-0
- Veterinary Parasitology Reference Manual (5th Ed.)
by Dr. William J. Foreyt
ISBN: 0-8138-2419-2
- 4-H 131, 4-H Goat Manual
Ohio State University Extension
Media Distribution
385 Kottman Hall
2021 Coffey Rd.
Columbus, OH 43210-1044

Extension/4-H Publications

Extension Service Resources

- 4-H BU-08352 Dairy Goat 1 – Getting Your Goat
- 4-H BU-08353 Dairy Goat 2 – Stepping Out
- 4-H BU-08354 Dairy Goat 3 – Showing the Way
- 4-H BU-08355 Dairy Goat Helper's Guide
- 4-H BU-07909 Meat Goat 1 – Just Browsing
- 4-H BU-07910 Meat Goat 2 – Growing with Meat Goats
- 4-H BU-07911 Meat Goat 3 – Meating the Future
- 4-H BU-07912 Meat Goat Helper's Guide

Dairy Goat Breed Associations

To find current contact information for each association, search for the association name on the internet.

- Alpines International American Dairy Goat Association
- American Dairy Goat Association
- American Harness Goat Association
- American LaMancha Club
- American Nigerian Dwarf Dairy Association
- American Nigerian Dwarf Organization
- Cashmere Producers of America
- Colored Angora Goat Breeders Association
- Golden Guernsey Goat Society
- International Goat Association
- International Nubian Breeders Association
- International Sable Breeders Association
- Kinder Goat Breeders Associations
- Miniature Dairy Goat Association
- Mohair Council of America
- National Pygmy Goat Association
- National Saanen Breeders Association
- National Toggenburg Club
- Nigerian Dwarf Goat Association
- Oberhasli Breeders of America
- Pygora Association



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Page 24 Liz Strang

Page 26 upper Animal Health Publications/ infovets.com

Page 26 lower left Lorrie Conway

Page 26 Lower right Shaun Conway

Page 28 all Amber Conway

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Find more about Dairy Goats and other projects online at:

Discover over 180 National 4-H Curriculum titles in mission areas of Science, Engineering and Technology; Healthy Living; and Citizenship. Youth activity guides are filled with fun, engaging experiences that cultivate abilities youth need for everyday living as they progressively gain knowledge about subjects that interest them.

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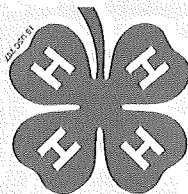
Stepping out

Dairy Goat Level 2



www.4-hcurriculum.org

Explore more curriculum
projects online at:



I pledge
my Head to clearer thinking,
my Heart to greater loyalty,
my Hands to larger service, and
my Health to better living,
for my club, my community,
my country, and my world.

The 4-H Pledge