

*Animal Sciences*

# THE NORMAL ANIMAL

Leader Guide

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**WISCONSIN 4-H PUBLICATION**

HEAD • HEART • HANDS • HEALTH

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## What Should You Do?

You're a 4-H Veterinary Science project leader. Congratulations!

You are the guiding force of this project. Your project members are depending on you to arrange an exciting, informative project year. Your ideas, coupled with assistance from local people with expertise in this field, can make the project outstanding.

Let this leader guide help you to understand the veterinary concepts as covered in the member's manual. This leader guide can help you plan project meetings and activities. The veterinary project complements all 4-H animal projects, such as horse, dairy, pet, sheep, poultry and others.

### Enrollment

The 4-H year begins with enrollment. You may want to give new members some extra guidance when they enroll. Some members may want to enroll in this unit more than once before advancing to the next unit.

### Choosing a Project Animal

Animal ownership is not necessary to participate in this project, but it is encouraged, because frequent animal observation is required. Any type of animal is suitable if facilities to manage it are adequate. Pet mice, birds, dogs, cats, goats, horses and cows are examples.

### Project Materials Available

*The Normal Animal* is the first of three veterinary science units. This leader's guide and a member's manual are available to help you get organized. You can find important discussion topics at the beginning of each lesson. In addition, there is an *Adventure Notebook* with activity ideas for this unit.

## Meeting Suggestions

We suggest your group meet nine times to complete Unit 1. You may decide to group the lessons and conduct fewer meetings. The unit is divided into three main categories by "objectives," which correspond to categories in the *Adventure Notebook*.

### Objectives

- Recognize a normal, healthy animal
- Maintain a normal, healthy animal
- Understand anatomy and function

## Leader Guide Unit I Outline

Meeting 1 – Introduction

Meetings 2-4 – Recognize a Normal, Healthy Animal

Lesson 1 – Attitude and Behavior

Lesson 2 – Skin, Membranes and Intestinal Discharges

Lesson 3 – Body Temperature, Pulse and Respiration Rate

Meetings 5-6 – Maintain a Normal, Healthy Animal

Lesson 4 – Maintain Animal Health

Lesson 5 – Cleaning and Disinfecting

Meetings 7-9 – Understand Anatomy and Function

Lesson 6 – The Cells of the Animal Body

Lesson 7 – Tissues of the Animal Body

Lesson 8 – The Organs and Systems of the Animal Body

### Project Outcomes

Successful completion of this project doesn't mean your members will be veterinarians, but they will be exposed to many careers related to animal medicine. Members will be aware of signs of illness or mismanagement and will have a better understanding of how these problems affect animals.



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This general knowledge will make them more prepared to assist a veterinarian and ask questions related to the health status of their animals.

## Resources

Review this entire leader guide before your first meeting. Use the following resources to help you conduct informative and interesting meetings throughout the 4-H project year.

### Project Materials

- 4H322, *The Normal Animal Member Guide*
- 4H334, *Adventure Notebook*, which features additional activities
- National 4HCCS veterinary science curriculum:
  - BU8048, *From Airedales to Zebras*
  - BU8049, *All Systems Go*
  - BU8050, *On the Cutting Edge*
  - BU8051, *Veterinary Science Group Activity Guide*

### Local Sources of Information

- County 4-H youth development agent
- County UW-Extension Office
  - Curriculum for other 4-H animal science projects
  - Exploring project materials for younger 4-H members
  - Videos and other resources from the Cooperative Media Collection
- Community veterinary clinics
- Libraries
- Local businesses
- Schools

### Places to Visit

- Auction markets
- City parks
- Farms
- Horse stables
- Humane Society
- International Crane Foundation, Baraboo
- Kennels
- Meat processing plants
- Telephone yellow pages
- Veterinary clinics
- Zoos

## Introductory Meeting

Before jumping into the project materials, you may want to hold a 4-H project organizational meeting. Following are some suggestions about the roles of those attending the meeting.

### Help Members:

- Know one another
- Learn about the project
- Learn about veterinary medicine careers
- Plan future meetings

### Leader Does:

1. Invite project members, their families, youth leaders, other community members, a veterinarian or other animal medicine professional to the meeting.
2. Distribute project materials and discuss project objectives listed in this guide.
3. Become familiar with each member's background and animal species interest. Then help members determine the animal they will observe throughout the project.
4. Help members determine individual and group project goals. (Record these goals in 4-H Record Book.)
5. Answer questions about project materials, activities, etc.
6. Decide on future meeting dates.
7. Suggest that members read the lesson(s) for next meeting. Invite a couple of members to bring their project animals. Adequate health precautions should be taken before animals are brought in contact with others.
8. Suggest members do *Adventure Notebook* Activity #3.



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**Youth Leader Does:**

1. Prepare and present a “Get Acquainted” game as a pre-meeting warm-up.
2. Assist members who need help.

**Family Does:**

1. Help your project members take notes during the meeting.
2. Help your project members do project activities and adventures at home.

**Member Does:**

1. Introduce yourself and your family.
2. Tell others where you live and what you like to do.
3. Tell others what is your project animal interest.
4. Describe your goals in the project. Examples:
  - I want to learn how to feed and exercise my dog.
  - I want to complete all Unit I lessons.
  - I plan to exhibit a Veterinary Science poster at the county fair.
5. Read Lesson 1 material in the *Member Guide* before next meeting.

**Animal Medicine Professional Does:**

1. Talk to members about your work.
2. How is it related to or different from the “Fields in Animal Health” list below?
3. Discuss your veterinary school training.

**Fields In Animal Health**

Although this is the 4-H Veterinary Science Project, youth interested in careers that involve animals or relate to veterinary science need not become veterinarians. There are many

other animal health-related occupations that members will learn about while doing project work.

**Veterinary Medicine Services**

- Private practice
  - Livestock
  - Pets
  - Poultry
  - Zoo animals
- Industry
- Biologic
  - Pharmaceutical
  - Other
- Research institutes
  - Private
  - Public
- Education
  - Continuing
  - International
  - Graduate
  - Professional
- Government agencies
  - Agriculture
  - Air Force
  - Army
  - Atomic Energy
  - Food & Drug
  - International



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- Public Health
  - Space
  - State Department

### **Veterinary Medicine Specialties**

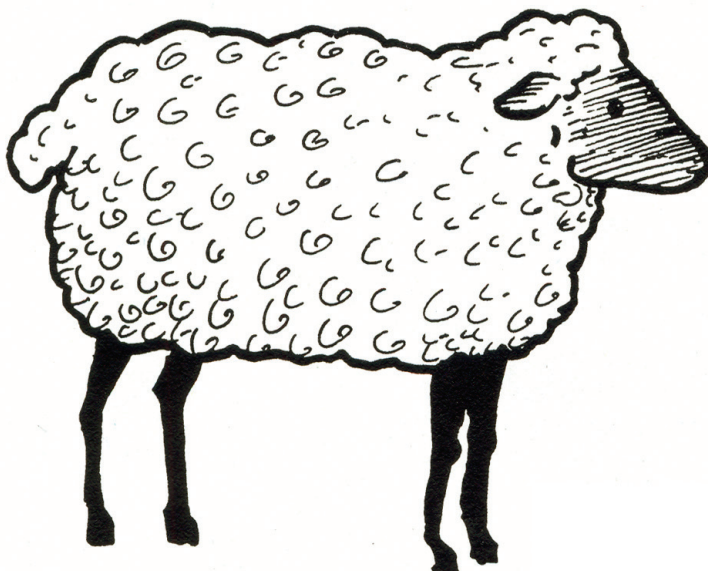
- Administration
- Anatomist
- Bovine reproduction
- Bovine specialist
- Clinician
- Dermatologist
- Epidemiologist
- Equine specialist
- Extension specialist
- Feline specialist
- Food hygienist
- Geriatrics
- Immunologist
- Internal medicine
- Internal medicine
- Laboratory animal specialist

- Microbiologist
- Ophthalmologist
- Parasitologist
- Pathologist
- Pharmacologist
- Physiologist
- Radiologist
- Surgeon
- Toxicologist
- Virologist

### **Objective: Recognize a Normal, Healthy Animal**

The lessons in this section strive to teach concepts which when understood will enable members to assist a veterinarian to make a diagnosis. A project animal's life may depend on the accuracy of a project member's observations.

The important animal characteristics to observe during an exam are included in Lessons 1-3. An exam includes all 10 of the following physical observations:



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### *Mental Condition (Attitude)*

1. Stance (posture)
2. Movement (gait)
3. Voice
4. Appetite (eating habits)
5. Sexual activity

### *Body Condition (Physical Appearance)*

6. Skin and coat condition
7. Skin color
8. Mucous membranes
9. Discharges

### *Measurable Vital Signs*

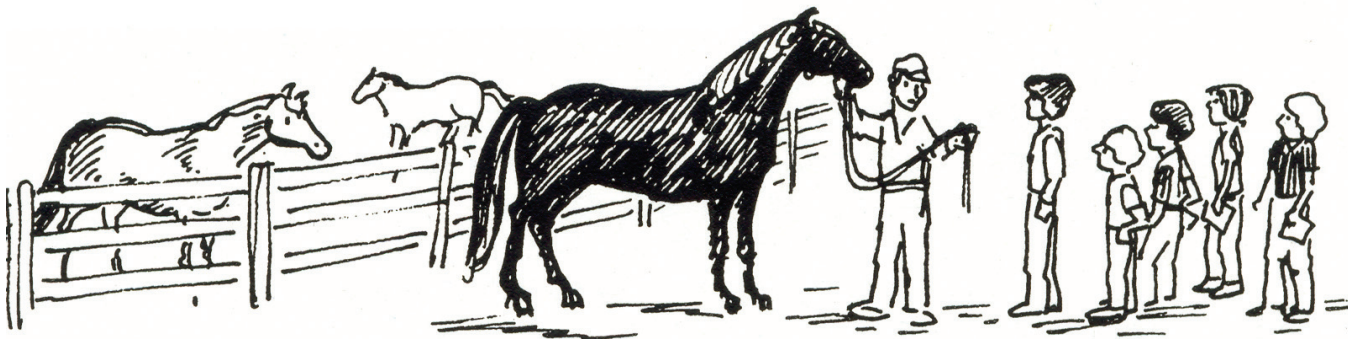
10. Body temperature, pulse rate and respiration rate

## **Learn How to Do a Physical Exam**

You can demonstrate the characteristics of giving a physical exam at one, two or three meetings. Meet with a vet and learn to do this yourself, or invite a vet to your meeting. Bring one of your own pets, or invite your project members to bring their pets – if you're ready for a little chaos! Read about these characteristics in the *Member Guide*. Following are the 14 basic steps to conduct an exam:

1. Be sure the seating is arranged so that when you place the animal on the table (or stand it in the center), everyone will be able to see.
2. Be sure your equipment is handy. You may need:
  - Brush, grooming tools
  - Containers with food and water
  - Stethoscope

- Thermometer
  - Vaseline
  - Watch with second hand
3. Try to evaluate the mental condition of the animal. Familiarity with the animal's normal behavior is important. Does the animal's attitude seem unusually sad or excited?
  4. Observe the animal's stance. Is the posture normal? Does it hunch its back? This may indicate abdominal pain.
  5. Observe movement (gait). Is there evidence of limping? Stiff joints may indicate arthritis, for instance.
  6. Listen to the voice. Is the cat purring? Is the dog whining?
  7. Is appetite normal? Ask the owner. Discuss eating habits. Offer food and water.
  8. Discuss the species sexual activity.
  9. Observe general body condition. Is the animal too fat or too thin?
  10. Observe skin and coat condition. Is hair falling out? Is the skin dry and flakey? Does the coat shine?
  11. Observe skin color. Press the gums. Pink color should come back rapidly. If the area remains whitish, the animal could be anemic.
  12. Examine the mucous membranes. Check eyelids, nostrils, mouth, anus and the vulva. These tissues should be moist and pink. If these areas are not clean, it may be because the animal is not feeling well and is neglecting itself.
  13. Examine discharges. Feces and urine should be normal in color consistency when the animal is healthy. Vulval secretions may indicate infection or sexual activity (in heat).
  14. Check body temperature, pulse and respiration rates (see *Member Guide*).



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## Lesson 1 – Attitude and Behavior

### Help Members:

1. Recognize disease characteristics in animals by:
  - Realizing normal habits, attitudes and behavior of animals.
  - Understanding changes due to exercise, weather and other factors.
2. Use the Animal Record Sheet.

### Leader Does:

1. Review introductory meeting:
  - Be sure all members have a home helper.
  - Be sure all members have a project animal.
  - Remind members about future activities planned.
2. Discuss *Member Guide*, pp. 1-4.
3. Demonstrate Steps 1-8 of a physical exam using a member's project animal.
4. In the *Adventure Notebook*:
  - Help members begin their Animal Record Sheet.
  - Do Activities #1 and #2 at the meeting.
  - Suggest some activities from pp. 4-10 for members to do on their own at home.
  - Ask one or two members to bring their project animals to the next meeting.
5. Announce plans for the next meeting

Hints: Continuity from one meeting to another is very important. A brief review of the assignments or reports is helpful to leaders and members, especially where preparation is needed for a meeting.

### Youth Leader Does:

1. Bring paper and pencils.
2. Lead a pre-meeting work session on packet activities.
3. Help leaders and members to control and provide for any animals present at meeting.

### Member Does:

1. Start recording data on the Animal Record Sheet about your project animal.
2. Plan to report or demonstrate progress on one of the Adventure activities.
3. Read Lesson 2 material in the *Member Guide* before next meeting.

## Lesson 2 – Skin, Membranes and Intestinal Discharges

### Help Members:

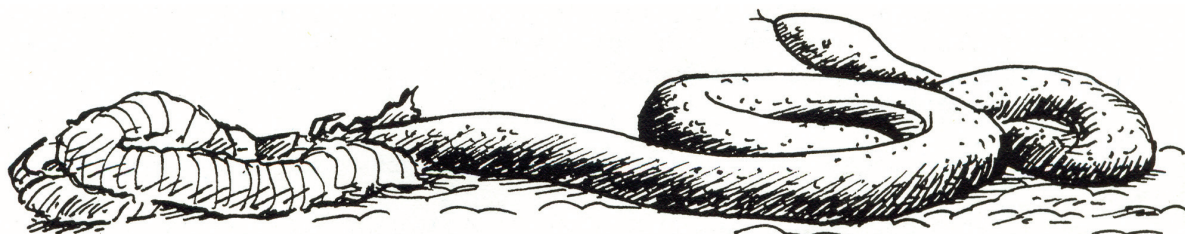
1. Determine normal animals through color and conditions of:
  - Skin or coat
  - Mucous membranes (lining of mouth, nose, eyes, vagina and rectum)
  - Intestinal discharges (feces and urine)
2. Realize the importance of training, care and feeding.

### Leader Does:

1. Review Lesson 1:
  - Review Adventure activities completed by members.
  - Review record sheet information. If anyone has an animal that is difficult to record, discuss why.
2. Discuss *Member Guide*, pp. 5-7.
3. Demonstrate Steps 9-12 of physical exam.
4. In the *Adventure Notebook*:
  - Suggest activities to do at home.
  - Continue work on the Animal Record Sheet.

### Youth Leader Does:

1. Continue roles as detailed in Lesson 1.
2. Help leader to organize a trip. Zoo activity in *Adventure Notebook* is a good one.
3. Remind members to bring thermometers and stethoscopes to next meeting.





**Member Does:**

1. Continue to work on Adventure activities on your own.
2. Continue to record information on Animal Record Sheet.
3. Read Lesson 3 in your *Member Guide* before the next meeting.
4. Try to record the temperature, pulse and respiration rate of your project animal before the next meeting. Consult *Member Guide*.

**Lesson 3 – Body Temperature, Pulse and Respiration Rate**

**Help Members:**

1. Realize that good health is indicated by:
  - Body temperature
  - Pulse (heart rate)
  - Respiration
2. Properly use and read thermometers.
3. Properly use stethoscopes.

**Leader Does:**

1. Review Lesson 2:
  - Review Adventure activities done by members.
  - Review Animal Record Sheets. Discuss any problems.
  - Ask members to report on recorded body temperature, pulse and respiration rates.
2. Discuss *Member Guide*, pp. 8-10.

3. Demonstrate Step 13 of physical exam. Be sure that all members can do this with their own project animal.
4. Fill in the Lesson 3 section in *Adventure Notebook*.

Hints: It would be helpful to visit a local veterinarian prior to the club meeting. Have the veterinarian point out some of the factors that relate to Lesson 3. Perhaps he or she may even attend and help with the discussion of the topic.

**Youth Leader Does:**

1. Similar duties as in previous meetings.
2. Be sure you know how to take temperature, pulse and respiration in case your leader needs help.
3. Ask one or two members to prepare a short demonstration on some phase of animal care concerning their project animal.

**Member Does:**

1. Finish recording information from Lessons 1-3 on the Animal Record Sheet.
2. Read Lesson 4 in the *Member Guide* before next meeting.
3. Prepare a short demonstration on adequate housing of your project animal for the next meeting.

**Objective: Maintain a Normal, Healthy Animal**

A project member should learn management practices that reduce the risk of introducing disease and improve the animal's comfort. Some of the following important practices are covered in *Member Guide*, Lessons 4 and 5:

- Clean and disinfect housing
- Control visitation
- Keep animal's disease resistance high through vaccination
- Keep animals well groomed
- Keep eating utensils clean
- Maintain pasture and premises
- Prevent injury
- Provide adequate housing
- Provide adequate sunlight and exercise
- Quarantine new arrivals



*Demonstrating These Management Practices:*

- As a group, travel to each member’s home and observe and discuss these management practices.
- Go on field trips to poultry, dairy and horse farms in your area. Compare differences in management practices.
- Prepare a display of various vaccines for different species. Ask a veterinarian to demonstrate how to give vaccines and other injections to an animal.
- Use the *Adventure Notebook* activity list to plan group trips related to Lessons 4 and 5.
- Allow time for members to report their at-home Adventure activities.
- Ask members to present models of possible housing set-ups for their animals at a meeting.
- Prepare an exhibit of cleaning tools and disinfection products.
- Design a quiz for project members based on Lesson 5 and your display.

### Lesson 4 – Maintain Animal Health

*Help Members:*

1. Realize the importance of maintaining animal health.
2. Understand how management relates to disease and health in areas of:
  - Exercise
  - Grooming
  - Housing
  - Nutrition
  - Preventing introduction and spread of disease
  - Sanitation

*Leader Does:*

1. Review the completed Animal Record Sheet information in the *Adventure Notebook*.
2. Discuss *Member Guide*, pp. 11-15.
3. Plan to carry out one or more of the ideas in the *Leader Guide*.
4. In the *Adventure Notebook*, choose activities to do at home.

*Youth Leader Does:*

1. Help members with any activities they are doing on their own.
2. Help leader organize a field trip, display, demonstration or quiz.
3. Make plans with members to use their demonstrations or exhibits in the community, such as fairs or other events.
4. Help the group start “Maintenance Menagerie,” Adventure Activity #1.

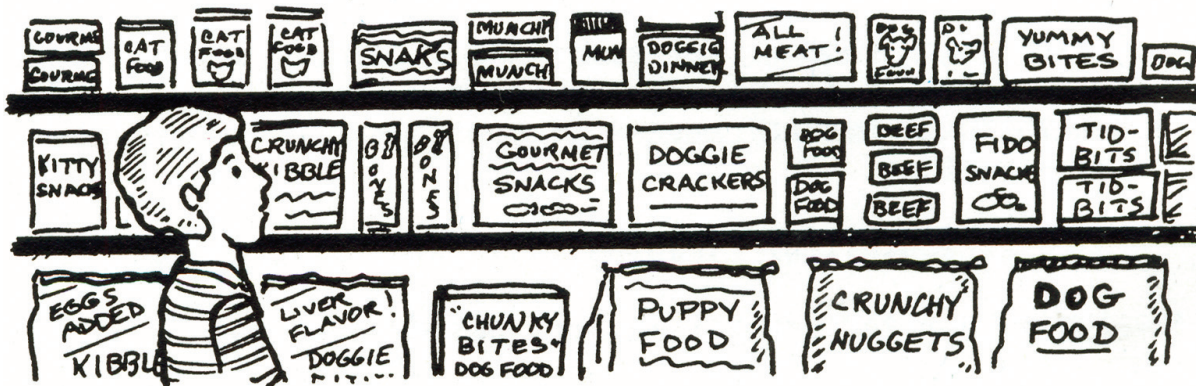
*Member Does:*

1. Complete “Maintenance Menagerie” activity.
2. Continue to observe your project animal, even if you are no longer recording information.
3. Read Lesson 5 in the *Member Guide* before next meeting.
4. Collect samples and labels of common disinfectants used at home.
5. Continue work on *Adventure Notebook* activities.

### Lesson 5 – Cleaning and Disinfecting

*Help Members:*

1. Realize why sanitation is important in disease prevention and maintenance of animal health.



- 
2. Realize why sanitation is important to:
    - Management
    - Vaccination
    - Other disease control measures
  3. Understand that these principles are also important to humans.

**Leader Does:**

1. Review Lesson 4:
  - Review “Maintenance Menagerie” activity.
  - Summarize plans for community demonstrations or exhibits.
  - Ask members to discuss their samples of disinfectants.
  - Discuss any unusual observations about project animals.
2. Discuss *Member Guide*, pp. 16-18.
3. Carry out another idea from the *Leader Guide*.
4. Remind members they should be working on their 4-H Record Book. Perhaps they need to adjust their goals.
5. Continue *Adventure Notebook* activities.

**Youth Leader Does:**

1. Ask several members to prepare a simple display on parts of a cell for next meeting.
2. Encourage youth to work on their community exhibit and 4-H Record Book.

**Member Does:**

1. Continue to work on activities from the *Adventure Notebook*.
2. Read Lesson 6 in the *Member Guide* before next meeting.

3. Continue to observe project animals and report any changes to your club.
4. Develop a file on the disinfectants brought to this meeting.

**Objective: Understand Structure and Function**

A project member should learn to appreciate the complex composition of a project animal’s body. This awareness will help the youth understand why a physical exam is important, how a diagnosis is reached, and how management affects the animal’s bodily functions.

Lessons 6-8 introduce the member to this topic by gradually building an animal body.

- Cells combine to form tissues
- Tissues group to become organs
- Organs work in cooperation as a system

There are 11 major systems in an animal:

1. Digestive
2. Skeletal
3. Circulatory
4. Nervous
5. Respiratory
6. Reproductive
7. Excretory
8. Integumentary
9. Muscular
10. Endocrine
11. Sensory



*Demonstrating These Concepts:*

- Use the *Adventure Notebook* activity list to plan group trips related to Lessons 6-8.
- Arrange to have a microscope at the meeting, or hold a meeting at a veterinary clinic or laboratory. Observe cells. Ask members to identify different types. Perhaps you can obtain some stained slides.
- Try to borrow organ models from a high school biology department or veterinarian. Display these at a meeting. Identify parts and functions.
- Allow time for members to report or demonstrate their at-home Adventure activities.
- Obtain fresh tissues and organs from a slaughter plant or butcher shop.
- Label some important parts. Discuss the types of cells that must combine to form each tissue or organ. Next, determine the function the organ system performs.
- Watch a surgery at a veterinary clinic.

## Lesson 6 – The Cells of the Animal Body

*Help Members:*

1. Develop knowledge of the structure of animals.
2. Learn about basic anatomy and physiology of animals.
3. Understand changes in body function.

*Leader Does:*

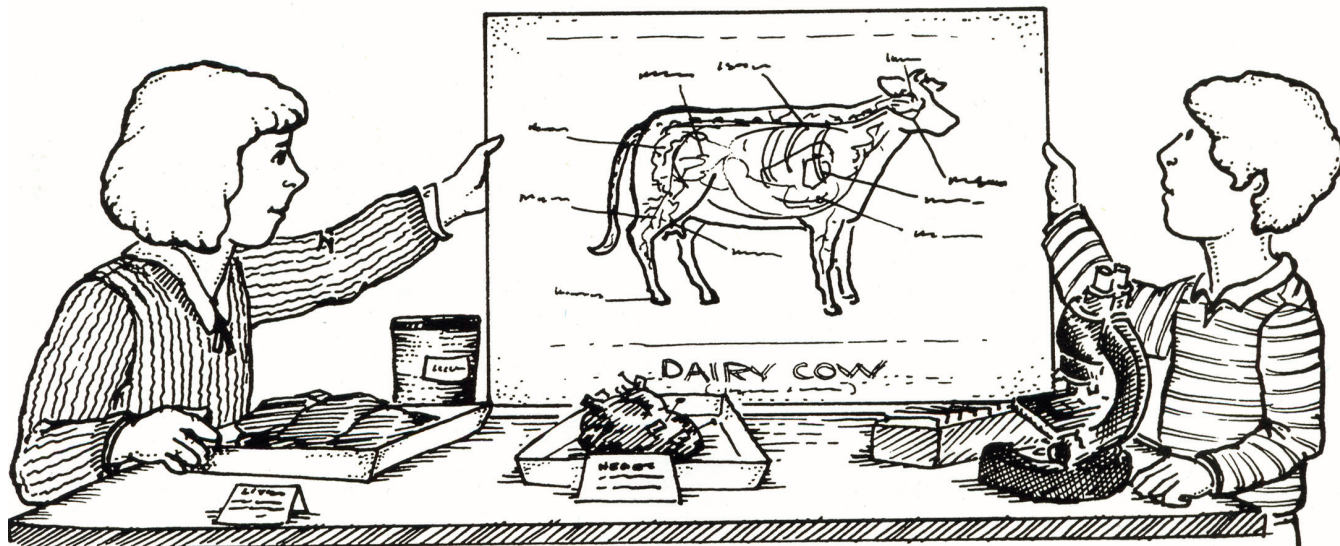
1. Review:
  - Review main points of Lessons 4 and 5.
  - Exchange disinfectant information collected.
  - Have assigned members demonstrate parts of a simple cell.
  - Discuss any unusual observations about project animals.
2. Discuss *Member Guide*, pp. 19-20.
3. Plan to carry out an idea from the *Leader Guide*.
4. Do *Adventure Notebook* activities as a group.
5. Continue to observe project animal.

*Youth Leader Does:*

1. Help members with *Adventure Notebook* activities (some are difficult).
2. Help leader with an idea from the *Leader Guide*.
3. Plan a demonstration or skit to involve project members; present it at a general club meeting to teach others about veterinary science.

*Member Does:*

1. Report the results of your activities at one of the next meetings.
2. Read Lesson 7 in the *Member Guide* before next meeting.



3. Plan a demonstration using tissues and organs for the next meeting.
4. Continue to observe project animal.

### Lesson 7 – Tissues of the Animal Body

#### Help Members:

1. Expand their knowledge of the structure and function of the animal body.
2. Apply this knowledge to the human body.

#### Leader Does:

1. Review:
  - Review main points of Lesson 6.
  - Allow time for member activities and demonstrations.
  - Discuss project animal observations.
2. Discuss *Member Guide*, pp. 21-23.
3. Display four types of tissues (see *Member Guide* and *Adventure Notebook* for ideas).
4. Continue planning party or event.
5. Carry out an idea from the *Leader Guide*.
6. Do part of *Adventure Notebook* activity at the meeting.

#### Youth Leader Does:

1. Help with idea.
2. Help project members to complete their project activities.

#### Member Does:

1. Complete work on your activities for next meeting.
2. Read Lesson 8 in the *Member Guide* before next meeting.

3. Gather materials that need to be returned to your leader.
4. Continue observing project animals.

### Lesson 8 – The Organs and Systems of the Animal Body

#### Help Members:

1. Understand how organs combine in systems.
2. Realize that systems combine to complete the animal.
3. Apply this knowledge to the human body.
4. Understand that knowledge of the body, good management and feeding will keep an animal healthy.

#### Leader Does:

1. Review:
  - Briefly review main points of Lessons 6 and 7.
  - Complete any activities or reports.
  - Finalize plans for community demonstrations or exhibits.
2. Discuss *Member Guide*, pp. 24-28.
3. Display some organs and systems (see *Member Guide* and *Adventure Notebook* for ideas).
4. Carry out an idea from the *Leader Guide*.
5. Do an *Adventure Notebook* activity.

#### Youth Leader Does:

1. Continue previous role.
2. Help members organize for Unit II – Animal Disease (see *Adventure Notebook* activity).
3. Collect materials returned by members.
4. Encourage a receptive older member to become a youth leader next year!



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*Reminder:*

1. Praise members for their effort in Unit I.
2. Discuss ways to let the members' general clubs know about their work.
3. Encourage some members to enroll in Unit I again if they want.
4. Pat yourself on the back!

We thank you for your time and talent!





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