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Introduction

Thank you for volunteering your time to be a BC 4-H Sheep Project leader.

The role of the sheep project leader is to:

- Help 4-H members learn about raising and managing sheep.
- Introduce members to 4-H sheep project materials and other sheep resources.
- Work with members to complete 4-H Achievement requirements.
- Encourage members to work towards earning 4-H Project Awards (see 4-H Award Opportunities Guide, Publication #128).
 - Jr. Badges
 - Jr. Proficiency Certificate
 - Sr. Skill Certificates
 - Project Pin
 - Honour Pin
- Provide information on various sheep project options.
- Promote personal development opportunities in 4-H (communications, community projects, conferences, camps).

As a 4-H Sheep Project leader, you will wish to know and help teach:

- The overall objectives of the BC 4-H Program.
- The general objectives of the BC 4-H Sheep Project.

4-H Program Objectives

The B.C. 4-H program develops 4-H members in such a way that they become effective and responsible members of society. BC 4-H project work and programs are designed to help members:

- Increase their knowledge and develop skills in subject matter areas which are of interest and value to them.
- Acquire a positive attitude towards learning and develop the ability to make wise decisions.
- Learn how to work effectively in groups.
- Enlarge their horizons by participating in new experiences.
- Acquire a responsible attitude toward community service.
- Develop physically through healthful living and active recreation.
- Develop as responsible members of society.



4-H Sheep Project Objectives

- To develop pride and responsibility associated with owning animals.
- To acquire an understanding of sheep breeding, production and management practices, and acquire skill in executing them by owning, caring for and keeping records of sheep.
- To develop skill, patience and understanding in handling animals.
- To increase knowledge of safety precautions for man and animals.
- To acquire an understanding of the economics of the sheep industry and develop decision-making skills.
- To be able to identify the wholesale and retail cuts of lamb and lamb products, desired carcass characteristics, and understand the importance of lamb in human nutrition.
- To acquire an understanding of livestock marketing.
- To develop an understanding of science and scientific research and its value to the sheep and meat industry.
- To earn money and learn how to use it effectively.

4-H Achievement

Achievement certificates are awarded on the basis of work done by the club member throughout the entire year. To earn an Achievement certificate a 4-H member must satisfactorily complete the following:

- 1. Management of the Project
 - An inspection by club leader and/or designated person to determine the "manner in which the project work is progressing"
 - See the 4-H Livestock Husbandry Score Card, Publication #140(C), for guidelines on evaluating project management.
- 2. Completion of the Project
 - A member must exhibit his/her completed project at Achievement Day.
 - See the 4-H Showmanship Score Card, Publication #148(R) for suggestions on evaluating 4-H project completion at Achievement Day.
 - Leaders may make alternate achievement arrangements for members enrolled in Senior Management projects or those with extenuating circumstances.
- 3. Completion of Record Book
 - A member must complete a project record book and turn it into a club leader.

4-H members may earn Achievement for each unit they are enrolled in during any given year providing they complete the Achievement requirements of each unit individually.

Members enrolled in Sr. Management Projects, Junior Leader Projects, or Self Determined Projects earn project specific certificates rather than Achievement Certificates.

Sheep Project Options

Please refer to the 4-H Sheep Project Regulations (Publication #1405) 4-H members may enrol in a maximum of four units per year.

Unit I - Fed Lamb

- This project is designed for junior members and older members with little sheep experience.
- The objectives are to have members learn about the responsibility involved in caring for animals, develop patience through working with a 4-H lamb, and learn about marketing a 4-H project animal.
- Lambs in this unit should be exhibited at Achievement Day.
- Records for this project should cover a period of 4 months.

Unit II - Ewe Lamb

- This project is designed for members who wish to gain more experience into the practical aspects of sheep production.
- The objectives are to have members learn about the responsibility involved in caring for animals, develop patience through working with a 4-H lamb, and increase their understanding of the qualities desirable in breeding stock.
- The ewe lamb project may be retained as a yearling ewe and/or a ewe with lamb(s).
- The ewe lamb project may be a good option for members who do not want to sell their project at the end of the year.
- Lambs in this unit should be exhibited at Achievement Day.
- Records for this project should cover a period of 4 months.

Unit III - Yearling Ewe

- This project is an extension of the ewe lamb project. The ewe lamb cared for in the previous project year should be retained and exhibited as a yearling.
- The objectives are to learn about selection of breeding stock, nutrition, feeding methods, housing and handling facilities, and safety.
- Ewes enrolled in this unit should not be pregnant or have had their first lambing.
- Ewes in this unit should be exhibited at Achievement Day.
- Complete feeding records for this project must cover a period of at least 4 months. The record book should also reflect member involvement in the over wintering period.



Unit IV - Ewe with Lamb(s)

- This project is an extension of the ewe lamb project and the yearling ewe project. The ewe lamb or yearling ewe cared for in the previous project year should be retained and exhibited as a ewe with lambs.
- The objectives are to learn about sire selection, breeding, nutrition of the pregnant ewe, lambing facilities, lambing, care of the newborn lamb, lactation and weaning.
- Ewes enrolled in this unit should be exhibited at Achievement Day with all their lambs. If one of the lambs has been kept as an intact ram, the project should instead be evaluated at the member's home.
- Complete feeding records for this project must cover a period of at least 4 months, however, members are encouraged to keep records covering all aspects of the breeding program including sire selection, breeding, lambing, and weaning.

Unit V and IX - Sheep Flock and Wool Type Sheep Flock

- This project is an extension of the yearling ewe and ewe with lamb(s) projects. The yearling ewes and/or ewes with lamb(s) cared for in previous years should be retained and exhibited as part of the sheep flock.
- Members are encouraged to build up a sheep flock over a period of years.
- The objectives are to learn about care and management of the breeding herd including control of insect pests and diseases.
- If the sheep flock includes 3 or fewer ewes it may be exhibited at Achievement Day or evaluated at the member's home. Records must be kept for at least 4 months, however, members are encouraged to keep records covering all aspects of the breeding program including sire selection, breeding, lambing, and weaning.
- If the sheep flock includes 4 or more animals it is considered a Senior Management Project. Senior Management Projects require approval and must be evaluated by Youth and Community Development Staff. Projects may be exhibited at Achievement Day or be evaluated at the member's home. Records must be kept for 12 months.

Unit VI, VII, VIII - Wool Type Ewe, Yearling or Ewe with Lamb(s)

- These projects are for those members interested in gaining knowledge of wool type sheep and the fleece industry.
- The objectives are the same as for the meat type ewe, yearling, and ewe with lamb projects with the additional goals of learning to correctly care for and evaluate fleece.
- Achievement and record keeping requirements are as described for meat type ewe, yearling, and ewe with lamb(s) projects.

Unit X - Market Lamb

- This project is for senior members who wish to gain further insight into the selection and marketing of a carcass animal.
- Objectives are for members to learn live animal evaluation to determine muscling and finish, objectives and requirements of sheep carcass grading, and comparison skills to relate live animal evaluation to actual carcass merit.
- Lambs in the unit should be exhibited at Achievement Day separately or combined with fed lambs. To complete Achievement members must personally inspect the lamb carcass after it has been slaughtered and graded.
- Records for this project should cover a period of 4 months and should include information on carcass grading.

Unit XI – Feedlot (Senior Management Project)

- This project is for the senior member who intends to become, or is presently involved in commercial sheep production.
- Objectives are for members to select, handle, feed and market at least 6 feeder lambs.
- This unit is considered a Senior Management Project. Senior Management Projects require approval and must be evaluated by Youth and Community Development Staff.
- Projects may be exhibited at Achievement Day or be evaluated at the member's home. Detailed record keeping is expected to be an integral part of this project. Members may use the Livestock Senior Management Record Book (Publication #411).

Unit XII – Advance Skill (Senior Management Project)

- This project is for senior 4-H members interested in challenging themselves to learn about a new aspect of the sheep industry.
- Objectives are for members to do research a/or carry out a project of their choosing.
- This unit is considered a Senior Management Project. Senior Management Projects require approval and must be evaluated by Youth and Community Development Staff.
- Depending on the nature of the project it may be exhibited or evaluated at the member's home. Detailed record keeping is expected to be an integral part of this project. Members may use the Livestock Senior Management Record Book (Publication #411).



Possible Advance Skill Projects include:

- a) Crossbreeding program.
- b) Comparison of crossbred and purebred lambs.
- c) Effects of genetics and environment on production.
- d) Confinement rearing.
- e) Summer job on sheep farm with a "Show Circuit" flock.
- f) Sheep skin tanning.
- g) Care and management of herd sire.
- h) Compare the cost of rate of gain between high and low energy rations.
- i) Compare the economics of feeding ewes vs. feeding wethers.
- j) A study of range management.
- k) A study of artificial insemination.
- l) A study of breeds and their characteristics.
- m) Carcass composition and retail value.
- n) Parasites, diseases, and other health problems.
- o) Study of the lamb price cycle.
- p) A study of the rumen.
- q) Feedlot design.
- r) The various cuts of lamb and how to cook them.
- s) Any other topic of interest related to sheep.

Sheep Project Awards

4-H members may earn sheep badges and/or senior skills certificates in the areas of: judging, showmanship, husbandry, feeding, marketing, and shearing. See the 4-H Award Opportunities Guide (Publication #128) for details.



Teaching Techniques

To be a good 4-H leader you must first understand young people and have the ability to arouse their interest and enthusiasm. It is important that you yourself be interested and enthusiastic about the subject you are teaching.

When preparing to teach project skills to your 4-H club members consider the following tips.

- 1. Have clear learning goals in mind for each meeting.
- 2. Be prepared.
- 3. Be simple, clear and definite.
- 4. Be natural and have fun. A positive attitude is contagious.
- 5. Keep the members active, and they will stay interested.
- 6. Let the members try doing things for themselves. Be available to offer help if needed.
- 7. Be patient, especially with nervous members.
- 8. Encourage members by praising them for positive contributions.
- 9. Do not play favourites.
- 10. Set a good example.

How to use this Guide

This guide includes teaching suggestions and activities to help you educate 4-H members about raising, managing and exhibiting sheep. This guide should be used in combination with the Sheep Manual (Publication #1417) and other sheep resources. You will notice the guide is organized with the same chapters as the Sheep Manual; this will help you find teaching ideas for the topics you plan to teach. The suggestions and activities included in this manual are just a guide; feel free to use your creativity to come up with other teaching strategies. The key to good teaching is actively involving the learner. Make sure to offer 4-H members plenty of opportunities to "learn to do by doing".

Project Teaching

Who Does The Teaching?

It is not required that you, the 4-H Sheep Leader, know or teach all the aspects of sheep ownership covered in the sheep project. Try to identify as many people as possible in your club or community who have knowledge or skills in certain areas. You may be able to draw on people such as: veterinarians, feed store representatives, sheep breeders, shearers, 4-H alumni, spinners and weavers, or even senior 4-H members. If you work with these people by providing specific learning goals you can invite them to lead a teaching session for your members.

What Do You Teach?

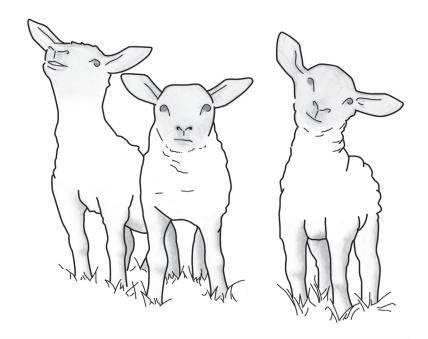
Review the objectives of the 4-H Sheep program and use the 4-H member's Sheep Manual for specific ideas. These, combined with your own knowledge of the sheep industry will give you a base to start on. As you become acquainted with your members and visit their farms you will find problem areas that you may wish to improve. It may also be logical and convenient to teach specific topics at the time of year when they would normally take place on a sheep farm; for example you may choose to teach about shearing in the spring. A good teacher is objective. They may have special interests or biases, but they keep these out of their teaching. They keep up to date and base their teaching on facts.

When and Where Do You Teach?

Depending on the type of 4-H club you are in, you may teach project information at general 4-H club meetings, or you may hold special project meetings dedicated exclusively to learning about sheep. Project teaching may also take place at special events such as; field days, husbandry check visits, fairs, or on Achievement Day.

How to Teach

Individuals learn in different ways so it is a good idea to include more than one teaching method in your lessons. Variety not only will not only promote learning but it will help keep the members attention as well.



LEARNING METHOD	PERCENTAGE OF INFORMATION RETAINED
Reading 10%	
Hearing	20%
Seeing	30%
Hearing and Seeing	50%
Saying	70%
Saying and Doing	90%

Did you know young people will retain different amounts of information depending on the method by which they learned it?

Considering this information it would be wise to use a variety of methods in the course of a year or even in a single meeting. This makes it more interesting to members and therefore, you will accomplish more with them.

Some suggested methods you could use to get your members involved:

- Discussions and debates.
- Demonstrations with you and/or a member presenting the material.
- Workshops on topics such as balancing rations, record keeping, grooming, or husbandry.
- Slide shows or movies.
- Talks by special resource people such as a nutritionist, a veterinarian, or a local sheep breeder.
- Trips to farms, businesses, organizations, or special sheep events.
- Games.

See pages 72-93 of the 4-H Leaders Handbook for more suggestions on teaching techniques and managing a 4-H project.



Project Selection

Objectives

To teach 4-H members about:

- The history of sheep
- The sheep industry in British Columbia
- Breeds of sheep common in British Columbia
- Parts of the sheep
- Characteristics that are desirable in sheep
- Selecting sheep based upon their general conformation and breed standards

Suggested Activities

Match Up

Find color pictures of various breeds of sheep. Write the names of the breeds on index cards. Write breed characteristics on index cards also (one characteristic per card). Have the members sort out the cards matching up the photo, name, and characteristics for each breed.

You may also do this activity by handing out the cards and having members find people with the photo, breed name or characteristic that goes with theirs.

Field Trip

To teach your club about breeds of sheep and project selection it may be beneficial to take them on a field trip. Consider the following options:

- Take a tour of local sheep farms, compare between the breeds being raised in your area.
- Attend a purebred sheep show as a group, listen to what the judge says about each breed.
- Attend a livestock auction and try to identify the various type of sheep being sold.
- Hold a mock judging event, have members chose the best animal out of a group and explain why.

Wherever you go make sure the members are engaged in the activity. Explain to them the purpose of the trip and give them a simple assignment to complete while they are there.

Pictionary

Once members are familiar with the characteristics of common sheep breeds, break them into teams and play Pictionary. Draw the name of a breed from a hat and have members draw it. Team members must guess which breed it is based on breed characteristics or creative additions in the drawing. For example: The Canadian Arcott could have a maple leaf on it.

Sheep Fact or Fiction

Just for fun – a short quiz about sheep. Decide as a club which are FACT (true) and which are FICTION (false).

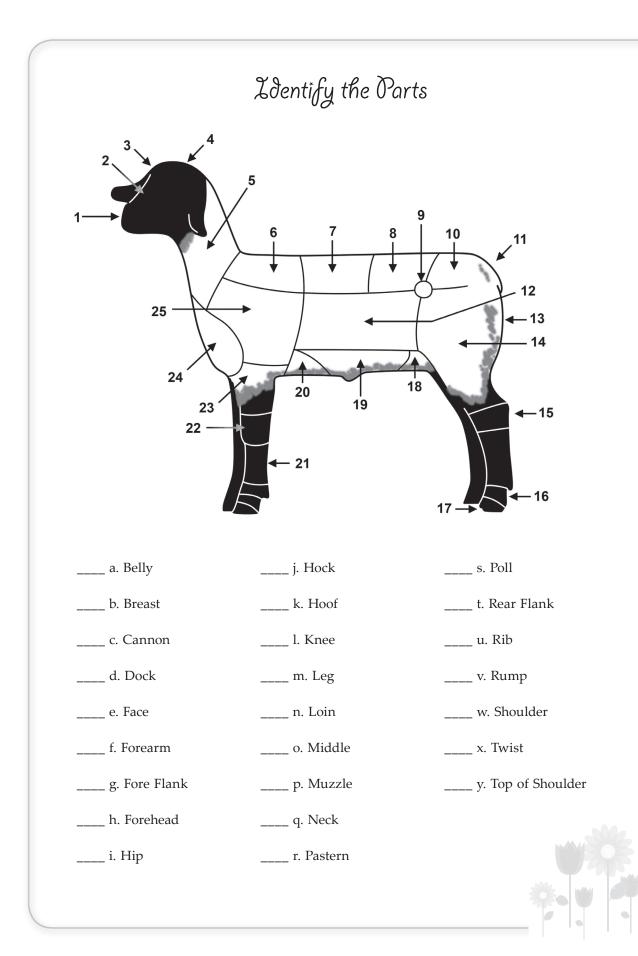
The sheep is a member of the bovine family.	FACT – The bovine family includes buffalo, bison, antelopes, gazelles, and both wild and domesticated cattle, goats and sheep.
The main difference between sheep and goats is that goats have a divided upper lip and sheep don't.	FACT
The Romans bred sheep for their fine lustrous wool, from which they made their togas.	FACT – The Romans values the fine wools for making their togas
In earlier times, sheep were valued more for their wool than for meat.	FACT
The original wild sheep were thought to be from Africa	FICTION – the original wild sheep is thought to be the Mouflon of south-central and south-west Asia.
There are approximately 100 breeds of sheep worldwide	FICTION – there are over 300 breeds of sheep around the earth.
In Australia there are more sheep than there are people.	FACT – There are approximately 6 sheep for every person in Australia
In British Columbia there is approximately 1 sheep per person.	FICTION – In BC there are about 50 people to every 1 sheep
In BC we produce enough lamb for our own consumption.	FICTION – We only produce only 15-20% of the lamb we consume, the rest is imported.
The French brought the 1st sheep to Canada	FACT – The French brought the 1st sheep to Canada in 1677.

Who Am I ?

In BC there are 15-20 common breeds of sheep. Using the 10 breeds listed below answer the "Who Am I?" Put the correct breed in the space under the description.

CANADIAN ARCOTT	SUFFOLK	ST. CROIX
CHAROLLAIS	SOUTHDOWN	ROMNEY
CLUN FOREST	HAMPSHIRE	
DORSET	BORDER CHEVIOT	

- 1. I have a short blocky body and distinctive black nostrils and lips.
- 2. I am a small and gentle breed, ideal for children.
- 3. I am a large hardy sheep from your "home and native land"
- 4. You won't have to spend any time shearing me because I have a hair coat.
- 5. I am extremely adaptable and can thrive in challenging environments.
- 6. I am one of the oldest breed of sheep. I can grow very quickly and produce and ideal carcass at a young age.
- 7. My wool is often in demand by hand spinners.
- 8. Pardon moi? Did you say my hair is thin? At least I have a strong muscular body.
- 9. I am the most popular breed in Canada. I produce heavy, fast growing lambs.
- 10. I am very popular in Canada, and I can breed out of season.



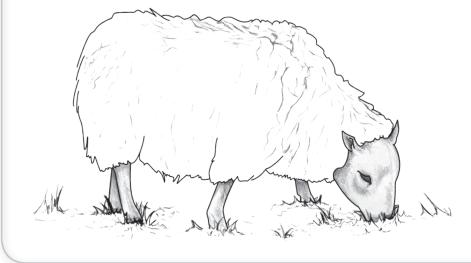
Activity Answers

Who Am I?

Identify the Parts

- 1. Border Cheviot
- 2. Southdown
- 3. Canadian Arcott
- 4. St. Croix
- 5. Clun Forest
- 6. Hampshire
- 7. Romney
- 8. Charolais
- 9. Suffolk
- 10. Dorset

- 19 a. Belly 24 - b. Breast
- 21 c. Cannon
- 11 d. Dock
- 2 e. Face
- 23 f. Forearm
- 20 g. Fore Flank
- 3 h. Forehead
- 9 i. Hip
- 15 j. Hock
- 17 k. Hoof
- 22 l. Knee
- 14 m. Leg
- 8 n. Loin
- 12 o. Middle
- 1 p. Muzzle
- 5 q. Neck
- 16 r. Pastern
- 4 s. Poll
- 18 t. Rear Flank
- 7 u. Rib
- 10 v. Rump
- 25 w. Shoulder
- 13 x. Twist
- 6 y. Top of Shoulder



Feeding and Nutrition

Objectives

To teach members about:

- Basic nutrients
- Types of feed
- Sheep digestion

To provide members with the skills necessary to:

- Distinguish between feeds
- Develop a feeding program for their 4-H projects

Suggested Activities

Poster Challenge

Challenge your club members to research one aspect of sheep nutrition and or digestion and prepare a poster or model to show the rest of the group at the next meeting.

Suggested challenge topics:

- **Junior:** Challenge junior members to find out as much as they can about ruminant animals. Their poster or model could include a list of other ruminant animals.
- **Intermediate:** Challenge intermediate members to identify the purpose of all parts of the sheep digestive system. Their poster or model could identify differences between digestion in people and digestion in sheep.
- Senior: Challenge senior members to find out as much as they can about the esophageal grove in newborn lambs. Their poster or model could summarize the changes to the ruminant stomach as the animal matures.

Feed Identification

Collect samples of feeds common in your area. Allow the members to handle the feed samples and try to identify them. If many club members are feeding a grain pre-mix, have them bring in a sample and a list of ingredients. Challenge members to identify the components of the pre-mix by comparing with the individual feed sample. Senior members could be challenged to compare between various feeds for effectiveness and cost efficiency.

If there is someone in the community who is very knowledgeable about feeding sheep (feed store nutritionist, experienced shepard) you could invite them to do a workshop with your club on how to design a lamb feeding program.



Nutrient Match Up

Use lines to connect the name of the nutrient to its role in the body.

PROTEIN	REPRODUCTION AND LACTATION
VITAMIN E	HEAT, ENERGY AND FATTENING
CARBOHYDRATES	GENERAL HEALTH
SODIUM (MINERAL)	BONE A TEETH FORMATION, MILK PRODUCTION
FATS	TRANSPORT OF NUTRIENTS AND CONTROL OF BODY TEMPERATURE
VITAMIN A	BONE DEVELOPMENT
CALCIUM (MINERAL)	ACTIVITY OF THE THYROID GLAND
WATER	HEAT, ENERGY AND FATTENING
VITAMIN D	GROWTH, REPRODUCTION, MUSCLE AND WOOL DEVELOPMENT
IODINE (MINERAL)	STIMULATES APPETITE
	En and the second
	JAR WILL WAR

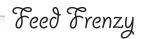
Name that Vitamin

Use the chart on the following page to find answers to the following questions about Vitamins.

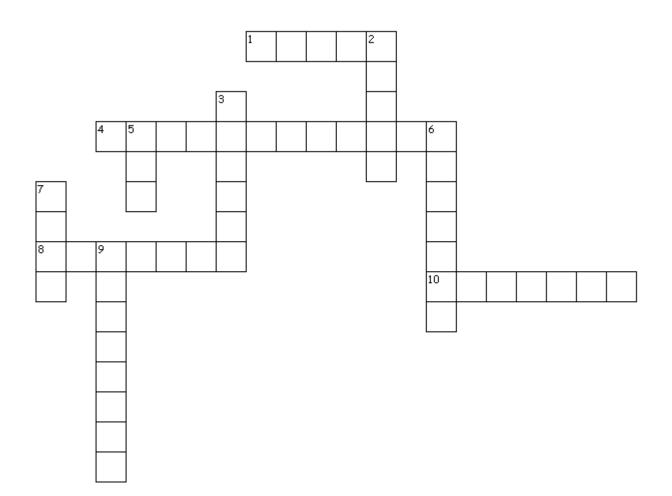
- 1. Which Vitamin is deficient if your sheep is suffering from White Muscle Disease?
- 2. Which vitamin is the Sunshine vitamin?
- 3. If a sheep bleeds heavily from a wound, which vitamin would you expect to be deficient?
- 4. Which vitamins work together with minerals to perform specific functions?
- 5. If an animal has rickets, a severe bone disease, which vitamin is likely to be deficient?
- 6. If you feed sheep young, leafy, green plants, which vitamins would you be supplying?
- 7. Which vitamin can the sheep body produce that the human body can not?

VITAMIN	SOURCE	STORED IN THE BODY?	IMPORTANCE	OTHER
А	Carotenes found in green plants	Yes	Needed for healthy skin, digestion and reproduction	Most commonly deficient vitamin
B Complex	Manufactured by the bacteria of the rumen in adult sheep	No	Needed for the body to utilize protein and energy	It is important to feed the rumen properly so B vitamins can be made
С	Manufactured by the body tissues	No	Needed for chemical reactions in the body	
D	Sunlight on the skin	Yes	Required for proper bone formation along with Ca and P	Supplement in winter or if sheep are living indoors
Е	Young, green forages and whole grains	Yes	Required with Se for muscle function	Deficiency can lead to White Muscle Disease
К	Green leaves. Also manufactured by bacteria in the rumen of adult sheep.	Yes	Required for blood clotting	Deficiencies are rare

Which vitamin does the body need to use protein properly? 8.



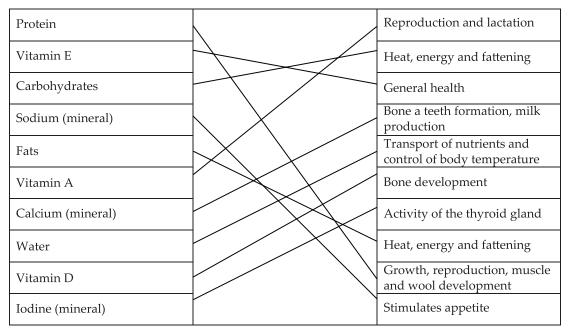
Identify the common feeds described below to complete the puzzle.



ACROSS	DOWN
 High in fibre but low in nutrients This perennial grass is good for grazing This type of hay is not well liked by sheep The king of forage crops 	 This grain is highly digestible and protein rich This heavy feed is high in energy Sheep don't find this feed very appealing The meal produced from this is high in protein and minerals A bulky grain with a fibrous hull Sheep love this sweet treat

Activity Answers

Nutrient Match Up



Name that Vitamin

- 1. E
- 2. D
- 3. K
- 4. D and E
- 5. D
- 6. A, E and K
- 7. C
- 8. B

Feed Frenzy Across

- 1. Straw 4. Orchardgrass 8. Timothy 10. Alfalfa
- Down 2. Wheat 3. Barley 5. Rye 6. Soybean 7. Oats
- 9. Molasses

Facilities

Objectives

To teach 4-H members about:

- Protecting sheep from predators
- Fencing
- Pasture
- Shelter
- Environmental Stewardship

Suggested Activities

Farm Tour or Slideshow

A picture is worth a thousand words. To help your club members learn about correct fencing, housing and shelter for sheep allow them to see various options. If possible take a tour of local farms to view various fence types, farm buildings and methods of pasture management. Ask club members to compare and contrast between the various things they see. Encourage the groups to compile a list of the most effective and cost efficient options for sheep.

Weed Identification

Weeds are responsible for reductions in crop yield and quality. They also lead to environmental degradation because they destroy native plant and animal habitat. To increase the productivity of pasture or hay fields it would benefit to take steps to control noxious weeds on the farm. Teaching your club members to identify and destroy noxious weeds common in your area will help them to increase the quality of their feed.

Check out the Field Guide to Noxious and Other Selected Weeds of BC online at: <u>http://www.agf.gov.bc.ca/cropprot/weedguid/weedguid.htm#noxious</u>

On index cards write the names and descriptions of noxious weeds common in your area. Print out pictures of the weeds and get your club members to match them up. If possible show members the weeds in the wild as well and teach them how to properly remove and destroy the weeds.

Popsicle Stick Building Contest

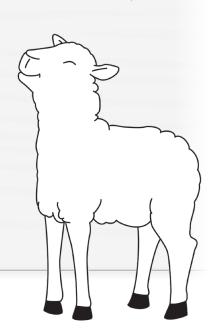
Challenge your club members to build the perfect barn, paddock, hay rack, creep feed or even an entire farm out of Popsicle sticks! Have members research, design and build the Popsicle stick structures at home. Have the structures on display at the club meeting. Allow club members to explain their design to the rest of the club. You may wish to provide a prize for the individual who has the most well thought out design.

Barnyard Trivia

1. Livestock should not be allowed to walk in creeks or streams for what two reasons?

a. Bank erosion and water contamination

- Name two potential hazards for sheep that are out in pasture.
 a. Predators, poisonous plants, injury from unsafe fencing
- 3. What negative effects result from overgrazing?a. Soil compaction and/or erosion
- 4. Name three negative effects of noxious weeds.
 - **a.** Noxious weeds: destroy native plant and animal habitat, harbour insects and diseases of crops, create unsafe conditions, reduce property values and the aesthetics of an enjoyable landscape and many can poison humans, livestock and wildlife.
- 5. Describe a proper location for a manure pile.
 - **a.** Manure piles should be: located far from water sources, covered to prevent runoff, and on a solid surface to prevent leaching.
- 6. When constructing a feeding area what can you do to ensure feed isn't contaminated with fecal material?
 - a. Make sure the sheep can't climb into the feeder.
- 7. Why is it important to have wide doorways in sheep barns?
 - **a.** It is important to have wide doorways in sheep barns so the sheep don't get crushed or injured (they all tend to try to get out the door at the same time).
- 8. What are the disadvantages of barbed wire fencing?
 - **a.** Barbed wire alone isn't effective at keeping predators out. It can also snag the sheep's wool and/or cut the sheep.
- 9. Describe proper storage of chemicals on the farm.
 - a. Chemicals should be in their original, labelled, containers. These containers should be stored in a locked storage box.
- 10. Why is proper ventilation important?
 - **a.** Poor ventilation can contribute to respiratory problems and to overall poor health.



Guardian Animals

There are various types of animals that can be used to protect sheep against predators. Three of the most common are dogs, llamas and donkeys. Each of these guardian animals has pros and cons. Research them and compare to determine which guardian you would select to protect your flock.

Dogs

Average Cost to purchase	
Average cost to feed and maintain	

PROS	CONS

Donkeys

 Average Cost to purchase

 Average cost to feed and maintain

PROS	CONS

Llamas

PROS	CONS
	- FA

Husbandry and Health

Objectives

To teach 4-H members about:

- Caring for their 4-H sheep project
- Common diseases of sheep
- Common sheep parasites

To provide members with the skills necessary to:

- Shear
- Trim hooves
- Identify project animals
- Administer medication

Suggested Activities

Rotating Field Day

4-H project leaders must ensure that 4-H members have all the skills necessary to care for their 4-H project animals. One way to teach members these skills is through a field day. On the field day experienced individuals should demonstrate for the club members how to: trim hooves, shear sheep, apply identification tags or tattoos, and how to give injections or oral medications. It is also important for club members to observe and receive instruction on methods for docking and castrating.

On a rotating field day the whole club will rotate from farm to farm, visiting all the locations where 4-H project animals are housed. At each farm one or two husbandry topics can be covered and then a fun activity or snack can presented. This allows 4-H to learn important husbandry skills while having fun and getting to know their fellow club members better.

The rotating field day also provides an excellent opportunity for the project leaders to do a husbandry check on the 4-H project animals. If done early in the year it would be an ideal time to ensure that all docking and castration of project animals had been completed.Even if it is not possible to have a field day it is important to have qualified individuals demonstrate correct husbandry procedures for your club members.

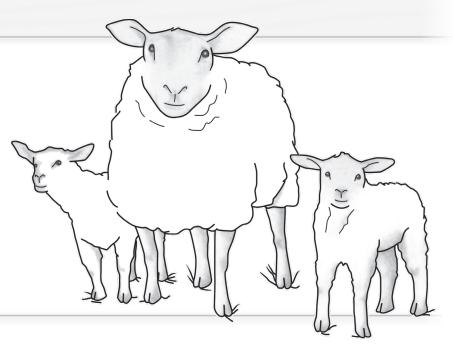
Creed of the 4-H Stockkeeper

Review the Creed of the 4-H Stockkeeper with your club. Divide the club into groups and using the attached activity sheet, have members brainstorm why it is important to complete all 11 activities included in the creed. After members have completed the activity sheet bring the group back together for a discussion on the value and impact of each item in the creed.

The Creed of the 4-H Stockkeeper

I will:

- 1. Provide comfortable and sufficient quarters for my livestock
- 2. Strive to improve the breeding and quality of my livestock, and the livestock in my community from year to year
- 3. Keep my animal free from parasites
- 4. Strive to keep my livestock in good health
- 5. Feed my livestock on time each day
- 6. Learn as much as possible about the best methods of feeding and caring for my livestock
- 7. Be kind to all animals
- 8. Provide animals with clean water at all times
- 9. Always be a good sport in competition
- 10. Keep an accurate record of my projects
- 11. Complete my project and take part in all the activities of my 4-H club each year



Health and Husbandry Jeopardy

Divide the club in to teams and using the questions below play a round of Jeopardy. Start out with a question at the 100 level. The first team to correctly answer the question gets the point and may select the next category and question. The team with the most points at the end wins.

Parasites

100: This is why it is a good idea to rotate between several different wormers.

• Not all de-worming products control all types of worms

- 200: This is often called a sheep tick but is actually a parasitic wingless fly.
 - Sheep Ked

300: This parasite is very long and has segmented body.

• Tapeworm

400 : Most internal parasites are picked up by sheep while they are doing this.

- Grazing or feeding
- 500: This is a very serious condition that is caused by a one-celled parasite. It can occur when feed or feeding areas are contaminated with manure.
 - Coccidiosis

Husbandry Techniques

100: If this is not done regularly the sheep may have difficulty walking.

• Hoof Trimming

200: Most breeds of sheep need this to be done once a year.

- Shearing
- 300: When tattooing sheep, this can be used to disinfect equipment between tattoos.
 - Rubbing Alcohol

400: All Sheep in Canada mist be identified with this.

- An approved Canadian Sheep Identification Program (CSIP) eartag
- 500: In Canada this group is responsible for the rules concerning registration of purebred sheep.
 - The Canadian Sheep Breeders Association



General Care

100: Don't hesitate to call this person when your sheep are sick.

• Veterinarian

200: This is even better for the health of the flock than medicine.

- Prevention
- 300: This should be done to prevent new animals from spreading disease within the flock.
 - Quarantine new animals

400: It is important to do this especially if you have given medication to your sheep.

- Keep records
- 500: According to the Federal Animal Diseases and Protection Act you must do this if Scrapie, Bluetongue or Foot and Mouth disease is detected in your flock.
 - Report it (to the district veterinarian for Agriculture and Agri-Food Canada)

Common Diseases

100: If the weather is wet and you notice your sheep limping it might have this. common condition.

• Foot Rot

200: Ulcers on the lips and tongue might be a sign of this viral condition.

• Sore Mouth

300: Bacteria in the udder can result in this dangerous condition.

- Mastitis
- 400: Common in lambs, the symptoms of this disease are diarrhea and lack of coordination.
 - Enterotoxemia

500: There is no effective treatment for the viral form of this respiratory disease.

• Pneumonia (Ovine Progressive Pneumonia)

Medication

100: Medication for worms is often administered this way.

• Orally or Drench

200: This is used to immunize sheep against conditions like Enterotoxemia.

• Vaccine

300: An injection of this will treat White Muscle Disease.

• Selenium and/or Vitamin E

400: This type of injection is given under the skin.

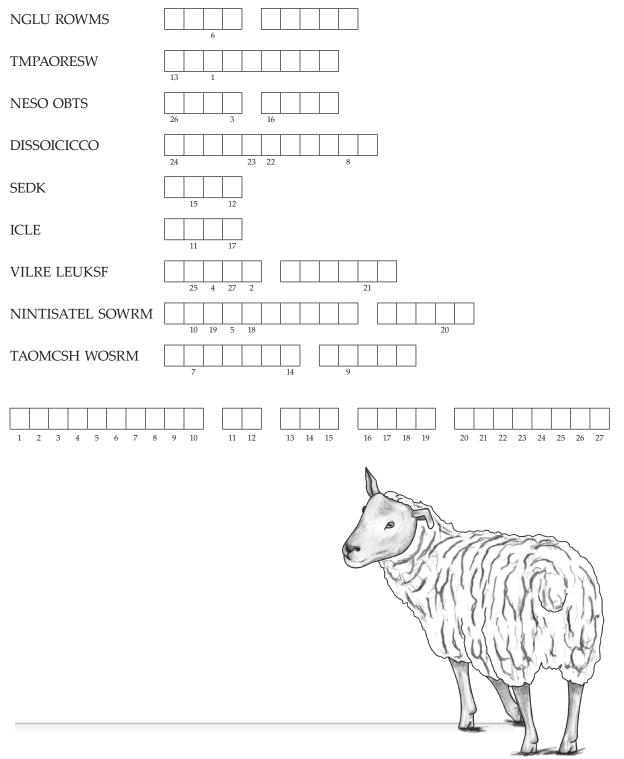
Subcutaneous

500: This type of medication can be used to treat bacterial infections but will have no effect of viruses or parasites.

Antibiotics

Pest Puzzle

Use your knowledge of common sheep pests to unscramble each of the clue words below. Copy the letters in the numbered cells to other cells with the same number to reveal a secret message.



Activity Answers

Pest Puzzle

- Lung Worms
- Tapeworms
- Nose Bots
- Coccidiosis
- Keds
- Lice
- Liver Flukes
- Intestinal Worms
- Stomach Worms

Secret Message

Prevention is the Best Medicine



Breeding and Lambing

Objectives

To teach 4-H members about:

- Breeding sheep
- Selection and management of breeding ewes
- Lambing

To provide members with the skills necessary to:

- Assist ewes during lambing if necessary
- Care for orphan lambs
- Dock
- Castrate

Suggested Activities

Periods in the Life of a Breeding Ewe Match Up

Understanding the various stages in the life of a breeding ewe will help members become better flock managers. To teach members about the requirements of breeding ewes, play this match up game. Write each stage, description, length and feed requirement on an index card. Shuffle the cards together. Give the stack of cards to the members and ask them to match up the description, length and feed requirement for each stage.

STAGE	DESCRIPTION	LENGTH	FEED REQUIREMENTS
Maintenance	Dry period between weaning and breeding	80–130 days	Low
Flushing	3 weeks before, during and 3 weeks after breeding	90 days	High
Early Gestation	First 15 weeks after breeding	105 days	Moderate
Late Gestation	Last 6 weeks before lambing	42 days	High
Lactation	Nursing lambs	50–100 days	Very high

If you have a large club make more than one set of index cards so everyone can participate.

Docking and Castration Demonstration

It is very important for 4-H members to learn to dock and castrate correctly. Docking or castration that is done incorrectly or that is not done soon enough can lead to a great deal of pain and discomfort for the animals. To build strong animal husbandry skills in your club provide timely instruction on these topics. If possible have a demonstration of proper procedure. Allow senior members to try docking and castrating under the supervision of an experienced individual.

If members are docking and castrating animals born on their farm, remind them of the following from the BC 4-H Sheep Project Regulations (Publication #1405).

- All male animals should be castrated as soon as the testicles are fully descended into the scrotum and must be castrated by the time they reach 6 weeks of age. Animals castrated by the short scrotum method or cryptorchid lambs are not acceptable 4-H project animals.
- Tails should be docked before the lamb is seven days old. The docked tail should cover the anus of the ram lamb or the vulva of the ewe lamb.

Poster Challenge

Challenge your club members to research one aspect of breeding or lambing and prepare a poster or model to show the rest of the group at the next meeting.

Suggested challenge topics:

- Junior: Challenge junior members to research what to look for when purchasing a breeding ewe. Their poster could include a list of desirable characteristics as well as a diagram of an ideal ewe.
- Senior: Challenge senior members to prepare a poster on lambing positions (normal birth, one leg back, hind feet first, breech...etc.). Their poster could include diagrams of the various positions.



Would You Cull This Ewe?

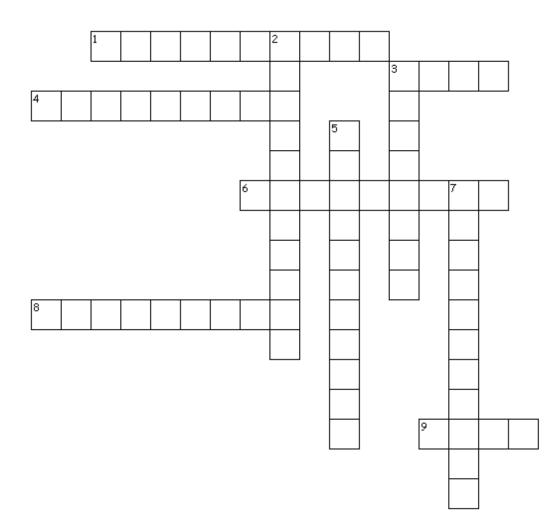
One of the most difficult things to do when you have a flock of breeding ewes is culling? What is culling?

What are some reasons that you might cull a ewe?

WOULD YOU CULL THIS EWE?	YES OR NO	WHY? OR WHY NOT
Your 3 year old ewe just weaned a healthy pair of twin lambs.		
Your 8 year old ewe just aborted. Her last lambing resulted in a single small lamb that died several days after lambing.		
Your 2 year old ewe has lost all her teeth.		
Your 3 year old has just delivered her second set of twins. She is not producing enough milk for both lambs.		
Your 4 year old is a "gummer" and produced a stillborn lamb.		
Your 2 year old ewe just weaned a large healthy lamb.		
Your yearling ewe is small for her age and has not been bred. Her mother was culled for health reasons after her first lamb was born.		
Your 6 year old ewe has always given you healthy lambs. This time she produced a small sickly lamb.		

* Thanks to 4-H Saskatchewan for this Activity

Breeding and Lambing



Across

- 1. The three main causes of lamb deaths are chills, unsanitary quarters and this
- 3. Season when it is ideal to mate sheep
- 4. It is important for baby lambs to get a drink of this as soon as they are born
- 6. The process of trimming off excess wool on the rear and udder of the ewe
- 8. The period of time when the ewe is nursing her young
- 9. This happens to mature ewes every 13-20 days

Down

- 2. This is important to consider when selecting breeding stock
- 3. You might start to do this 3 weeks before breeding
- 5. Mating animals of the same breed which are not related
- 7. This may be an indication that lambing is near

Activity Answers

Would You Cull This Ewe?

This activity is designed to make your members think about ewe management decisions they would have to make as a producer. Some of the answers are obvious. Some of them have no right answer. What is important in this activity is that the members have some thoughts or reasons for their decisions.

Have your members make their own decisions. Then have them get together to make group decisions on each of the ewes.

Breeding and Lambing Crossword

Across

- 1. Starvation
- 3. Fall
- 4. Colostrum
- 6. Crutching
- 8. Lactation
- 9. Heat

Down

- 2. Temperament
- 3. Flushing
- 5. Outbreeding
- 7. Nervousness



Showing Sheep

Objectives

To teach 4-H members about:

- Training and grooming techniques
- Showmanship procedure and criteria
- Show ring etiquette

To provide members with the skills necessary to:

- Train sheep
- Groom sheep
- Exhibit sheep

Suggested Activities Grooming Clinic

Grooming sheep can be very challenging and time consuming for even experienced 4-H members. In line with the 4-H motto, grooming is a skills best learned by doing. If possible arrange for an experienced senior member or alumni to teach new club members how to groom at a grooming clinic. Members should be instructed in the whole grooming process and given an opportunity to participate. Perhaps a non-project animal could be used for the clinic so that all club members could try carding and trimming without worrying about making a mistake on their project.

Showmanship Yeah's and Nay's

As a club brainstorm a list of showmanship Yeah's and Nay's. Include points such as how to respond to the judge as well as show ring etiquette.

Practice Show

A practice show provides an excellent for members, particularly those that are new, to become comfortable handling their animal in a show ring setting. It also allows the members to see how their animal will react to the other people and animals in the ring. Try to arrange for a practice show prior to the first time the members will exhibit their animals. You may act as the judge yourself or you may ask another qualified individual. Ask the members to complete the normal manoeuvres required in showmanship. Rather than evaluating the members, provide commentary throughout. Give them suggestions for improvement and be sure to praise them when they do things well.



Organize the Steps

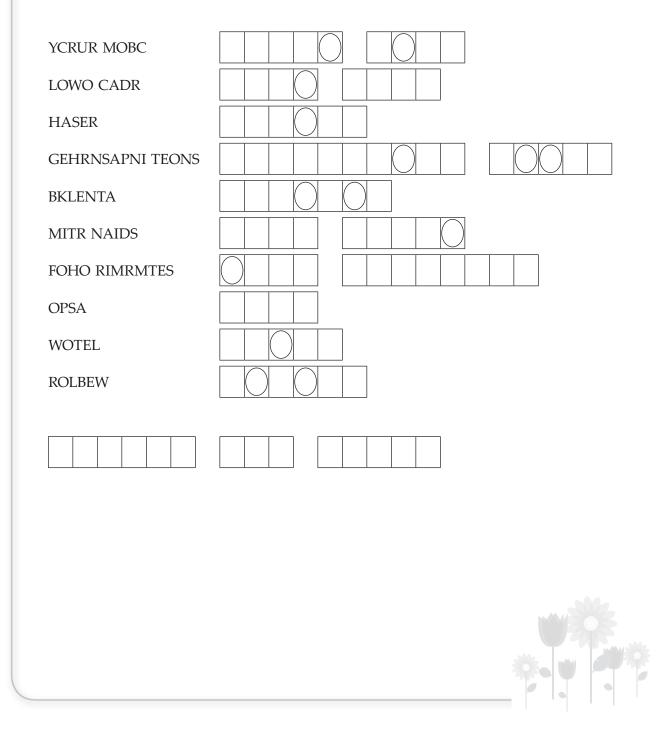
It is important to train your lambs gradually in steps. Organize the following training steps in the correct order by numbering them 1-7.

- ____ Pat the lamb and handle it as you would in a judging class.
- ____ Try to gently touch or pet the lamb while it eats.
- ____ Practice setting the lamb up. Have it stand still and try to move its legs so that they are set squarely under the body. Lift the head. Practice this until the lamb is able to hold the position for a number of minutes.
- _____ Move the lamb as you would when in the show ring. Grasp it under the chin with one hand and pat it on the dock with the other. Practice walking and turning different directions as you would in a show.
- _____ Visit the lamb. Sit in the pen and watch it eat and move about.
- Put a halter on the lamb. Gradually encourage the lamb to move forward by pulling the lead rope and patting it on the dock.
- Brace the lamb by standing in front of it and gently lowering its head and applying pressure to its chest. Have someone handle the lambs back and hindquarters while you practice bracing.



Garbled Grooming

Unscramble each of the clue words below. Each one is something you would need to groom your sheep. Take the letters that appear in circles and unscramble them for the final message.



Activity Answers

Organize the Steps

- 1. Visit the lamb. Sit in the pen and watch it eat and move about.
- 2. Try to gently touch or pet the lamb while it eats.
- 3. Pat the lamb and handle it as you would in a judging class.
- 4. Move the lamb as you would when in the show ring. Grasp it under the chin with one hand and pat it on the dock with the other. Practice walking and turning different directions as you would in a show.
- 5. Put a halter on the lamb. Gradually encourage the lamb to move forward by pulling the lead rope and patting it on the dock.
- 6. Practice setting the lamb up. Have it stand still and try to move its legs so that they are set squarely under the body. Lift the head. Practice this until the lamb is able to hold the position for a number of minutes.
- 7. Brace the lamb by standing in front of it and gently lowering its head and applying pressure to its chest. Have someone handle the lambs back and hindquarters while you practice bracing.

Garbled Grooming

Curry Comb Wool Card Shears Sharpening Stone Blanket Trim Stand Hoof Trimmers Soap Towel Blower

Final Message: Woolly and White



Marketing

Objectives

To teach 4-H members about:

- Products derived from sheep
- Marketing sheep products
- Food safety and traceability

Suggested Activities Advertising Campaign

Divide your club members into groups. Assign each group a sheep product (meat, wool, milk, lanolin...etc.) Challenge each group to develop an advertising campaign that would increase the consumption of these products. Give members a specified period of time to develop their campaign and then have them present it back to the rest of the group. The campaign could be open to their creativity or you could specify the type of campaign they are to create. Some possibilities are radio ads, television commercials, jingles, posters, and articles.

Wool Workshop

Host a workshop to teach club members about all about wool. If possible invite a guest to attend and demonstrate for member things such as fleece selection, processing and spinning.

Workshop activities could include:

- Have each club members attend the workshop wearing an item of wool clothing.
- Ask each person to come prepared to share an interesting fact about wool with the rest of the group.
- Have someone demonstrate how to shear sheep
- Teach members how to remove tags and correctly fold a fleece
- Allow members to view several fleeces of different qualities and teach them how to differentiate between them
- A hands-on wool craft activity such as felting

The workshop content should be designed to create awareness and interest in the wool industry.



Food Safety Fill in the Blank

Select from the following words or phrases to fill in the blanks below.

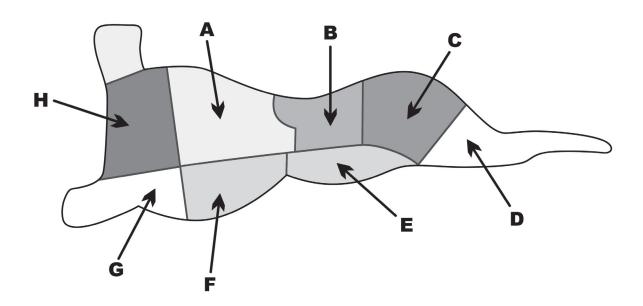
- Disease Outbreaks
- Records
- Animal Identification
- Labels
- Contamination
- Canadian Sheep Federation

- Consumer Confidence
- Plastic
- Revenue
- Canadian Sheep Identification Program (CSIP)
- Vaccination
- 1. The goal of ______ is to prevent and control the spread of disease and to provide safe food to consumers.
- 2. All sheep in Canada must wear an approved ______ ear tag.
- 3. The Canadian Sheep Identification Program will increase the ability to respond to _____.
- 4. The ability to trace the origins of livestock will lead to an increase in ________ in the sheep and lamb industry.
- 5. Keeping up to date ______ when using medications will prevent ______ of the food supply.



Meat Matters

Identify the following parts on the sheep carcass diagram below: rib, loin, leg, front, shoulder, flank.



Name the most common cuts of lamb available at the grocery store

Which parts of the carcass produce these cuts?

Which cuts of lamb are the most expensive and why?

Describe a popular way to prepare one of the most popular cuts of lamb.

How could people be encouraged to purchase more lamb meat?



Sheep By-Products

Search below to find common items that can be made using sheep by-products.

SGSYRODGGT BOF В F S W E S H R F X O H A YW P N SHOXZUUHUP R S F L Ο Е F ΖL Ι Q N S M M ΕΝΙ Т 0 L Q X Ι L R C A N В S Т В F Ο D C L J Ι ΑΗΟΑΟΑ А Ι Κ Т V T S M L R S Ν Ι LYL J Ο В R U O R X L H U M M A G А Ţ Α С T ΚΚΕ ΕΗS S R ΕΗR R L Т Р R D F YNOMRR Т С R L A W L O Т ΙΟΝΡΟΑΗΙ Ο В S S Р Τ A N O K Е Υ R M P С L С E N X M K W T LAHP S А S H C O V V K A Q D P L S C G C BMLZMCZONGFWSMX

ASPHALT BASEBALL CANDLES COSMETICS CRAYONS DRUMS FERTILIZER FILM FOOTBALL INSULATION LOTION MARSHMALLOWS PIANOKEYS SHAMPOO TAPE

Challenge: What part of the sheep is in each of the above products?



Activity Answers

Food Safety Fill in the Blank

- 1. The goal of *animal identification* is to prevent and control the spread of disease and to provide safe food to consumers.
- 2. All sheep in Canada must wear an approved *Canadian Sheep Identification Program* (*CSIP*) ear tag.
- 3. The Canadian Sheep Identification Program will increase the ability to respond to *disease outbreaks*.
- 4. The ability to trace the origins of livestock will lead to an increase in *consumer confidence* in the sheep and lamb industry.
- 5. Keeping up to date *records* when using medications will prevent *contamination* of the food supply.



Glossary

Objective

To teach members to use correct sheep terminology

Suggested Activities Alphabet Challenge

Write the alphabet on a piece of poster paper. Brainstorm with your club sheep words that start with each letter. Try to come up with al least on word for each letter of the alphabet.

Example: A – Alfalfa

B – Blue Tongue

C – Charollais

An alternative way to use this activity is to have your club members sit in a circle. Have the first member come up with a sheep word that starts with A, the second a sheep word that starts with B and so on. Continue around the circle until the end of the alphabet.

Hangman

Hangman is an excellent way to learn new vocabulary. Bring a poster paper and coloured pens. Ask each member to come up with a word or phrase related to raising sheep. Give each member a piece of paper and a pen and have them draw their hangman out. Have the members to take turns leading the club in a round of the game.

Word of the Day

At the beginning of the club meeting announce the word of the day (a sheep term relative to the current topic) and what it means. Challenge the members to use that word in context as much as possible throughout the meeting. Provide a prize for the member that used the term correctly the most times.

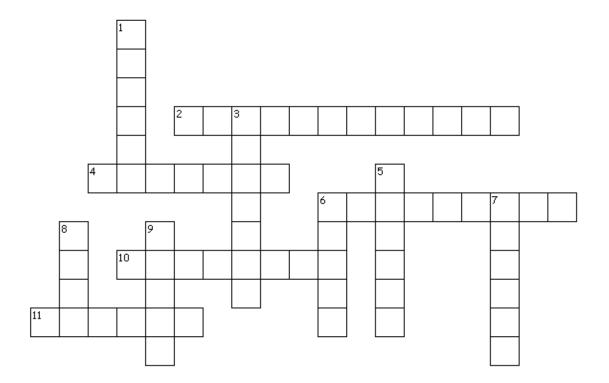
Match up the Definition

Write sheep terms and their definitions on index cards or pieces of paper. Put all the words and definitions into a hat. Have each members pick a piece of paper from the hat. Challenge the member to find the person with their corresponding word or definition. Once everyone has located their partner have them tell the rest of the group their word and what it means.





Use the clues below to complete the crossword puzzle using common sheep terminology.



Across

- 2. The degree to which an animal will eat a feed depending
 - if it is pleasant to the taste, smell and feel
- 4. Offspring of an individual animal
- 6. First milk produced by a fresh ewe
- 10. Pincer-type instrument used in docking and castration
- 11. A male sheep that has been castrated

Down

- 1. An old sheep that has lost most of its teeth
- 3. Natural oils in the fleece
- 5. Wool shorn from the body of a sheep
- 6. A spring type hook on a long handle that is used to catch sheep by a hind leg
- 7. Amount of feed fed to an animal over a 24 hour period
- 8. The father of the offspring
- 9. First stomach of the ruminant (cud-chewing) animal

Junior Proficiency

A Proficiency Certificate is an indication that a 4-H member has a complete working knowledge of Junior 4-H work. It is a privilege to write a Junior Proficiency exam; a privilege given by the leader when he/she feels a member has a complete working knowledge in project work, including Public Speaking, Demonstrations, Judging, etc.

Requirements to Write

- Any time following a member's thirteenth birthday.
- The member must have earned two badges.

Questions

A Proficiency Master Guide of questions is available for **4-H leaders only.** The sheep project Proficiency Master Guide is included on the following pages. This is the basic requirement only. Leaders are to make up exams based on Master Guides of questions and mark them. The exam should include: general 4-H knowledge questions 20/100, questions from the 4-H pledge, to 4-H Club Executive duties, to naming local 4-H and agriculture dignitaries to specific project knowledge questions 80/100, and questions that test the member's complete working knowledge of their project.

Exam Marks

A score of 60% is required to pass. *Submit marks and/or marked tests to DISTRICT 4-H AWARDS COORDINATOR for certificate.* The exam may take the form of an oral discussion between the member and leader if a leader feels that it would be more appropriate.

Junior Proficiency Deadline

To enroll as a Senior member, a member must write his/her proficiency exam prior to December 31st of the previous year. *Results must be submitted to DISTRICT 4-H AWARDS CO-ORDINATOR by December 31st.* A member who writes his/her proficiency exam after December 31st **completes** the year as a junior and is eligible to receive Senior Skill Certificates and privileges of the Senior 4-H Program the **following year**.

For more information on Junior Proficiency Certificates and other 4-H Awards consult the 4-H Award Opportunities Guide (Publication #128).



Quick Facts on Senior Projects

Senior Management, Senior Self-Determined, and Junior Leadership projects are intended to challenge senior members and provide them with an opportunity to develop new skills. The senior level projects can also help members to earn external 4-H high school credits. Part of your role as a 4-H leader is to provide information to members about all the project options including those available only at the senior level.

Senior Management Projects

Senior management projects are specific to the project area. In the sheep project Units V and IX (sheep flock and wool type sheep flock) are eligible to be Senior Management projects if the flock contains four or more ewes. Unit IX (feedlot) Unit XII (advanced skill) are also Senior Management options.

Points of Interest

- 10-12 months in length.
- Proposal to be submitted to the BC 4-H office
- Project to be approved an evaluated by Youth and Community Development staff.
- Project to be overseen by the club leader.
- Livestock Senior Management Record Book (Publication #411) may be used for some projects. If the record book is not applicable to the project the members must develop their own record keeping system. Detailed project records are required.

Senior Self-Determined Projects

Senior self-determined projects may be on any subject and do not need to be related to sheep project work in any way.

Points of Interest

- 10-12 months in length.
- Proposal to be submitted to the BC 4-H office
- Project to be approved an evaluated by Youth and Community Development staff.
- Project to be overseen by the club leader.
- Members must keep detailed record of the project.

Junior Leadership Projects

Junior leadership projects provide an opportunity for experienced senior members to share their skills with the rest of the club. Junior leadership projects should focus on teach a specific skill (public speaking, judging, showmanship...etc.) or on the organization of a 4-H event.

Points of Interest

- 4-6 months in length.
- Members must be 14 years old and have achieved a minimum of 2 years in 4-H.
- Application from junior leader record book (Publication # 5110) to be submitted to the BC 4-H office
- Project to be approved an evaluated by Youth and Community Development staff.
- Project to be overseen by the club leader.
- Members must keep a detailed record of their project using the junior leader records book (Publication #5110)

General Tips

- If senior members are unsure about what type of project to try or whether a specific idea will be suitable for a senior level project, consult the Youth and Community Development staff. They may be able to help with some ideas on expanding the project.
- Proposals should be sent to the BC 4-H office before the project is started.
- Make sure the proposal your member sends in is thorough.
- When the Youth and Community Development staff member writes their approval letter they may ask some questions. This is to help clarify the project so the leaders and marker are clear on the project goals.
- The club leader should check on how the project is progressing regularly.
- The member should update the rest of the club on how their project is progressing at club meetings and events.
- The project leader should provide written comments throughout the project for the member to include in their records.
- Just like the outline, make sure the completed project is detailed and thorough. The marker should be left with no questions about what was done.

For more information on Senior Management, Self Determined, and Junior Leader project consult your project regulations, Self-Determined regulations (Publication #5005), and the Junior Leadership regulations (Publication #5101).



Resource List

Books

<u>A Practical Guide to Profitable Sheep Production.</u> Meg Smart (1996). Aspen Hills Enterprise

Raising Sheep the Modern Way. Paula Simmons (1976). Garden Way Publishing

<u>Recommended Code of Practice for the Care and Handling of Sheep.</u> Canadian Agri- Food Research Council (1995).

<u>Storeys Guide to Raising Sheep.</u> Paula Simmons and Carol Ekarius (2001). Storey Publishing.

Websites

InfoBasket - BC Ministry of Agriculture and Lands www.infobasket.gov.bc.ca

BC Sheep & Lamb Fact Sheets & Publications - BC Ministry of Agriculture and Lands. <u>www.agf.gov.bc.ca/sheep/factsheets.htm</u>

Sheep 201 – A Beginners Guide to Raising Sheep www.sheep101.info/201/index.html

Sheep 101 www.sheep101.info

BC Sheep Federation <u>www.bcsheepfed.com</u>

BC Purebred Sheep Breeders Association <u>www.bcsheep.com</u>

Canadian Sheep Federation www.cansheep.ca

Canadian Sheep Breeders Association <u>www.sheepbreeders.ca</u>

Canadian Co-operative Woolgrowers Limited <u>www.wool.ca</u>

The Merck Veterinary Manual <u>www.merckvetmanual.com/mvm/index.jsp</u>

World Sheep <u>www.worldsheep.com</u>

Magazines

Sheep Canada <u>www.sheepcanada.com</u>

The Shepherds Journal www.shepherdsjournal.com

B.C. 4-H Provincial Council

2743 – 30th Street Vernon, B.C. V1T 5C6 Toll Free: 1-866-776-0373 Website: www.bc4h.bc.ca

